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GEOGRAPHY IN THE SOUTH AFRICAN CURRICULUM
IN RELATION TO DEVELOPMENTS IN THE TEACHING
OF THE SUBJECT OVERSEAS.

by

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A.J. van der Merwe

Dedication

Dedicated to:
Sanita and the children

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2. J.A. Koppen - Adviescommissie voor de leerplanont- wikkeling - aardrijkskunde - Enschede.	761

3. List of correspondents

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Australia

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CHAPTER 1.

INTRODUCTION - THE IMPORTANCE OF GEOGRAPHY IN THE SCHOOL CURRICULUM.

The mind and character of an individual can be fostered by the subjects which have proved themselves to be of value in improving the education of man, not only from scientific, but also from moral and aesthetic stand points. The question is whether or not geography as a subject fulfils this requirement. For this it must have a distinctiveness of aim and a limitation of content. Civilization today is passing through great crises. Wars, rumours of wars, cold wars, economic crises, exhaustion of natural resources etc. are reported daily in the newspapers. Education of a certain type is needed - an education which will develop in man a deep concern for the freedom and good life of his fellows, and some understanding of the major problems of the world and possible solutions. Man is no longer a unit of a small self-contained community, but has his responsibilities as a citizen, firstly of his own country and secondly of a world community. Upon his solutions to the problems of the world depend to some degree the progress and development of his town, country, of the world generally.

Education therefore ought to train the child to take his place in the world, not only as a man, but as a citizen. Children must be taught to think and reason for themselves. Geography as a subject lends itself magnificently to the general education of men and the development of good citizens. Geography can help to teach pupils to understand and experience the adult world.

South Africans are fortunate in that geography is a compulsory subject up to standard seven. In high school beyond this level it is not offered by all schools.

THE PROBLEM TACKLED IN THIS THESIS

In part One a review will be made of the development and emergence of geography as a school subject. Chapters 2 and 3 are historical surveys and chapter 4 deals with the present situation of geography in the curriculum. At the end of Part 1 the historical development of geography as subject especially at University level will be given in table form.

In Part Two the South African Senior Secondary Geography syllabus will be compared with those of some overseas countries - The Netherlands, Canada, United Kingdom and Australia. As these countries have more than one syllabus, only one from each is selected for comparison with South Africa. Because of space not all the material received from overseas could be included. An effort has been made to include as much representative material as possible. Examination papers are included to show the approach of the country to evaluation, and to serve as examples to guide our own South African evaluation, external or internal. It is hoped that the comparison will also serve as an indication of how the South African syllabus compares with overseas syllabuses.

Part III will be a short chapter dealing with ideas and suggestions especially from overseas, which could be of value in the South African situation.

EVIDENCE FOR THE SOUTH AFRICAN GEOGRAPHY CURRICULUM.

It was decided to search for following types of evidence for the geography curriculum:

- (a) Statement of aims
- (b) Syllabuses (content, process, organizing, concepts)
- (c) Textbooks, atlases and other 'software'
- (d) Teaching methods and strategies
- (e) Examinations and other forms of evaluation
- (f) Numbers in schools learning geography
- (g) Preparation of teachers for geography teaching

GEOGRAPHY IN THE CURRICULUM

There are various definitions for a curriculum:

"A programme of activities designed so that pupils will attain, as far as possible certain educational ends or objectives." (Hirst, 1969).

"All the learning which is planned and guided by the school." (Kerr, 1968).

A more complete definition of the curriculum is however given by Hooper (1971):

"The curriculum is socially and historically located, and culturally determined. Curriculum does not develop in a vacuum but proceeds on the basis of beliefs - seldom made explicit - about how people learn, what human beings shall be like, what society is."

The curriculum is commonly divided into four interrelated components, namely curriculum objectives, knowledge, learning experiences and curriculum evaluation. This can be represented by a simple model : (Kerr, 1968).

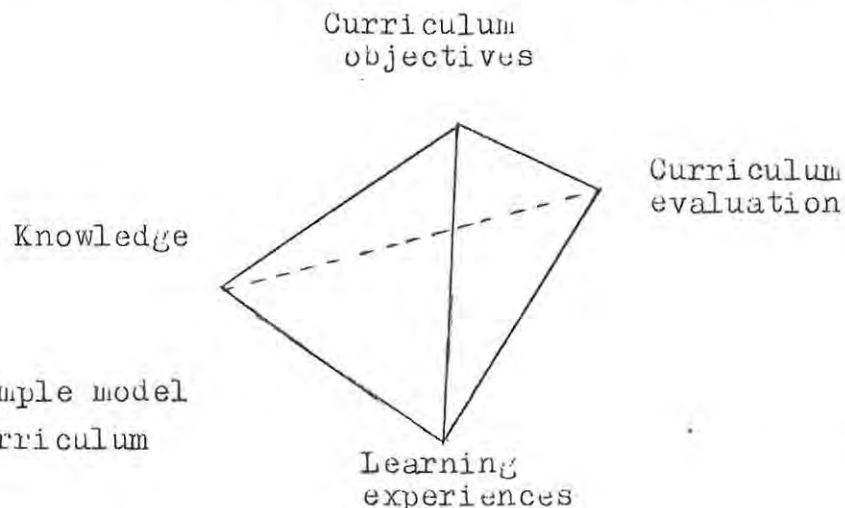


Fig. 1
Kerr's simple model
of the curriculum

Wheeler (1967) used a circle to illustrate the curriculum process:

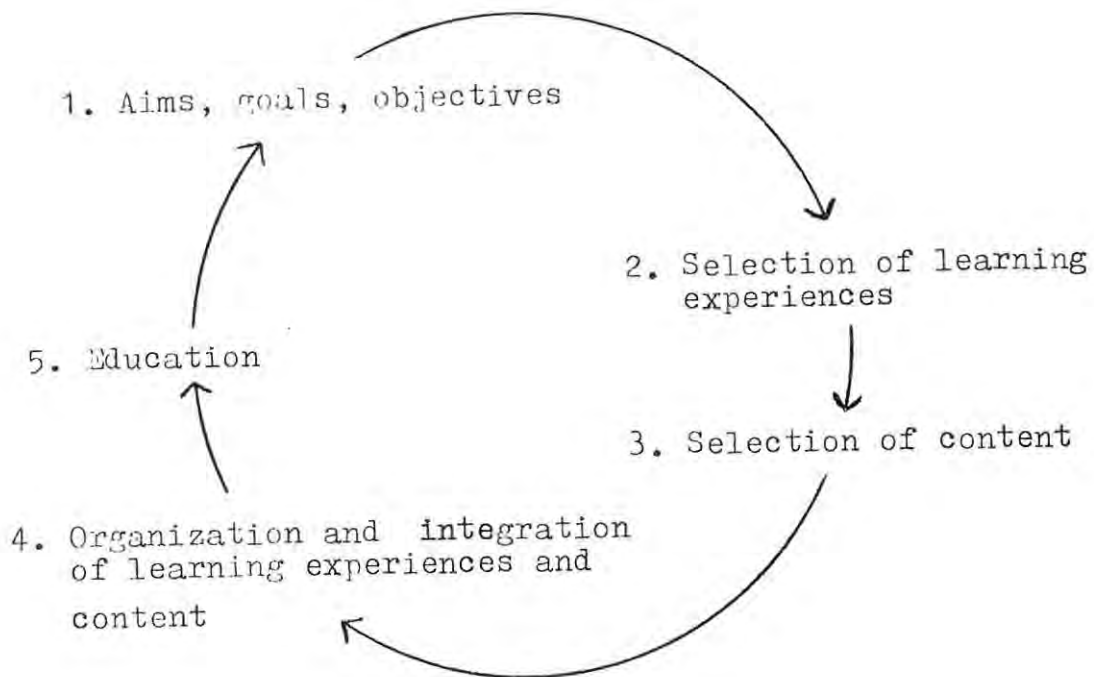


Fig. 2

Wheeler (1967) thought of the curriculum not as a content to be taught but rather a process taking place in the teaching - learning system. The curriculum is thus something dynamic of which content is but one element in the system.

In the case of one subject, the term may be used to describe what is planned to happen in a school in a certain subject area. In Geography for example the curriculum could be set out in a document giving:

- the aims of the course
- the content of the course
- what teaching units could be used
- what the objectives and teaching strategies of the course are
- how the course is to be evaluated. (Graves, 1979).

Unfortunately the South African geography syllabus does not answer to all of the above requirements. The Cape geography syllabus only deals with content and evaluation. Other aspects are set out in an outdated guide issued in 1974. (See appendix B 1) It would be interesting to know how many geography teachers in the Cape are aware of the existence of such a document. One can only hope that syllabus revisers will include in the 1982 revision a suitable preamble.

Marsden (1970), Graves (1975 and 1979), Hall (1970), Wallford (1973), Blachford (1973) and many others have pointed out the necessity for including geography in the curriculum. There is no straight answer to the question of what should be included in a geography curriculum. One can only argue in broad outlines of what should be, and what should not be included. There are many factors influencing such a decision. (See fig. 3 and pp 9 - 9 below).

The division of the secondary school curriculum into three stages makes the selection of content easier. In the first stage i.e. ± standards five and six, the pupils are mainly in the stage of 'concrete operations' (Graves, 1979). The content will thus have to deal with relative simple "concepts by observation", simple relationships which can be illustrated by concrete examples (e.g. the accumulation of cold air in a valley) and simple skills without complex mathematical understanding (e.g. bar graphs). (Graves, 1979). In this stage it is important to build on a basis of first hand knowledge of phenomena as far as possible. Such a basis would enable pupils to make comparisons with other less familiar phenomena.

In the second stage i.e. ± standards seven and eight

"concepts by definition" can be introduced. (Graves, 1979). Now relationships of a more complex nature may be taught and somewhat more complicated skills may be introduced e.g. (proportional divided circles) (Graves, 1979).

In the third stage, i.e. \pm standards nine and ten, pupils are able to handle more abstract situations, self motivation is much stronger. The pupils' "critical faculties are also much sharper and they can be initiated into the idea of knowledge as problematical rather than certain" (Graves, 1979, p. 59). Much more difficult concepts can also be handled by the pupil (e.g. spheres of influence of a central place) and they also become aware of the relationships between the different sections of geography and between geography and other subjects.

One can now decide to arrange the content of geography to take into account these different stages. Two things seem however of great importance :

- (1) the course must be based on certain aims and the content must be able to achieve these
- (11) the total content may be organised in various ways according to the system of classification.

Two approaches to the selection of content are the conceptual approach and the ecosystem paradigm. Burtonwood in Graves (1979, p 65) suggests that the geography syllabus can be organized around six basic concepts.

1. Patterns in geography
2. Best Location
3. networks
4. Spatial variations in economic development
5. Spatial system
6. Spatial intersection

The ecosystem approach can be illustrated by the following model:

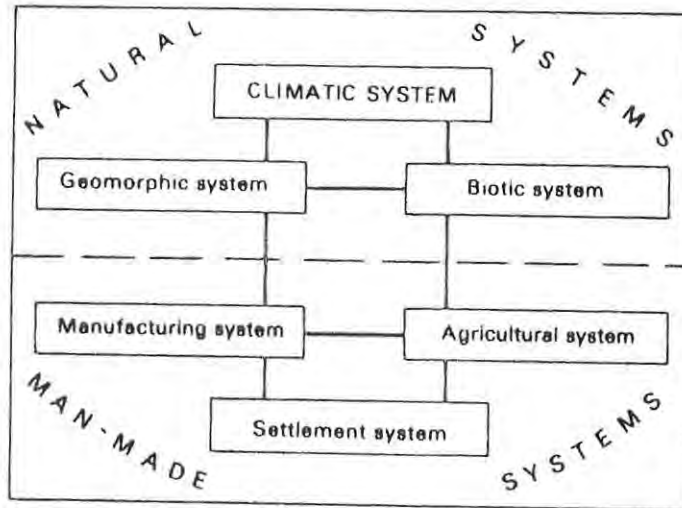


Fig. 4

(Graves, 1979, p 68)

Graves argues that the ecosystem paradigm provides a satisfactory basis for structuring the content of geography - especially as it exists today. Graves (1979) gives preference to the ecosystem mainly because it corresponds with some of the traditional concerns of geographers. For the possible content of an ecosystem approach see Graves (1979, pp.70 - 82). The author supports this as the conceptual approach could be dealt with at university level. In some countries, e.g. The Netherlands, there is a tendency to move in the direction of the conceptual approach. (See syllabus of the Netherlands, p. 107 below.)

The above are not the only frameworks that exist : there are many more, e.g. the regional and concentric approaches, and it is up to the education authorities to decide the direction in which they wish to move.

INFLUENCES THAT DETERMINE THE CURRICULUM IN GEOGRAPHY

It was mentioned earlier that there are certain pressures on the curriculum. In Fig. 3 the influence on the South African geography curriculum are given diagrammatically. The influences on the curriculum of a subject

can be divided into three main categories namely educational influences, academic influences and social influences. The influence of each of the different sections is shown by proportional arrows. Social influences could be direct but they usually have an influence on the decision makers in the government and in their turn they influence the educators. The social influences in the diagram are fairly clear except for the influence of the hidden curriculum. According to Jenkins and Shipman (1976) the above mentioned and "other influences on the individual comes from his/her involvement in an organisation with consistent assumptions as well as specific objectives, an elaborate set of expectations as well as a specific mode of working. Over time traditions and rituals are developed which reinforce the influence exerted over the individual." For a more detailed explanation the reader is referred to Jenkins and Shipman (1976) and Apple (1979). The size of the arrows shows the relative importance of the different influences.

Although the representatives of teachers and the provincial administration are in a numerical majority in the syllabus committees, it seems that they are dominated by the academics (especially university geographers).

Teachers in South Africa do not have a direct say in curriculum change but they can give their point of view to the Study Committee for geography through the different teachers associations or through the inspectorate. These two methods are not very successful because only a few of the teachers belonging, for example, to the S.A.O.U., know who their representative on the study committee is. A far more valuable method has been the establishment of Teachers Centres in the major centres of the Cape Province. Through the Teachers Centres study groups for different subjects have been established. These groups have regular meetings at which various aspects of geography

teaching is discussed. The ideas coming from these discussions are then channeled to the Study Committee for geography.

Development in geography overseas influences the South African curriculum through the universities in particular. Geography is an international subject and South African academics are abreast of the changes taking place at the frontiers of the subject. The inspectorate make it their business to know about changes in school syllabuses overseas.

P A R T 1

GEOGRAPHY IN SOUTH AFRICA.

CHAPTER 2 - GEOGRAPHY DURING THE PERIOD 1803 - 1918 -

THE EUROCENTRIC APPROACH.

during this period geography was not an official subject in Cape Government schools. At a number of schools geography was taught by teachers who had the enterprise to teach outside the limits of the prescribed syllabus. It was however of an unsatisfactory nature - it ignored entirely the geography of the pupil's home country. A possible reason was the fact that there was no material available. (knox, 1959).

One government school at which geography was taught at that time was Mr. Rose-Innes's school at Uitenhage. Other schools at which geography instruction was given were the Grahamstown Free School (1851); the Academy, opened by Fairbanks and Pringle (1842); the Grammar School founded by Rev. E. Judge (1824); and the school "Tot nut van't Algemeen" (1805) in Cape Town.

In 1829 the South African College was founded and it was suggested that one Master in Science should take charge of the elementary subjects, of which geography was one. In the College time table of 1831 - 1832 it was mentioned that instruction was given in Ancient and Modern Geography, and the use of the Globes by the Professor of Mathematics. By 1838 a great diversity of schools had come into existence and there was a strong feeling that in view of the disunity of function, and the lack of uniform and centralized control in educational matters, it was desirable that a new educational system should be formed. Sir John Herschel was at the Cape at that time, and as he was greatly interested in education, he was asked to help in the planning of a new system. His ideas and recommendations provided

the basis for the Government memorandum of May, 1839. In this memorandum provision was made for the establishment of a Department of Education under control and supervision of a "General Superintendent of Public Education". An abstract from an appendix to the memorandum, in which courses of study were incorporated, gives us the following information regarding Geography:

Primary or Elementary department

3. Descriptive Geography, the outline of general history, chronology.

Secondary or Classical and Scientific department

4. Physical and Mathematical Geography, the outlines of Geology.

THE PERIOD OF ROSE-INNES (1839 - 1858)

In accordance with the recommendations of this Memorandum an Education Department was established in 1839 under leadership of Mr. James Rose-Innes. The courses of study drawn up by Mr. Rose-Innes were much more realistic than those advocated by Herschel.

Rose-Innes's courses in Geography were:

Junior Division, Elementary Course

Third Class - English Language and reading, Arithmetic, General Knowledge, Writing, elementary course descriptive Geography - consisting mainly of exercises on the maps of the world.

Senior Division, Elementary Course

First Class - Same as Junior Division plus: A full course of Descriptive Geography - conversational illustrations of the figure and motions of the earth, and its main physical appearances: a brief outline of its main historical events and their chronology.

Second Class - Same as above. In Geography and History the course laid down for the first class continued. Questions on the history of the British Empire, problems on the terrestrial Globe and construction of empire maps.

The characteristic feature of this Geography Syllabus is the extreme vagueness of the instructions given. At this time the textbooks which were prescribed were the real guides to the detailed work of everyday teaching. As teachers of the time were very poorly trained or had no training at all, textbooks were slavishly used.

Only two textbooks were available: "Gibson's Etymological Geography" written by T.A. Gibson and G.M. Gibson. The entire book of 149 pages consisted of a list of the names of geographical features eg. towns, mountains, rivers, etc. After each name, the situation of the feature concerned is given in terms of country, province, districts, etc. In the first 50 pages the meaning and etymology of each of these place names are given, and in the final 96 pages the post fixes of the terms are similarly treated. The book is arranged in the form of a dictionary. In the preface the teacher is given the following instructions:

"In using this Manual it is recommended that the Teacher, as the occurrence of one or more of the Terms may occasionally suggest to him, prescribe a portion, upon which the pupil may undergo examination in the following manner:

Question: The town at the mouth of the Dee.

Answer: Aberdeen - Of the Don Aberdon, now old Aberdeen.

The second book was: "Outlines of Geography for the use of the Edinburgh Academy". It had 146 pages of which about 97 were devoted to Europe, 33 to Asia and about five to Africa. The content was confined to geographical facts, set out in the dullest manner.

Two criticisms seem applicable especially to the latter of the two books. There are no maps, photos or diagrams in the book - no Geography textbook can exist without them. Furthermore the book is a mere mass of topographical facts - something that is not geography and it is not educational. From these books it is clear that the emphasis was on physical and astronomical geography - something that was typical of that time.

Apart from these two textbooks there is evidence that the

Geography taught in Cape schools at the time was merely facts about topography - there was no sign of human reference. The nature of textbooks used had an important influence on the nature of the Geography taught at that time. It can be derived from questions put to candidates by the Superintendent General on his inspection tours in 1852 - 1853. Such questions were:

Geography.—Describe the relative situations of the different oceans, in respect to the continents between which, or near to which, they lie. What oceans meet at the southern extremity of Africa?

What are the chief mountain ranges of Asia and America? What are the highest points in these elevated regions? Name the principal rivers that take their rise there; the direction in which they flow, and the countries through which they pass? Which is the largest of these rivers?

Whether is the ocean level nearest to the earth's centre at the equator or at the pole? How is this explained?

Explain briefly your views of the cause and course of the trade winds.

In what direction does the longest line lie that can be drawn across the African continent? Through what countries would it pass?

Name the principal island groups in the Pacific Ocean, distinguishing those situate south of the equator from those to the north? Where are the Cape Verde Islands, Madagascar, and Cuba?

Great Britain and New Zealand are antipodes to each other; what would you infer from this, generally, in regard to their climate?

There is a constant current in the Straits of Gibraltar; does it flow into or from the Mediterranean Sea? How do you account for it?

Where are Calcutta, Rio Janeiro, Washington, Madeira, Moscow, Antioch, Bassorah, Rome, and Mexico, situate. Name the countries to which they belong? (Report of Public Education for 1853, pp. 21 - 23).

The teachers of Geography at that time were poorly equipped for their work and most of them followed the textbooks slavishly. This and the insufficiently detailed syllabuses were responsible for the fact that the Geography taught was not of a very high standard. (Knox, 1959, p. 47).

THE PERIOD OF LANGHAM DALE (1859 - 1892)

In 1859 Rose-Innes was succeeded by Langham Dale as Superintendent General. Shortly after he took office, a Government commission was appointed to look into the conditions of established schools in the Cape Colony. The commission recommended courses for study for different schools; re-form schools, First- Second- and Third - class schools. Only in the course of the Third - class town school the subject "Descriptive Geography" was mentioned.

As it became impossible for Dale to visit all the schools in the Colony, he called for help and in 1872 two inspectors were appointed. At the same time a revised Table of Standards of Attainment in Elementary Subjects was introduced. The changes brought about by this table involved the reduction of the number of primary classes from five to four. For the first time the term standards was introduced. A limited Geography course for Std. III and IV was brought in. For Std. IV "The world generally; and South Africa specially" were prescribed. This was the first time the study of the mother country is specifically mentioned in a Geography course. - In 1882 Donald Ross undertook an extensive inspectorial tour. After a tour of four months in which he visited 285 schools he suggested the following: six classes should be introduced, Geography instruction should commence in std. III and that the requirements should be as follows:

- Std. III - Outlines of the Geography of the Cape
- Std. IV - Outlines of the Geography of Great Britain
- Std. V - Outlines of the Geography of Europe.
- Std. VI - Outlines of general Geography

A fifth standard was added in 1885 and a sixth in 1887. Under the new conditions the course for the first four standards remained unchanged but for V and VI it changed as follows: Std. V - Physical Geography and in Std. VI Geography found no place.

Changes were made to the above from time to time.

With the adding of Std. VI to the primary school Dale introduced a "Public Schools Certificate", given to all std. VI pupils who passed after an inspection. The reason for Dale's excluding of Geography from the std. VI syllabus might lie in the fact that he did not regard Physical Geography as an important physical science.

A Board of Public examiners was founded and it continued to operate as an external body until 1873. Its function and powers were taken over by the University of the Cape of Good Hope. The University controlled three examinations namely, The Matriculation, the School Elementary Examination

and the School Examination for Honours.

The first syllabuses

The first Matriculation syllabus was published in 1875 and from then the requirements of the examination largely determined secondary - school courses in the Cape. The following syllabus was used:

I. Languages, Literature and History.

1. The history of England and modern descriptive geography.
2. The Greek and Latin Languages.

II. Mathematics.

III. Physical Science - viz. physical geography, or geology , or chemistry, as may from time to time be notified by the Council.

Candidates shall not be approved by the Examiners unless they have shown a competent knowledge in each of the following subjects:

1. The English language, English history, and modern geography.
2. The Latin language.
3. Arithmetic.
4. Algebra.
5. Geometry. (University of the Cape of Good Hope, Calender for 1875).

From this it can be taken that two types of Geography were prescribed, namely "Modern descriptive Geography" and "Physical Geography" as a subheading of Physical Science.

Here we have a conception of geography whereby a descriptive aspect of the subject with human reference is prescribed for study in complete isolation from physical geography. The latter, which is the non-human basis of geography, is here elevated to a place among the natural sciences. We thus have two aspects of geography prescribed as two distinct and self-contained courses of study.

The only other syllabus of the Dale period in which both physical and descriptive geography were prescribed for study, is that for the School Elementary Examination. The papers for the School Elementary Examination

reveals that the physical and descriptive components of the course were examined as completely separate aspects of subject matter. Thus, even in this single instance in which physical and descriptive geography were prescribed as a combined course, the two aspects were submitted to a mutually-exclusive treatment.

The second point is also concerned with this same dualistic treatment. In these 1885 regulations, "Modern descriptive Geography" is compulsory, and is a failing subject; while physical geography is set down as one of the three sciences which were to be alternatively studied for matriculation "as may from time to time be notified by the Council." Actually, the science subject which was notified for study in 1875 was chemistry; and indeed, until 1881, physical geography was prescribed for only one year, namely for 1874. In 1881, physical geography was eliminated from the syllabus, but descriptive geography continued to figure as a compulsory subject until the year 1884, when it too was abolished.

Thus, during the entire period between 1873 and 1884, when geography figured in the syllabus, only the matriculation students of 1874 were able to study both physical and descriptive geography; and the candidates for each of the other years were obliged to study the compulsory "Modern descriptive Geography".

We can also give attention to the School Examination for Honours. It was introduced in 1880 and was more or less the equivalent of the Junior Certificate of the 1950's.

The requirements were as follows:

Group I - Literature

This group consisted of Languages only.

Group II - Science

1. Arithmetic and Algebra
2. Geometry
3. Outlines of Inorganic Chemistry
4. Elements of Physics or Physical Geography, with the

outlines of any of the following subjects: Mineralogy, Botany, Zoology, Geology.

A candidate should choose any three subjects in each group. A closer look to the papers set in Geography for this examination reveals the following: \pm 35% of the questions were on climatology and \pm 27% were on geomorphology. The rest were made up by oceanography, map-drawing and mathematical Geography. It was also the first time that there was something about mapwork in a paper. (See question 2, 1885 Examination for Honours table 2)

KNOX'S CONCLUSIONS REGARDING EXAMINATION PAPERS

From the studying of old examination papers during Dale's time as Superintendent General, Knox (1959) emerges with nine general conclusions:

- "1. Secondary instruction in the Dale schools was very largely confined to physical geography, and nowhere was any attempt made to correlate descriptive and physical phenomena. The dualistic conception which resulted in the mutually exclusive treatment of the physical and descriptive aspects of geography, was, as we have seen, characteristic of geographic thought in the latter part of the nineteenth century.
2. In all the papers on physical geography a sound balance is maintained between questions which demand a mere knowledge of facts and those which require an intelligent grasp of principles and relationships. It is necessary to add, however, that the kind of question which demands a novel synthesis or analysis of facts for the purpose of demonstrating principles and relationships is practically absent. The great majority of the questions which require intelligence could, in fact, be satisfactorily answered by candidates who could substitute a spurious show of intelligence for genuine understanding by reproducing rote-learned explanations, and since the intellectual demands of these examinations could be so easily satisfied, it seems reasonable to assume that the many ill-trained and incompetent teachers who functioned at this time, must have been un-educatively pre-occupied with the rote-teaching of cut-and-dried explanations.
3. While the examination papers which the Board of Public Examiners in Literature and Science set on physical geography were set mainly on climatology and oceanography, the physical-geography papers of the University of the Cape of Good Hope were largely climatic, oceanographic, and geomorphological in scope.

School Examination for Honours, 1885

e)

(University of the Cape of Good Hope, Calendar for 1885-1886, p. 156).

1. Write a short account of the relative age and the arrangement of rock-formation.
2. Draw a sketch-map of South Africa, and fill in the coast-line, the principal mountain ranges, the principal rivers, and the ocean currents.
3. Write a brief account of any two of the following subjects:
 - (a) Waves,
 - (b) Tides,
 - (c) Currents,
 - (d) Springs.
4. What do you know of the nature and composition of the atmosphere, and of "those features of the atmosphere - its heat, moisture, and motions - which bear more directly on climate?"
5. Write a short essay on "The principal Races of Man".

(e) School Higher Examination, 1890

(University of Cape Town, Calendar for 1890-1891, pp. 179-180).

1. Give a sketch of the earth's path round the sun. Explain the terms Perihelion, Aphelion, Summer Solstice, Rotation and Revolution of the Earth, Meridian, Zenith, Celestial Pole.
2. Explain the method of measurement, called triangulation, which is used in mapping a country.
3. Give a sketch of the coast lines of the Northern Atlantic Ocean, with the isothermal lines: and explain the unequal distribution of temperature in January.
4. Give an account of the saline ingredients of sea water.
5. Enlarge upon the following statements:-
 - (a) The sea regulates the distribution of temperature:
 - (b) The sedimentary rocks are mainly formed from the materials carried by the rivers into the sea, or worn off by the sea from its shores.
6. Give a detailed description of volcanoes.
7. What is a "mineral spring?". State what you know of the mineral springs of South Africa.
8. Give a sketch of the course of the Orange River with its principal tributaries. Explain also the terms Delta, Right Bank, Drainage, Basin, Watershed, Bifurcation.
9. Write a short essay on any one of the following subjects:- The Karroo. Table Mountain. The Nile. The Monsoons. The climate of the district we live in.

School Higher Examination, 1891

(University of Cape Town, Calendar for 1891-1892,
pp. 198-199)

1. Describe the earth's path round the sun. Define the terms Tropic of Cancer, Tropic of Capricorn, Rotation, Revolution.
2. Give an account of the causes of the variations in the pressure of the atmosphere, and explain how the atmospheric pressure can be measured by means of the mercurial barometer.
3. Mention the important qualifications of the general law that the fall of rain, being dependent upon the amount of evaporation, is greatest in tropical regions, where the largest supplies of vapour pass into the air, and decreases with the gradual sinking of the temperature towards the poles.
4. Give some examples illustrating the fact that the action of wind in some localities changes the configuration of the surface.
5. Give some account of the results of the observations made by the Challenger with regard to the temperature of sea water and the conditions for the deep-sea bottom.
6. State as fully as you can what you know about "tides".
7. Distinguish between sedimentary and crystalline rocks, and give examples from rocks occurring in South Africa.
8. Write a short essay on any one of the following subjects: - The Cape Peninsula. Algoa Bay. The Climate of the Eastern Province. The Orange River.
9. Draw a map of South America, marking Coast-line, Rivers, Mountain ranges, Capes and Bays.

4. Questions on mathematical geography figure for the first time in the five, physical-geography papers for Honours. In these papers two questions out of a total of twenty-six are on this aspect. In the four papers for School Higher, the stress on mathematical geography becomes more adequate, and amounts to one question in each paper. However, this increased emphasis is still far from satisfactory, and in general the subject seems to have been either completely neglected or very inadequately stressed in the geography instruction of secondary standard which was given in the period concerned.
5. A tendency to incorporate non-geographical subject-matter in geography courses is revealed, and indicates that there did not exist clearly-conceived ideas about the scope of geography. The tendency is exemplified by the geological demands of Question 1 in the 1874, physical-geography paper for Matriculation, and of Question 1 in the 1885 paper for Honours; and also by the historical requirements of Question II in the History and Geography paper which was set for Matriculation in 1878.
6. The only course of secondary standard in descriptive geography was the geography section of the combined geography-and-history course for the matriculation of the University of the Cape of Good Hope. Our study of the six appended papers which were set to test matriculation candidates in descriptive geography reveals a complete pre-occupation with facts and topographic details, and leads us inevitably to the conclusion that descriptive geography was taught without any reference at all to the supporting framework of physical phenomena.
7. Map-drawing seems to have been largely neglected. This is borne out by the fact that demands for sketch-maps occur neither in the papers of the Board of Public Examiners nor in the single, matriculation paper which was set in physical geography for the year 1874. Demands for map-drawing first appear in the matriculation papers in descriptive geography, but are found in only three questions out of a total of twenty-four. In the papers for Honours and for the School Higher, the attention given to mapping is even more inadequate. Sketch-maps are required in only two questions out of the twenty-six in the Honours papers, and in only three out of the thirty-eight in the papers for School Higher. On the basis of these facts, we are clearly justified in assuming that map-work occupied a very minor place in geography instruction. This is indeed a matter for serious criticism, for maps are the means whereby the geographer represents symbolically the spatial reality of the phenomena which are described in textbooks.
8. Even more striking is the inadequacy of the attention

given to illustrative diagrams. Demands for such appear first in the papers for the School Higher, but even in these diagrams are required in only two questions. This almost entire absence of demands for diagrams suggests a deplorable neglect of diagrammatic work.

9. Finally, of all the examination papers which we have considered, only those for the School Higher devote anything like adequate attention to the geography of South Africa. Even more striking is the neglect of local geography; for of all the questions concerned, only part of Question 8 in the 1891 examination for the School Higher requires a knowledge of local, geographic conditions. In the light of modern ideas about geography teaching, this dual neglect of local and South African geography must be stigmatized as a serious defect. It is nowadays accepted that the study of the local, or home region should be made the initial phase of a school geography course, that the local study should be followed by a study of the home country, and that these two studies should constitute a basic standard of comparison in the subsequent studies of foreign lands."

Teacher qualifications

The available textbooks and the training of the teachers in Dale's time did not contribute to the development of Geography at school level. The following table summarises the qualifications of teachers at that time:

Academic qualifications

Holders of the B.A. Degree	87
Holders of the University Intermediate Examination	30
Holders of the Matriculation Certificate	172
Holders of the School Higher Certificate	78
Holders of the School Elementary Certificate .	106
Those with no certificates	3 213

Professional qualifications

Holders of British Government Certificate	98
Holders of other European Government Certificates	27
Holders of Cape Second Class Certificate	84
Holders of Cape Third Class Certificate	804
Those with no professional certificates	2 673 (Knox, 1959, p.95)

From the above statistical information we calculate that of the 3 080 teachers, 27,5% were professionally qualified, 2,4% had the B.A. Degree, 0,8% the University Intermediate Examination, 4,7% Matriculation, 2,1% School Higher, 2,9% School Elementary, and 87,2% were academically uncertificated, and 72,5% professionally uncertificated. Moreover, of the 3 080 teachers, 2 380, i.e. 04,7% were without certificates of any kind.

Textbooks.

Knox surveyed textbooks and inspector's reports and concluded:

1. The approach to descriptive geography was purely factual and topographical, and the descriptive facts of man's environmental utilization were not related at all to physical phenomena.
2. Something like adequate attention was given to the principles and casual relationships involved in physical geography, but in most schools such explanatory elements of subject-matter were merely learned by heart from textbooks for verbatim reproduction in examinations. Physical geography was, in fact, very largely a matter of rote-learning and parrot-like reproduction.
3. Only at a few exceptional schools was anything in the nature of local geography taught. In the great majority of schools the subject was entirely ignored.
4. Some attention was given to the geography of the Cape and of South Africa. However, according to Inspector Samuel, no good textbook on the physical geography of South Africa was available; we may conclude that the physical geography of South Africa was badly taught, for, as indicated earlier, the vast majority of teachers were so poorly equipped for their work that the quality of their teaching was closely determined by the quality of the textbooks used.
5. The schools were reasonably well supplied with wall-maps,

but very little use was made of globes, pictorial and outline maps, maps of the local district, and illustrative aids such as pictures, diagrams, and sketch-maps.

6. In some areas, wall-maps in schools were educatively used, but in other areas they were used merely as a means of teaching pupils how to pick out places by their names.
7. Conceptions of the scope of school geography seem to have been ill-defined. The truth of this is indicated by the geological and historical material in A. Wilmot's "Geography of South Africa for the use of higher classes in schools"; and by the descriptions of religions and governments in the systematic part of Anderson's "Geography for junior classes."

THE PERIOD OF THOMAS MUIR

Thomas Muir succeeded Dale as Superintendent General in 1892. He did much to improve secondary education. No secondary curriculum existed for the guidance of teachers. In practice the teachers prepared their own courses of study in confirmity with the requirements of the School Higher and Matriculation examinations, eg.:

Standard III

To know the mode of representing on a map the different surface features; to be familiar with a map of the Division in which the school is situated, and with the position of the Division from memory.

Standard IV

The form of the Earth; Day and Night; Latitude and Longitude. To know the map of the Cape Province, including features of coastline, chief mountain ranges, chief rivers and their basins, railways, situations and chief industries of towns having over 2 000 inhabitants. To draw said map from memory. Position of South Africa on the Globe. Names and situations of the various continents and oceans.

Standard V

The Seasons. Africa and Europe, including features of coastline, chief states or territorial divisions and

their capitals; situations and chief industries of towns having over 250 000 inhabitants; commercial relations with the Cape Province. Map-drawing from memory.

Standard VI

Climate, Winds, Rainfall. Asia and America, including features of coastline, chief mountain ranges, chief rivers and their basins, chief states and their capitals, situations and chief industries of towns having over 200 000 inhabitants; commercial relations with the Cape Province. Map-drawing from memory.

Standard VII

The chief Ocean Currents. The British Isles, British Colonies and Dependencies in greater detail. Map-drawing from memory.

In the High School the Geography course was the same as for Standards VI and VII. Until 1901 Physical Geography figured as one of the optional subjects for the School Higher examination.

Evaluating the questions set during the period 1895 - 1901 the following emerge:

29% were climatic

33% geomorphology

10% mathematical

9% oceanography

2% distribution of fauna and flora

4,5% miscellaneous aspects of Geography

Out of the 35 questions set during the period only 3 required illustrations or diagrams. None was set on maps. South African Geography, mathematical Geography and diagrams were neglected, while sketch-maps, mapwork and Local Geography were totally absent. (Knox, 1959, pp.132-133).

THE EXCLUSION OF GEOGRAPHY FROM THE CURRICULUM

After 1903 Geography was totally excluded from the curriculum. When the School Higher became the University Junior Certificate in 1910 Geography still did not appear in the curriculum. This was also the case with the requirements for Matriculation. Muir was not satisfied with the neglect of Geography at Matriculation level. In 1907

School Higher Examination, 1895

1. What is meant by the longitude and latitude of a place on the Earth's surface? How do travellers exploring new countries or seas find their approximate longitude and latitude?
2. (a) Why does the air press on the Earth's surface?
(b) Why is its pressure different at different heights above sea-level?
(c) Mention some of the principal causes of change of atmospheric pressure at the same place.
(d) Describe and explain the action of an ordinary mercurial barometer.
3. Give some account of the following periodical and occasional winds: -
 - (1) The Monsoons;
 - (2) Land and sea breezes;
 - (3) The Mistral;
 - (4) The Sirocco;
 - (5) The Harmattan.
4. What are the principal substances found in solution in sea water? Mention some seas or parts of seas where there is either more or less than the average amount of substances in solution, and explain why this is so.
5. What is the principal cause of superficial ocean currents? Mention and describe the course of those which principally affect the climate of South Africa.
6. What is meant by the 'relief' of land and of the ocean bed? Illustrate by an imaginary section of the Cape Colony, extending from the Orange river near Kimberley to the Agulhas bank, naming the different ridges, plains, and table lands intersected.
7. Describe the principal ways in which
 - (1) the air;
 - (2) the sea,
 - (3) rivers and springs,
 - (4) ice,
 - (5) volcanic action, are continually at work altering the present distribution of land and sea.
8. What is meant by the climate of a place? Mention the principal circumstances on which climate depends. At high elevations on the mountains of Southern Europe plants are found which are the same or closely allied to plants in Norway and the Arctic regions. What changes of climate in Europe are supposed to have caused this?
9. Describe the six zoological regions into which the Earth's surface has been divided, giving a general idea of their boundaries, and mentioning some forms.

School Higher Examination, 1901

1. What observations afford the most convincing proof that the earth is very nearly spherical? Show how no actually performed "circumnavigation of the world" is a proof of the true shape of the earth.
2. Explain how the succession of the seasons and the variations in the length of day and night are produced. (Diagram should be given.)
3. How are changes in the temperature of the atmosphere brought about? What are the physical conditions which influence the mean annual temperature of any particular locality?
4. Give an account of the chief phenomena which may be observed at a volcanic eruption. Name one active volcano in each of the following continents: Europe, Asia, Africa, America.
5. What views are held as to the condition of the earth's interior.
6. Explain, with examples, what is meant by
(1) oceanic, and
(2) continental islands.
7. Compare the appearance presented by a raised beach with that of a river terrace.
8. How do we know that the climate of any part of the world has varied throughout the earth's long history?
(Calendar for 1902-1903, p. 804).

a committee was appointed to inquire into the curriculum of schools in the Colony and examinations conducted by the University of the Cape of Good Hope. The exclusion of geography continued until 1918. During 1918 the Secondary School Certificate of the University was replaced by the University Junior Certificate of the University of South Africa and the J.K.B. Here geography was prescribed as an optional subject for the new Junior certificate. (Knox, 1959).

The standard of the geography taught during this period was rather low. The causes for this included the lack of equipment and the division of the teachers' time between two or more classes. The main cause was the lack of knowledge of most of the teachers - mainly due to the fact that geography was not offered by the post - matriculation institutions in South Africa. The University of South Africa only introduced geography in 1918. The nature of instruction was far from satisfactory. The main cause for this was the low standard of teachers' qualifications.

THE BRITISH INFLUENCE ON GEOGRAPHY TEACHING IN SOUTH AFRICA.

When one looks at the development of geography in schools in the U.K. since 1900 there appears to be a remarkable resemblance to geography teaching in South Africa. If we assume that geography in South Africa was influenced strongly by development in Britain it is understandable that there could hardly be a trend in South Africa which did not exist in the United Kingdom in earlier years.

The first teacher's journal only appeared in 1901 - The Geographical Teacher, organ of the Geographical Association. Flipping through the early issues of the Journal, the influence of British geographical thought and teaching on South Africa can clearly be seen. In the first issue of The Geographical Teacher (1901) the following was said:

"Britain has no need to fear comparison with other nations

so far as exploration and commercial enterprises are concerned. In these respects no nation deserves more honour. But it must be admitted that our country falls short in one respect. In answer to the question : "What have the British done to extend the theoretical study of geography?" the answer must be "Little or nothing." In British schools geography has ever been a dull and uninteresting subject. It has been a dreary recitation of names and statistics, of no interest to the learner, and of little use except, perhaps, in the sorting department of the Post Office." (Koopler, 1901, p 4).

The situation in South Africa was more or less the same although some physical geography was done after 1882.

The inadequacy of the training of geography teachers in South Africa has been mentioned (p.21.) In Britain the same problem existed:

"Teachers of geography are numerous. Hardly a school exists in which this subject is not taught. Comparatively few teachers have had a special training in geography. Most of them have been compelled to teach it because of its inclusion in the school curriculum. They have had to teach themselves before they taught their pupils. The teacher not attracted by geography naturally pays as little attention to it as he can help." (Andrews & Herbertson, 1901).

As in South Africa, geography found a minor place in the British curriculum. In The Geographical Teacher of 1902 Brereton commented:

"Geography has been till recently the Cinderella of secondary education. Its right to be considered a distinct subject has often been denied, and it is only by taking history as its chaperone that it has been able to appear in the curriculum at all. However, powerful influences outside the school have been working in its favour - the imperialist movement, the need for wider commercial knowledge, the growing recognition of the intimate connection between geography and many kindred sciences, such as astronomy,

physics, geology, meteorology, ethnology, history, and the like. Unfortunately, a certain amount of the disdain with which the teaching of geography has been treated in the past was due to the purely descriptive nature of the subject, as then understood which afforded but little scope or exercise for the thinking faculties." (Brereton, 1902).

A problem which faced most Geography teachers was what to teach. There were no fixed syllabuses and the teacher thus had to design his own syllabus. The following is an example of what was taught to pupils in secondary schools in Britain (1901):

"(3) From 14 years onwards the more logical study of geography should be followed, whether in the general or regional aspects. The configuration, climate and hydrography; the great plant and animal associations (not species distributions); the economic activities of man, and in the most advanced classes his racial and political geography, the latter demanding much historical knowledge, form natural divisions. A somewhat fuller study of one or two selected regions of considerable area should be demanded - e.g. a continent or the self-governing British States, in addition to the general geography of the continents." (Committee, 1901).

In the same article it is also stated that a syllabus might consist of three sections:

- "(1) The principles of geography.
- (2) The outlines of the geography of the continents, demanding no detailed knowledge of their topography but only a general knowledge of their geography.
- (3) The more detailed geography of one or more selected regions, including that of the home district.

It is not desirable to divide an examination paper into three similar sections, for questions asking for illustrations of geographical principles, either in continental or regional distributions, as well as others involving other combinations of different parts of the syllabus are of great importance." (Committee, 1901).

SYLLABUS.

P. paratory (AGE 10 TO 12 APPROXIMATELY).

A general (but elementary) knowledge of the globe considered as a whole, with special reference to the physical conditions.

A more detailed (but elementary) study of the countries forming the British Isles.

First Year.

A general (but more advanced) knowledge of the globe considered as a whole, with special reference to the physical features of the major regions, *i.e.*, distribution of mountains, regions of glacial action, areas of volcanic action; river-basins and their connection with the surface features; desert regions; contrast and comparison of typical climatic regions, belts of temperature and rainfall; the oceans, their relative extent, sub-divisions and prevailing winds, trade routes, coasts washed (with harbours and ports).

Location of the chief countries of the world, their largest towns, the broad features of their trade and industry.

Region for special and more detailed study:—The countries forming the Mediterranean Basin—their physical features, climate, their industries and commerce, their government and peoples, their chief towns.

Second Year.

General regional geography of the island continent of the Americas (including the West Indies) and the larger islands of Australasia.

Elements of the historical geography of the regions in question:—the voyages of Columbus, steps in the growth of European knowledge of the New World (Magellan, Drake, the Cabots, Gilbert, Davis, Hudson, Baffin, Cortes, Pizarro), the colonisation of America and growth of European settlement, Arctic and Antarctic exploration, colonisation of Australia and New Zealand, changes in the American map (especially in North America).

Region for special and more detailed study:—The United States of America.

Third Year.

General regional geography of Europe and the adjacent lands in Africa and Asia.

Elements of historical geography, dealing mainly with the rise of the various nations of Europe and the principal changes in the map since the close of the Middle Ages.

Regions for special and more detailed study:—France and Germany; the Nearer East and the political problems involved.

Fourth Year.

The continents of the Old World, with special stress upon Asia and Africa (a revision and re-consideration of Europe broadly in comparison with the other two, and as connected with their trade).

Outlines of historical geography, mainly treating the relations of European powers with Africa and Asia; an outline of the history of geographical discovery concerning the regions under consideration.

Regions for special and more detailed study:—The Far East, and political and commercial problems involved, India and her environs; British South Africa.

Note.

- (a) The so-called "physiographic aspects" are considered in connection with, and illustrated from, the regions being studied, *e.g.*, glaciers are treated when Switzerland is taken, earthquakes in the lessons upon Central and South America.
- (b) Pupils are trained in systematic map-reading, in the principles underlying map construction; are taught to trace cause and effect whenever possible, and to regard the map as a summary of geographical evidence. Map drawing from memory is looked upon as a test of, rather than an introduction to, geographical knowledge.
- (c) In the third and fourth years, careful and fairly detailed attention is given to the industries and trade, to the railway, canal, and ocean routes of the regions studied; carefully selected diagrams are used to interpret statistics.

This probably influenced the syllabus makers and examiners of the first syllabuses and examinations in South Africa. Although the first South African syllabus consisted of three sections, the first paper had no sections. (See table 10 p. 37)

The origin of the subjects Historical Geography and Commercial Geography in the South African Curriculum, probably lies in the appearance of these subjects in the British University Curriculum. In 1904 - 1905 there were courses in "Historical Geography and Commercial Geography" at various universities. (The Geographical Teacher , Vol. 2, no. 10, pp. 270 - 273).

In 1908 a more advanced and detailed syllabus was published in The Geographical Teacher Vol. IV, p. 294. (See table 5) This syllabus was divided into years. The general approach of this syllabus was regional. More or less all the continents of the world were prescribed over the course of four years. Another feature of this syllabus was that it followed a concentric approach - something that surely influenced the South African syllabuses. The syllabus started with the pupils' home country and moved from there to continents and the world. The same work, only more detailed is done at a later stage in the school course. In 1911-1912 the concentric approach was still in use in London schools (Archer, 1911) although the same area was never treated in the same order and from the same point of view. This was still the case in 1960 (Briault, 1960).

Problems of rote learning were always present. From examples chosen at random from the work of secondary pupils, Birchenough (1910) came to the conclusion that something was seriously wrong with the teaching of Geography. Examples of ridiculous detail learned in schools were: "Petersburgh the Capital of Russia, is 1 140 miles north-east of London" and "Peking the capital of China, stands 8 062 miles south-easterly, of London". A more educational role was seen for Geography by Birchenough(1910):

"Geography as the science of topographical distribution sets out to describe the surface of the Earth and to explain its present configuration, to study the physical processes eternally at work, and the interaction between man and the World. It must therefore glean from many sciences; but the field of geography is not that of these sciences, and no matter how interesting it may be to study the history and the division of strata, and to live again through the varied stages of the world's history, reconstructing its scenery, its animal and vegetable life long extinct, the teacher must beware of being side-tracked into a study that is rather historical geology than geography."

In some syllabuses the continent by continent approach was followed with the problem of which continent to deal with first (Karten, 1911).

Conclusion:

In this chapter it has been shown that geography was not an official subject until the establishment of a Department of Education in 1839. In the time of Rose-Innes (1839 - 1858) there was a modern descriptive approach to geography as well as the well known "Capes and Bays" approach. Physical geography was also introduced. In Dale's time (1859 - 1891) "standards" were used for the first time and syllabuses made their appearance. A worrying feature was the poor qualifications of teachers owing to the lack of post-school geography courses. Even in Muir's time, from 1892, the approach was still Eurocentric. Regional geography was taught from a "British Isles" point of view. Outstanding features were the lack of local and South African geography and the exclusion of geography from the curriculum between 1903 and 1918. The first university course in geography was also introduced at the University of South Africa in 1918. This together with the introduction of the Cape Education Department's own examinations infused new life into geography teaching in South Africa as will be seen in the next chapter. The influence of British geography on South Africa was very marked.

CHAPTER 3

THE PERIOD 1918 - 1972 - THE BRITISH INFLUENCE TILL 1945

When the University of South Africa took over the examining of the Junior Certificate in 1918, it was felt by the Cape Education Department that they should introduce their own examinations. The Departmental examinations for the Junior and Senior Certificate were held in December 1921 and December 1923. These examinations were not compulsory for the Department felt that the examination should have time to gain the confidence of the public. Only in 1934 did the Senior Certificate examination become compulsory for all Departmental schools.

In the new courses Geography figured as one of the optional subjects for both the Junior and Senior Certificate examinations. These courses were introduced in 1918 and 1920 respectively. In the Junior course it was a composite course entitled "Geography and History." The syllabuses for the new courses were first published in the Education Gazette of 16 June 1921. (See table 9)

The courses drawn up in 1918 contained Geography as an optional subject. These were the first Cape Education Department courses which prescribed Geography as a balanced subject, containing human and physical constituents. The subjects for the Junior Certificate in 1921 were classified into minor and major categories and Geography appeared as one of the optional minor courses.

The Geography syllabus for Junior Certificate was revised in 1930 and 1945 and that for the Senior Certificate in 1934 and 1944. The 1920 Senior Certificate comprised optional courses in Geography, Historical Geography, and Commercial Geography and History. Commercial Geography and History was not examined till 1924 and no examinations were set on Historical Geography. From 1936 onwards Junior Certificate candidates could take Geography

as either a minor or major subject. As a subject for the Junior Certificate, it gained considerably in popularity since 1922. The same happened in the Senior Certificate course.

Towards 1940 there was a marked progress in the teaching of Geography. This was not only the case at University level but also at school level. (Plummer, 1939). From the following table it is clear that Geography became progressively popular as a school subject.

TABLE 6 - Number of Candidates Successful in Geography.
Universities Matriculation Examination.

PROVINCE	1931	1932	1933	1934	1935	1936	1937	1938
Natal	83	119	179	234	256	302	298	389
Transvaal ...	55	62	82	91	104	141	153	166
Cape	61	58	57	52	64	86	62	104
O.F.S.	32	43	42	73	62	40	55	109
S. Rhod.	25	52	42	31	42	53	47	47
S.W.A.	-	-	-	-	-	1	-	-

(Plummer, 1939,p.6).

During the same period the number of schools which offered Geography doubled, although there was no change in the Cape Province.

TABLE 7 - Number of Schools in which Geography has been taught as a Matriculation Subject.

PROVINCE	1931	1932	1933	1934	1935	1936	1937	1938
Natal	12	15	24	26	28	30	31	36
Transvaal ...	25	21	29	30	36	46	46	51
Cape	19	13	18	13	12	14	15	19
O.F.S.	3	6	4	6	7	9	7	12
S. Rhod.	5	6	5	5	5	8	8	7
Totals	64	61	80	80	88	107	107	125

(Plummer, 1939,p.6).

If the above figures are compared with the following 1924 figures the advancement of geography as a subject in schools, especially in the Transvaal, is more remarkable. In 1923 there were only two schools offering geography to form V (Standard 10) and in 1938 there were 51.

Table 8.

Schools	Standards	(Forms)
2	6 - 10	1 - 1V
3	6 - 9	1 - 1V
4	6 - 8	1 - 111
1	7	11
10	6	1
15	No Geography taught.	

(Information adapted from Prescott, 1924).

The reason for this probably lies in the fact that teachers at the time became better equipped because of an increase in the number of geography courses provided by universities.

JUNIOR CERTIFICATE SYLLABUSES.

Taking a closer look at the Junior certificate syllabuses between 1921 and 1945, the following facts emerge: -

All three syllabuses were divided into three parts:- physical geography, practical geography and regional and economic geography. In the 1921 syllabus the regional part was called "Geography of Africa, especially south of the Zambesi, and of Europe."

Physical Geography.

For physical geography the work prescribed in the 1921 and 1930 syllabuses was nearly identical. The 1930 syllabus contained all the work prescribed by the 1921 syllabus plus the following: Causal relationship between temperature, pressure, winds, rainfall; "zones of climate" in the 1921 syllabus was replaced by "distribution of the main climate types" in the 1930 syllabus. The 1945 syllabus covered almost the same ground as its predecessors. The only

changes were "seasonal variation in length of day and night in different latitudes; the distribution of temperature and rainfall from the study of world maps."

It will be noticed that in the Physical Geography part in all three the abovementioned syllabuses, Geomorphology found no place. This is a pity because no Geography course can claim to be complete if it does not have at least some or other reference to Geomorphology.

Man's economic activities and his settlement patterns are intimately related to the physical landscape. The omission of Geography from the syllabus was probably influenced by the same trend in Britain during that period (1918-1930). A comparison between the 1921 and 1930 Cape syllabuses and a British syllabus published in Wallis (1915) shows the British influence on the Cape syllabus. In 1926 Geomorphology still did not appear in the British Geography syllabus. The emphasis was on the pupils home country and after that on the world (Fairgrieve, 1926). In 1934 Simpson referred to "Observations on the earth's crust" in her book "The Study of Local Geography." In this chapter things like "flood plain", "sedimentary rock, igneous and volcanic rock" are mentioned. It could thus be expected that Geomorphology would not appear in the syllabus, following the British example, where it was only mentioned in 1934.

It will also be noticed that oceanography was omitted in the 1945 syllabus. In 1921 and 1930 it appeared as "tides and currents."

It could thus be said that the heading Physical Geography is incomplete because of the omission of Geomorphology.

Practical work

- (b) The next part of the syllabuses to be discussed is the "Practical work." In both the 1930 and 1945 syllabuses it was called "Practical Geography." The work prescribed in the 1921 and 1930 syllabuses was identical. The 1945 syllabus contained more details regarding Practical work.

Junior Certificate Syllabus 1921

GEOGRAPHY AND HISTORY.

PHYSICAL GEOGRAPHY.—Day and night; the seasons; latitude and longitude; time; zones of climate; tides and currents.

PRACTICAL WORK—Observations of sun and moon; finding of direction; problems in longitude and time; making of weather charts; map-reading, including calculation of distances and areas from scale, and the drawing of sections from a contour map.

Geography of Africa, especially south of the Zambesi, and of Europe, with reference to the other continents for purposes of comparison or in connection with the history course:—

- (a) Physical relief.
- (b) Climate and rainfall.
- (c) Natural regions.
- (d) Resources—plants, animals, minerals, products and industries.
- (e) Political divisions or control.
- (f) Communications (by land and sea), trade and commerce.

[The following topics are of special importance in the treatment of South Africa: distribution of rainfall; contrast of east and west in climate and products; railways; economic dependence on certain minerals; relatively slight development of industries (other than mining). The general trade relations of South Africa should be dealt with—not merely those with Europe or other parts of Africa.]

SOUTH AFRICA: HISTORY.—European settlement—a result of trade enterprise; the origin of the Burgher class; the role of the Netherlands East India Company; the expansion of the settlement determined by geographical and other conditions (e.g., immigration and the presence of native tribes); the Huguenots; efforts towards economic and political liberty in the eighteenth century; the British occupation—a result of the Napoleonic wars; the British Settlers; pioneering; the Great Trek; Natal; the Free State; the Transvaal; Basutoland; political changes leading to the Act of Union; economic development near the coast and on the inland plateau; farming; mines; railways; the native peoples.

CIVICS.—Duties of the citizen—in the home, in society and in the state; government—central, provincial and local; the passing of laws, and the duties of the police, justices of the peace, magistrates and judges in administering the laws.

OUTLINE OF MODERN EUROPEAN HISTORY.—The Reformation; Holland's struggle for independence; the union of the Dutch Provinces; the Elizabethan age in England; the expansion of Europe—trade, colonies, the struggle for sea-power (Spain, Holland, France, England); the constitutional struggle in England in the 17th century; the growth of the British Empire till 1789; American independence; the Constitution of the United States; the industrial revolution in England; the abolition of slavery; political and social reforms; improved means of communication—railways, steamships, telegraphy, the telephone, motor transport, aviation; the great war

(The Education Gazette, 16 June 1921).

GEOGRAPHY— *One Hour and a Half.*

Examiner
Mr. H. HUTCHINSON

Moderator:
Mr. A. RITTER

(Answer four questions from Section A and one from Section B)

Section A.

1. (a) Find the longitude of a place on the Equator 2400 miles east of the meridian of Greenwich. In what country do you think the place is situated?

(b) When children in South Africa assemble for morning school, it is already afternoon in India. Account fully for this fact.

(c) The longitude of Tunis is 10° E. and that of Aden 45° E. Calculate the difference between Tunis time and Aden time.

2. What kind of weather prevails in the following places in the month of July: Cape Town, Durban, Algiers, Bombay, Moscow, Naples, London? Give reasons for your answers.

3. To what circumstances do the following European capitals owe their position: Paris, Berlin, Vienna, Madrid, Constantinople?

4. What conditions of soil and climate are most favourable for the cultivation of the vine, the sugar-beet, flax, maize and wheat? In what parts of Europe are these products obtained?

5. Describe an imaginary journey down the Rhine or the Danube from source to mouth, referring in your description to the physical character of the country and to the agricultural and/or industrial activities of the districts through which the river flows. If possible, illustrate your description with a sketch-map.

6. What are the most important minerals obtained in South Africa? Where are they found? Why is it that gold-mining areas do not support such a dense population as most coal-mining areas?

7. Write short notes on any six of the following places, indicating the circumstances to which they owe their present importance: East London, Durban, Lourenço-Marques, Port Nolloth, Mombasa, Port Sudan, Alexandria, Lagos, Luderitz-Bucht.

On the squared paper provided, draw (a) a temperature curve, and (b) a rainfall diagram to illustrate the statistics given.

9. "The island of St. Helena consists of a much-denuded plateau, in places 2000 ft. in height, above which rise a number of old volcanic cones. In shape the island is an irregular oval, with the longer axis running S.W. and N.E.; the extreme length being 10½ miles and the extreme breadth 8 miles. In the centre of the island is Diana's Peak (2700 ft.), with High Peak (2635 ft.) 2 miles to the westward. In the extreme S.W. corner of the island is High Hill (2800 ft.), whose western slopes descend precipitously to the sea. Swift streams flow in all directions from the central peaks. These streams have cut deep gorges into the mountain slopes and into the plateau across which they flow to the sea. Throughout the entire coastline, which consists of a succession of bays and headlands, the land ends in abrupt cliffs with an average elevation of 1000 ft."

(a) Draw a contour-map of St. Helena to correspond as nearly as possible to the above description, using a scale of 2 inches to the mile. Draw contour-lines at intervals of 500 ft.

(b) Draw a section along a line running centrally through the island from S.W. to N.E.

Junior Certificate Syllabus, 1921

(Bounded Examination Papers, Vol.1, 1921)

Table 10

When comparing the latter with the earlier requirements it is noticed that "location of places on maps by latitude and longitude" was added, but that "the drawing of sections from a contour map" was omitted.

The 1945 syllabus which came into effect in 1947, also required the keeping of temperature, pressure, wind direction and rainfall charts for a month in summer and a month in winter. On the whole the work of the 1945 syllabus was no fuller than that of the earlier syllabuses.

Regional Geography

The third part of the syllabuses to be discussed is Regional Geography. It is the opinion of many geographers that regional geography is the most important part of Geography. In the light of this discussable point of view it is understandable why regional Geography formed the major part of the three syllabuses under discussion.

The 1921 syllabus involved a study of Africa, south of the Zambesi, and of Europe under six headings (see page 36)

In a footnote attention is drawn to a few topics which should be studied in greater detail.

The work of the 1930 syllabus was much fuller in scope than that of 1921. In the syllabus (1930) the heading is "Regional and Economic Geography and the work was divided into four headings. The last of these involved "The Geography of Africa, especially south of the Zambesi, and of Europe,"

Then followed the six headings of the previous syllabus plus a seventh, namely "trade and commerce" which was part of Communications in the 1921 syllabus. In 1930 "A general survey of the World", was included whereas in 1921 only a study of "Africa, especially south of the Zambesi, and of Europe," was required. From the 1930 syllabus it is clear that Natural Regions played an important part in the Geography syllabus. The first two paragraphs under Regional and Economic Geography could be incorporated into Natural regions.

Junior Certificate Syllabus

GEOGRAPHY.

A.—*Regional and Economic Geography.*

(i) A general survey of the World, based on a study of the Major Natural Regions; their climate, vegetation, products, peoples, industries, etc.

(ii) An elementary knowledge of the distribution of the natural products of the World: Foodstuffs; raw materials for industry; sources of power.

(iii) The main forms of transport; inland navigation; rivers, canals; railways; motor-transport; ocean-routes; air-routes.

(iv) The geography of Africa, especially south of the Zambesi, and of Europe, broadly considered with reference to: (a) physical relief, (b) climate, (c) natural regions, (d) resources, plants, animals, minerals, products and industries; (e) political divisions or control, (f) communications (by land and sea), (g) trade and commerce.

B.—*Physical Geography.* Day and night; the seasons; latitude and longitude; time; causal relationships between temperature, pressure, winds, rainfall; distribution of the main climatic types; tides and currents.

C.—*Practical Geography:* Observations of sun and moon; finding direction; problems in longitude and time; map-reading, including calculation of distances, and areas from scale and the drawing of sections from a contour map.

Note.—The syllabus is divided into three sections, viz., Regional and Economic, Physical and Practical Geography, for convenience of reference only. The sections should not be treated independently, but should, as far as possible, be intimately co-ordinated at every stage.

(The Education Gazette, 13 February 1930.)

**SYLLABUS IN GEOGRAPHY (MAJOR) FOR JUNIOR
CERTIFICATE EXAMINATION, 1947**

The following will be the syllabus in Geography (Major) for the Junior Certificate Examination, 1947.

A. Practical Geography:

Observations of the sun as a basis for the study of the seasons (time and position of rising and setting sun at intervals during the year; height of midday sun at different seasons by means of a shadow-stick); finding direction (by means of shadow-stick, watch and stars); location of places on maps by latitude and longitude; calculation of distances on maps from scale; reading of relief maps; keeping of temperature, pressure, wind direction and rainfall charts for a month in summer and a month in winter.

B. Physical Geography:

Seasonal variation in length of day and night in different latitudes; the seasons; latitude and longitude; time; elementary knowledge of the distribution of temperature and rainfall from a study of world maps; distribution of the main climatic and vegetation types.

C. Regional and Economic Geography:

(i) A general survey of the Major Natural Regions of the world—their climate, natural vegetation, chief products and the relationship between natural conditions and human activities in each region.

(ii) An elementary knowledge of the distribution of the following minerals and sources of power: ores of iron, copper, tin, aluminium; coal, petroleum, hydro-electric power. The chief regions of production of the following foodstuffs and raw materials, with special reference to climatic and other geographical conditions affecting production: wheat, maize, rice, meat, tea, coffee, cacao, sugar, cotton, wool, rubber, timber.

(iii) The main ocean routes of the world and chief air routes serving South Africa.

(iv) (a) A general survey of Africa, following the scheme as indicated in C (i).

(b) More detailed study of the Atlas Lands, the Nile Basin, Kenya and Uganda, Nigeria, the Belgian Congo.

(c) Southern Africa (south of the Kunene and Zambesi Rivers): relief, distribution of chief minerals (asbestos, chrome, ore; coal, copper ore, diamonds, gold, iron ore, manganese ore); climate and its influence on the distribution of the chief crops and kinds of livestock; location of the chief industries and the geographical factors that have influenced their development; distribution of population (statistics of population density are not expected); communications, towns and ports; overseas trade.

(v) Europe: A broad survey of relief, climatic regions, natural vegetation and cultivated crops; chief coalfields and their influence on the distribution of industries; chief ports—their import and export trade with reference to communications serving them.

(vi) Industrial North-Eastern United States of America: A broad survey, with special reference to industrial development, particularly the localisation of the iron and steel industries.

(vii) South and East Asia: A broad survey of climate and other geographical conditions affecting the distribution of the chief crops and the density of population (statistics are not expected) in India, the North China Plain, the Yangtse Basin, Java.

Fifty marks will be allocated to a compulsory map question including map reading and/or the insertion of physical features, towns, etc., on a blank map. The paper will be so set that candidates will not be able to select all their questions from a restricted portion of the syllabus.

Throughout the English-speaking world Herbertson's natural regions approach was accepted without much opposition. Because geography played an important role in Britain the same trend would be found in South Africa. Herbertson's approach dominated geography teaching for many years as can be seen from syllabuses (Stamp, 1957).

Regional geography accounted for the greater part of the South African syllabuses. To see whether the examination trends in Britain influenced the Cape examinations, a comparison was made of Cape and British examination papers with the following results:

	U.K.	Cape
(a) questions on the principles of geography (chiefly on relief and climate)	21%	33%
(b) questions on Economic aspects of geography (resources, industrial areas, new development)	30%	15%
(c) questions on regional geography (descriptions, comparisons, contrasts)	32%	45%
(d) Town sites, regional foci, ports, and their hinterlands	16%	7%
(e) Other questions	1%	-

(Geography, 1930, p 405)

From this it is clear that the main emphasis in the S.A. examinations was on regional geography.

The requirements of the 1945 syllabus were still more comprehensive, and comprised a study of the major natural regions, Africa in general, and Southern Africa in greater detail, Europe, the North-Eastern U.S.A. and Southern and Eastern Asia. Here again it is very clear that natural

Regions were regarded as a very important part of the syllabus. It will be noticed that in the 1945 syllabus each subsection was discussed in far greater detail than in the case of its predecessors.

It will also be noticed that there was a progressive expansion in the scope of the regional work prescribed in the three syllabuses. The work in the initial syllabus was confined to a study of Africa and Europe. The 1930 syllabus included, in addition to this, a global survey in terms of major natural regions. The 1945 syllabus comprised all this, and also prescribed a study of the industrial North Eastern U.S.A., South and East Asia, involving India, the North China Plain, the Yangste Basin and Java. Further were certain territories of Africa listed for detailed study, and attention was drawn to the fact that the continent was to be studied in accordance to instructions given for the study of the major natural regions. The latter directive is very important, for it seemed to indicate that in this syllabus the detailed regional study of Africa had to be continued, as it should be, with reference to the pupil's previously required knowledge of natural regions. In "Memorandum on the teaching of Geography (1939) it is stated that "the core of Geography is to be found in the study of the interaction between man and his environment." It is therefore important that Geography should give an understanding of the lives of people in relation to their environment and to do so it must proceed on a regional basis. It should also be the aim of Geography to prepare the pupil for citizenship. (Memorandum, 1939). This was the feeling in the United Kingdom and its influence can clearly be seen in the South African syllabus.

An important common feature of all three syllabuses was the study of South Africa, the pupil's homeland, in relatively great detail. The approach was more systematic than regional.

SENIOR CERTIFICATE SYLLABUSES.

The increasing importance of Natural regions.

A closer look at the Senior Certificate syllabuses between 1918 and 1945 shows that three syllabuses were published for different courses in geography. They were the following:

- a) The Senior Certificate Geography syllabus, (1921).
- b) The Senior Certificate syllabus in Commercial Geography and History, (1921). (See appendix A 1)
- c) The Senior Certificate syllabus in Historical Geography, (1922). No examination was set on this syllabus. (See appendix A 2).

Copies of all three of the above syllabuses are included (Table 13 and appendices A 1 and A 2) but only the first will be discussed and compared with later syllabuses.

As in the Junior Certificate the first Senior Certificate syllabus was divided into three sections namely "Practical Geography, Physical Geography and Regional Geography," whereas the course in Commercial Geography was divided into five sections namely Transport, Commodities, Africa, Economic History of Europe from the age of discovery, and The Industrial Revolution in England and elsewhere. The syllabus in Commercial Geography and history contained a geography section and a history section.

The different sections of the syllabuses between 1921 and 1945 will not be discussed. The Commercial Geography and History syllabus as well as the Syllabus of Historical Geography will be left out of this discussion, because they are not pure geography syllabuses. No examination was set on historical geography.

Senior Certificate Geography Syllabus

GEOGRAPHY.

A. *Practical Geography* :—

- (1) Meteorological instruments; mercurial and aneroid barometers; rain-gauge; thermometers.
- (2) Thermometric, barometric and rainfall charts.
- (3) The use of the clinometer, plane-table and theodolite to estimate heights and distances.
- (4) The principle of triangulation; ordnance-survey maps; methods of obtaining data for cartographical purposes; conventional signs.

B. *Physical Geography* :—

- (1) The general facts of wind and water circulation; the representation on the map, by isometric lines and in other ways, of climatic facts.
- (2) The origin of common topographical features, e.g., mountains, valleys, rivers, lakes, plains, deserts, plateaux, etc.; forces which contribute to the formation of scenery.
- (3) The materials of the earth's crust, particularly in relation to agriculture and mining, with special reference to the economic development of South Africa.
- (4) The conservation of water and the problem of irrigation.

C. *Regional Geography* :—

A detailed study of—

- (1) Africa; particularly Africa South of the Equator.
- (2) The British Empire, including the British Isles.
- (3) Europe, and/or
- (4) Asia, and/or
- (5) The Americas,

—under the following heads :—

- (a) Position and world-relationship.
- (b) Size and population.
- (c) Climatic world-relationship, and special climatic regions.
- (d) Vegetation regions.
- (e) Relief as a control of the special local conditions of climate and vegetation.
- (f) Occupations of the inhabitants and localisation of industry.
- (g) Export trade.
- (h) Communications in relation to—
 - (a) the sea.
 - (b) relief.
 - (c) areas of production and consumption.
- (i) Some aspects of the country's history as dependent upon geographical factors.

(The Education Gazette, 16 June, 1921.)

Geomorphology

Geomorphology was prescribed in all the syllabuses between 1921 and 1946. In the 1921 syllabus the work was limited to an elementary knowledge of the origin of common materials of the earth's crust; topographical features, eg. mountains, valleys, rivers, lakes, plains, deserts, plateaux, etc., forces which contribute to the formation of scenery.

The requirements of the 1934 syllabus were almost the same except that an "Elementary knowledge of the origin of the common materials of the earth's crust", was omitted. The 1944 syllabus was more comprehensive, explicit and detailed in its prescriptions. This syllabus was divided into four sections:

1. Practical Geography
2. General Geography - this section included Climatology, Plant Geography, Oceanic circulation and Geomorphology.
3. Regional Geography.
4. Commercial Geography.

The geomorphology part in the 1944 was totally different to that of 1934. It comprised a study of the different rock types, earth movements, geological structures, distribution of folded mountains and earthquakes, relief of continents and the distribution of coal and petroleum. It further included a study of land forms caused by aggradation and degradation processes.

Climatology

The 1921 syllabus prescribed theoretical as well as practical work in climatology. The practical work was prescribed under the heading "Practical Geography" and involved:

- a) The use of meteorological instruments and
- b) the construction and interpretation of thermometric, barometric and rainfall charts.

The theory consisted of:

The general facts of wind and water circulation and the re-

SENIOR CERTIFICATE GEOGRAPHY.

A draft syllabus in Geography for the Senior Certificate Examination was published in the EDUCATION GAZETTE of 13th October, 1932, for criticism. The criticisms received have been considered by the Department, and the following syllabus will come into force [at] the Senior Certificate Examination, 1935 :—

A.—*Regional and Economic Geography.*

- (i) A general survey of the World, based on a study of the Major Natural Regions; their climate, vegetation, animal life, products and human activities as conditioned by geographical environment.
- (ii) An elementary knowledge of the distribution of the natural products of the world; foodstuffs; raw materials; sources of power. Distribution of the principal manufacturing industries and the factors determining their localisation; geographical inertia.
- (iii) Geographical factors affecting the growth of ports and other towns; entrepôt trade. The main forms of transport: inland navigation, railways, motor transport, ocean routes, air routes.
- (iv) The geography of the following countries: The British Isles, France, Holland, Belgium, Germany, Italy, European Russia; the United States of America, Canada; Argentina, Brazil, Chile; India, China, Japan; the Union of South Africa, Australia, New Zealand.
* Candidates will be required to show a more detailed knowledge of the Union of South Africa than of the other countries in this list.

B.—*Physical Geography.*

- (i) The general facts of wind and water circulation, types and causes of rainfall; world distribution of rainfall and temperature.
- (ii) Topographical features, e.g., mountains, valleys, rivers, lakes, plains, basins of inland drainage, deserts, plateaux, etc., forces which contribute to their formation.

C.—*Practical Geography.*

- (i) The use of meteorological instruments (mercurial and aneroid barometers; rain-gauge; thermometers).
- (ii) The construction and interpretation of temperature, pressure, and rainfall charts; the drawing on a map of isobars, isotherms, and isohyets from given data.
- (iii) Graphical representation of given data, e.g., products, population, trade, etc.
- (iv) Representation of relief; reading of large-scale relief maps and drawing sections from such maps; drawing of contour maps from given data.

(The Education Gazette, 15 February, 1934).

presentation of climatic data in different ways. (See photo copy of syllabus).

The prescriptions in the 1921 syllabus were rather vague and without detail.

The 1934 syllabus contained everything prescribed by the 1921 syllabus. The only difference regarding practical work was purely verbal and it reflected no distinction in substance.

In the theory there was a difference. The 1934 syllabus required types and causes of rainfall; world distribution of rainfall and temperature." The contents of the two syllabuses was practically the same. In the latter a well defined statement replaced a vague and general statement. The 1934 syllabus was somewhat fuller in scope than the one of 1921.

The climatic requirements of the 1944 syllabus were much more comprehensive than its two predecessors. The theoretical work was divided into four sections :-

- Temperature
- Circulation of the atmosphere
- Precipitation
- Climatic regions of the world.

Full details of what should be done was given under each of these headings.

The practical work comprised of the use of meteorological instruments and the keeping and representation of climatic data.

In the case of climatology the work prescribed in each of the three syllabuses was progressively fuller in scope and more detailed. The 1944 syllabus is by far the most detailed of the three. The use of meteorological instruments was prescribed in all three the syllabuses. The 1944 syllabus, however, was the only one which prescribed the keeping of weather records. This is something that is absolutely

essential in climatic instruction.

Regional Geography

The regional work prescribed in the 1921 syllabus is global in scope and at the same time vague and generalized.

The 1934 requirements were also global in scope, and were considerably more detailed. The work indicated the major natural regions, a regional study of 17 specified countries and a more detailed study of South Africa.

The regional work prescribed in the 1944 syllabus was of worldwide scope. The range of countries for detailed study were much wider than those prescribed in the 1935 syllabus. This syllabus was also the only one to prescribe the mode of organizing and presenting the subject-matter.

In the 1944 syllabus the prescriptions and related directives were as follows:(The Education Gazette, 30 November 1944).

SECTION 3: REGIONAL GEOGRAPHY.

This will comprise a study, in more detail than for the Junior Certificate, of the major natural and economic regions of the world as a background to the political units associated with these regions. It is left to the teacher to choose either natural regions or political units as the basis of treatment, but, whichever basis is adopted, the relation between the two points of view should be stressed. No country should be treated without reference to the natural regions that form part of its territory. No study of natural regions is complete without due regard to the political frontiers that cut across them and for the way in which parts of the different natural regions combine to form the territories of individual states.

Whichever treatment is followed, the world will be covered in outline, but emphasis should be laid on the study of the following countries: the British Isles, France, Holland, Belgium, Germany, Sweden, Italy, U.S.S.R., U.S.A., Canada, Argentina, Brazil, Chile, India, China, Japan, the East Indies, Malaya, Australia, New Zealand, Egypt, Southern Africa. In each of these countries attention will be given to position, climate, relief, natural vegetation, products, principal towns, industries, transport. In each country those natural regions that are economically the most important will receive special attention. Candidates will be expected to show a more detailed knowledge of Southern Africa, as outlined below:

SOUTHERN AFRICA (South of the Kunene and Zambesi Rivers):

Structure in relation to (a) relief; (b) occurrence and distribution of the leading mineral products. Climate and its effect upon the distribution of (a) natural vegetation; (b) water resources; (c) types of farming, chief crops and kinds of stock.

Geographical conditions affecting the development of (a) the mining industry, (b) the railway system, (c) manufacturing industries. Distribution of European, Native and other non-European population; the chief towns and ports, factors favouring and impeding their development; overseas trade.

An outstanding feature of the 1944 syllabus was that certain regions had to be discussed in greater detail. These regions were italicised in the syllabus eg.

NATURAL AND ECONOMIC REGIONS.

As different writers adopt different regional delimitations, the scheme given below or any similar logical well-founded scheme of major regional divisions may be followed. These are to be treated in terms of relief and climatic conditions and their relation to farming, forest industries, mining, fishing, and to modes of life and density and distribution of population, including position and importance of chief towns. Special attention is to be given to the regions italicised.

Equatorial Forest Lands :

Amazon and East Brazilian rain-forests. Central and West Africa. *East Indies and Malaya.*

Monsoon Lands of Asia :

Relief, climate, and their effect on the distribution of the chief crops in *India, China, and Japan.* Irrigation in India. Rice production and rice export trade of Burma, Thailand, and Indo-China. Silk production of China and Japan. Factory industries exemplified by textile manufactures of Bombay, Calcutta, Shanghai and Osaka. Overseas trade of India, China and Japan.

Tropical Grasslands and Tropical Highlands :

Orinoco Llanos and Interior Brazil. The Sudan, Angola, Northern and Southern *Rhodesia.* Tropical grasslands of Northern Australia. The East African Highlands. *The Sao Paulo Plateau of Brazil.*

It was left to the teacher to decide whether to choose natural regions as the basis of his treatment or political units, but which ever he chose it had to correlate the two points of view. The syllabus also stressed that Southern Africa (South of the Kunene and Zambesi Rivers) had to be studied in greater detail.

- (b) In considering these three syllabi, several points should be noticed.
1. The prescriptions in each of the three were global in scope.
 2. South Africa was specified for special study in the two later syllabuses only.
 3. The initial syllabus made no reference to human environment.

tal relationships, but the two later ones did. Only the 1944 syllabus referred to human-environmental relationships in an adequate way.

4. The scope of work specified for detailed study became progressively wider in each successive syllabus.

1. The 1921 syllabus only prescribed a general study of the world and isolated no single aspect of the work for detailed treatment.
2. The 1935 syllabus prescribed a world wide study based on the major natural regions, and a study of 18 countries, with special reference to the Union of South Africa.
3. The 1944 syllabus stipulated:
 - a) that the world had to be studied in outline and 21 countries in relatively greater detail;
 - b) that Southern Africa south of the Zambesi and Kunene rivers had to be studied in particularly great detail;
 - c) that the major natural regions of the world had to be studied with special reference to 27 regions and Industrial Europe.

In the mid-thirties the approach towards Geography became more scientific. Geography was now seen as a linking study between the scientific and descriptive approaches. (Harris, 1935). It is also noted that the major part of the geography syllabus consisted of Regional Geography. (Geography, Vol. XX, 1935, p. 47). This is probably the reason why there was an increasing movement towards regional geography in South Africa in the late 1940's and the early 1950's. The regional emphasis was supported by a committee report of the Geographical Association in 1937. (Geography, Vol. XXII, p.253). The importance of especially natural regions in the South African syllabus gradually increased from the early 1950's towards the 1960's - it even became a separate section in 1964.

SENIOR CERTIFICATE.
GEOGRAPHY.

1964.]

DEPARTMENT OF PUBLIC EDUCATION.
CAPE OF GOOD HOPE.

EXAMINER: MR. A. W. RETIEF, B.A., B.Ed.

MODERATOR: PROF. G. H. SCHEEPERS.

Write on the front cover of your answer-book, after the words "Subject of Examination"—

SEN. CERT.: GEOGRAPHY.

Above each answer write the number of the question.

(Answer SIX questions: TWO from Section A and FOUR from Section B.)

SECTION A.

1. (a) Statistics of the climate for three cities, A, B and C are given. Name the type of climate and describe the climatic conditions of each of the regions in which TWO of these cities are situated.

A.	Jan.	Feb.	March.	April.	May.	June.
Temp. °F.....	32	34	44	56	66	75
Rainfall, inches...	2.3	2.6	3.5	3.8	4.5	4.6

	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Temp. °F.....	79	77	70	58	45	36
Rainfall, inches...	3.6	3.5	3.2	2.8	2.9	2.5

B.	Jan.	Feb.	March.	April.	May.	June.
Temp. °F.....	37	38	44	47	55	57
Rainfall, inches...	1.6	1.5	1.4	1.5	2.1	2.3

	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Temp. °F.	64	62	57	50	44	38
Rainfall, inches...	2.8	2.6	2.4	2.7	2.4	1.9

C.	Jan.	Feb.	March.	April.	May.	June.
Temp. °F.....	77	79	84	87	84	81
Rainfall, inches...	0.2	0.2	0.3	1.4	12.1	18.4

	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Temp. °F.....	80	80	81	82	80	77
Rainfall, inches...	21.5	19.7	15.4	7.3	2.8	0.3

20.

[Three hours.]

- (b) Describe the natural vegetation typical of the two types of climate you have selected and show how the vegetation is adapted to the climate in each case. [20]
2. (a) Give full particulars, as well as an explanation, of the climatic conditions found in low-lying regions close to the equator. [20]
- (b) In what respects and why are the climates of the Amazon and the Congo-basins different? [10]
- (c) Draw graphs to illustrate the temperature and the rainfall of city A, as supplied in question 1. (Use the squared paper provided.) [20]
3. (a) What is a canyon and why are canyons usually found in dry areas? Refer to a suitable example and draw a contour map to illustrate a canyon. [20]
- (b) Explain the characteristic features of an "old" river and refer to different examples of "old" rivers. Indicate the advantages and the disadvantages of "old" river valleys for human settlement. [30]
4. With the aid of a sketch-map, describe briefly and account for the movements, both in January and July, of the winds and ocean currents, found along the West coast of Africa. [50]

SECTION B.

5. On the map of the world provided, indicate the following:—
- (a) Bay of Bengal; Adriatic Sea; Bay of Biscay; Bass Strait; Cook Strait. [10]
- (b) Boulder Dam; Bahrein Island; Melbourne; Vancouver; Singapore; Colombo; Mombasa; Seattle. [10]
- (c) Two important seaports in each of the following:—
France; Sweden; Argentina; South Island of New Zealand; U.S.A. (on the Gulf of Mexico). [10]
- (d) French Indo-China; Kashmir; The Mediterranean region in South America; the tropical grasslands in Africa; the coniferous forest region of North America. [15]

6. Give a tabulated geographical description of ONE of the following regions:—
Chile; Southern Rhodesia; The Yangtze-Kiang Valley in China.
Illustrate your answer by means of a sketch-map. [50]
7. (a) "The iron and steel industry of the Union of South Africa has a great future." Discuss this statement and give reasons why you think it is correct. [26]
- (b) A mineral is found in large quantities near each of the following towns. In each case name the mineral as well as two factors unfavourable for its production:—
Nababeep; Messina; Postmasburg; Wankie. [24]
8. (a) Select THREE of the following cities. Name the industries associated with each, as well as the factors leading to the establishment of the industries there:—
Glasgow; Leeds; Osaka; Milan. [36]
- (b) Give reasons for the density of the population of Belgium. [14]
9. (a) "Coal, iron-ore and mineral-oil are found on an extensive scale in U.S.A." Discuss this statement and give the different regions where these minerals are mined in the U.S.A. [30]
- (b) Discuss the situation of TWO of the following cities and show the relation between the importance of each of the two cities and the minerals found in the vicinity of each:—
Duluth; Cleveland; Galveston. [20]
10. South Island of New Zealand is the world's most important region for the production of mutton, and New South Wales (Australia) the leading region for the production of wool. Discuss the reasons for the large scale production of these products in the above-named regions.
(Treat the two regions separately.) [50]
11. (a) Draw a clear sketch-map of the Rhine valley, and show on it the river's most important tributaries. [20]
- (b) Indicate the situation and discuss the reasons for the importance of —
(i) Duisburg;
(ii) Rotterdam. [20]
- (c) Discuss the navigability of the Rhine. [10]
- [P.T.O.]
12. Name the favourable geographical factors responsible for the production of FOUR of the following:—
(a) Cotton on the Deccan of India.
(b) Wine in the Western Province.
(c) Wood-pulp in Canada.
(d) Maize on the Highveld of South Africa.
(e) Cotton textiles in Lancashire. [50]

the needs of the majority of children who do not go on to higher studies.

3. School-leaving examinations dominate choice of subjects and methods of study.
4. Practical and aesthetic subjects are therefore not given sufficient time or attention.
5. In most subjects the stress is on what was rather than what is.
6. Hence what he does in school neither satisfies the developing needs of the child as a child, nor prepares him adequately for the world he will live in as an adult." (Williams, 1976).

These were more or less the same arguments used by South African's for introducing a Social Studies course. (Pells, 1957).

The Junior Secondary course for Geography (Major) of 1945 was in use till 1952. In the Education Gazette of the 18 th September 1952 the syllabus for Social Science was published. It consisted of two courses namely a composite course and an Integrated course. The purpose of each course is set out in the introduction as can be seen from Appendix A 4.

Quotations from the introduction to this course will highlight the purpose:-

"Owing to the growing complexity of modern life resulting from industrialisation and urbanisation, the social education of the youth of today can no longer be left to chance as in the past; the home and other normal influences are now insufficient as socially educative agencies and need to be supplemented by social education in the school.

Today the child needs a clearer idea of his social and economic milieu, in order that he may become more fully aware of his relationships with others and understand more clearly the nature of his social responsibilities and duties." (The Education Gazette, 18 September, 1952. p. 646).

For the first time that it can be seen that the compilers of the syllabus also had in mind the preparation of the pupil to be a worthy citizen. The purpose of the composite

course is set out in the introduction:

"The composite course in history and geography is designed to meet the needs of schools which desire

- (1) to adopt a more humanistic and social attitude to these subjects, and
- (2) to retain the means of training the adolescent in the techniques and imparting to him the conception associated with each subject.

Geography will be regarded as the study of the earth in its relation to mankind. The emphasis in the teaching should be on the social and humanistic, rather than on the logical and scientific, though these latter aspects cannot be disregarded and since geography is concerned with principles, their discovery and application." (The Education Gazette, 18 September, 1952, pp. 1647 - 1649).

The trend to change the name of the new course to Social Science or Social Studies was probably influenced by a similar trend or vogue as Graves (1977) call it, in Britain.

Much was said for and against the name 'Social Studies'. The general feeling was that it should be called 'History and Geography'. Why was it then introduced in the Cape as Social Studies? Apart from the fact that it was influenced by Britain and the U.S.A. the syllabus committee felt that with the choice of subjects it was possible for a pupil to leave school at the end of standard eight without having Geography in standards six and seven. This amounted to a fairly large number of students as 66% left school at the end of standard eight. Of the \pm 11 000 pupils writing the Junior Certificate examination in the early fifties \pm 7 000 took History and \pm 4 000 Geography Major and about 100 - 300 took Geography minor. (Smit, 1962).

According to Smit (1962) the authorities believed that with the new courses a better socially equipped citizen would develop.

"In terms of the demands of society, the ultimate aim of social science is to establish healthy human relationships, in terms of the needs of the individual, the ultimate aim of social science is the fullest development of each pupil as a social being. Teaching

therefore should not be limited to the amassing of factual information; it should cover all the aspects of the pupil's development which may be brought within the compass of social science."
(The Education Gazette, 18 September, 1952. p.1664).

It was, according to Smit (1962), the duty of the Cape syllabus committee to invent a "socialized subject"⁺ for the adolescent who had to stay in school till the age of 16.

The integrated course in Social Studies was based on similar syllabuses of England and America. The composite course also had the same socialized tendency although it was for the more gifted child who wished to continue his study after standard eight. An outstanding feature of the social science syllabus is the fact that the reasons for the introduction of such a subject were set out in great detail in the introduction. Detailed information was also given to teachers regarding the two courses.

This syllabus was in use till 1963. In the Education Gazette of 23 January 1964 a revised syllabus for the Geography part of the composite course was published. It came into effect in 1964. Basically these two syllabuses were the same. There were however a few alterations to the 1963 syllabus eg.

- In the first year "Physical Geography" was added and section (ii) of Major Natural Regions of the world was expanded. In the second year the Physical Geography part was omitted as it was added to the first year and Union changed to Republic of South Africa. In the third year "Europe" was divided into three sections and the following was added "to be done in broad outline" only: Belgium, Italy, Iberian Peninsula, Greece, Switzerland, Norway, Sweden, Denmark. In the 1964 syllabus a new heading "A study of

⁺ Socialized subject is used for the Afrikaans term "Gesosialiseerde vak".

the world map" was brought in. When looking at the 1973 syllabus it is clear that it was rooted in the syllabuses of the 1960's. There was a movement to a more scientific approach. This becomes more clear in comparison with the 1967 syllabus.

In 1967 a new Junior Secondary course for History-Geography was introduced (see Appendix A6) which replaced Social Studies. This new syllabus differed drastically from its predecessors. Standard VI, VII and VIII replaced 1st, 2nd and 3rd year. In std. VII Mapwork consisted for the first time of the reading and interpretation of Topographic maps. For the first time a section on Settlement Geography was also introduced.

The teacher had the choice to do either urban settlement or rural settlement.

In Std. VIII a more, detailed study of the 1 : 50 000 topographical sheet was required. A section on Population Geography was also introduced. It is also the first syllabus where an indication is given of the number of marks.

This syllabus was used till the new differentiated courses was introduced in 1973.

The Senior Secondary course since 1956

In the Education Gazette of 3 November 1955 the changed syllabuses for the Senior Secondary Course were published. (See appendix A7). This syllabus came into force in 1956 and the first examination on it was held in 1957. For the first time since details regarding allocation of time, teaching aids, excursions and methods of approach to territorial studies were given to the teacher in an introduction to the syllabus.

The 1945 and 1955 Senior Certificate syllabuses

In the 1955 syllabus the four sections into which the syllabus was divided was reduced to two sections. The

content remained more or less as it was. In the 1945 syllabus the sections were :

1. Practical Geography - comprising the study of meteorological instruments, graphs, representations of relief, etc.
2. General Geography - comprising climatology, oceanography and geomorphology.
3. Regional Geography -
4. Commercial Geography -

The 1955 syllabus consisted of two sections:-

A. General Geography

This section consisted of: The earth as a planet; climate; main natural regions of the world; oceans and the earth's crust.

The section under Practical Geography in the 1945 syllabus was not incorporated under the different sections to which it was related eg. meteorological instruments under climate etc.

B. Regional and Economic Geography

This section comprised the study of the different continents. The continents to be done were Africa (South of the Zambesi and Kunene Rivers), Europe (only selected countries prescribed by the syllabus), Asia (only selected countries), Australasia, North America and South America (only selected countries.)

In the 1945 syllabus the world had to be studied on a natural region basis whereas the 1955 syllabus the accent was on the different continents. Each continent had to be studied under headings such as relief, climate, vegetation, products, population and sources of power. In the 1945 syllabus certain areas had to be studied in greater detail than others. These italicised regions were more or less the same areas which had to be studied in the 1955 syllabus in the different continents.

The 1955 syllabus also prescribed the form of the examination but there was no reference to an examination in the 1945 syllabus.

The 1955 syllabus for the Senior Certificate was changed in 1964 and 1966. The 1964 syllabus was published in 1964 and it was taken into use in Std. IX in 1965 and the first Senior Certificate Examination on it was held in 1966.

This 1964 syllabus consisted of three sections namely:

- A Physical and Practical Geography
- B Natural Regions
- C Regional Geography

The section on Regional Geography consisted of five sub-sections, namely C1-Africa and C2-5 (Europe, North America, Asia, South America and Australasia).

Where in the 1955 syllabus natural regions was a sub-section of General Geography it appeared in the 1964 syllabus as a section of its own. The reasons why Natural Regions became a section on its own were :

- (a) It was seen as a natural bridge joining Section A and B - the transition between Physical Geography and Regional Geography.
- (b) The Regional section in the new syllabus was reduced by two continents. It was thought necessary to introduce the pupil to the world as a whole, and this could only be done by making natural regions compulsory (Nel, 1966).

On the whole the syllabus was far more detailed than its predecessor eg.:

1955

5. *The earth's crust*

(a) *Classification of rocks*

Igneous, sedimentary and metamorphic.

(b) *Crustal movements*

Folds, faults, earthquakes, volcanic action.

(c) *Surface changes*

Weathering; denudation, transportation and deposition by running water, glaciers and wind.

(d) *Practical work*

Representation of relief; reading of large-scale relief maps and drawing of sections from such maps; drawing of contour maps to illustrate simple land forms, e.g. volcanic cone, rift valley, koppie, poort escarpment, river and glacial valleys, etc.

(Education Gazette, 3 November 1955)

- 1964: 3. THE EARTH'S CRUST
- (a) *Rocks which compose the Lithosphere:*
Igneous, sedimentary and metamorphic.
 - (b) *Lithospheric forces:*
Horizontal and vertical. (With attention to the consequent land forms as mentioned in (d).
Mountain building (folding, shifting), vulcanism.
 - (c) *Surface forces:*
(With attention to the consequent land forms as mentioned in (d)).
Erosion; erosion and deposition by running water, moving ice, wind and the oceans.
 - (d) *Land forms:*
 - Plains:*
River graded plains, including peneplains, and alluvial plains (flood plains, natural leveés, ox-bow lakes).
Ice-scoured plains (ice-scoured lakes, *roche moutonnées*); ice debris plains (Terminal moraines, drumlins, eskers);
Sandy deserts (barchans, seifs).
 - Hills:*
Mature river-dissected hill topography; mesas and buttes, *cuestas*.
 - Plateaus:*
Raised plateaus and canyons; lava plateaus; intermontane plateaus.
 - Mountain lands:*
Fold mountains; block mountains; volcanic mountains;
Alpine mountain lands.
 - Coastal types:*
Submerged coasts (*Rias* and fjords); Emerged coasts.
- (Education Gazette, 17 September 1964)

As can be seen from the syllabuses it was not only the case in geomorphology which served as an example. (See Appendices A7 & A8)

There was also a drastic change regarding the examination requirements. In the 1955 syllabus 12 questions were set and six had to be answered. Two from section A and four from section B. In 1964 13 questions were set of which six had to be answered: two from section A; two from section B; two from section C but at least one from section C1 i.e. Africa.

Change towards a more scientific approach

It was felt by education authorities, University lecturers and

teachers that certain aspects of Geography were neglected by the 1955 syllabus. Cartography, the technical language of the Geographer, was for example one section that was badly neglected. Too little attention was also given to Geomorphology. On the whole it was felt that the 1955 syllabus was firstly too vague and secondly that it was incomplete. (Barnard, 1980).

Because of pressure from teachers and the Society for Geography, because of what were regarded as unfair questions, the C.E.D. appointed a committee to investigate the Geography syllabus. The committee drew up a draft syllabus which was sent to the Geography Department of Stellenbosch for their comment:

In a letter to the Superintendent General of Education, the following comments were given:

1. Section A: Physical and Practical Geography should replace General Geography.
2. The omission of certain portions under The earth as part of the Solar System and the addition of some of them under Latitude
3. A total rewriting of Climate in a more logical sequence and a more detailed description of certain portions. The meaning of relative and absolute humidity under Practical work must be scratched and added earlier under climate. The elementary interpretation of weather maps must be omitted (It is impossible for school children to understand this topic).
4. Natural regions must become a separate section.
5. The earth's crust and land forms is written in more correct terminology.
6. Cartography: The addition of three new sections and a more specific description of map projections.
7. Regional Geography must become section C. It is proposed that

- (a) South Africa and
- (b) the rest of Africa are made compulsory and that one of Europe or North America or South America or Asia or Australasia be done. If possible the Department should prescribe one of these continents every two years.

8. At the end of each continent it said: a General knowledge of the rest of Europe and the surrounding islands. It is regarded as dangerous and undesirable because it will place the Geography teacher in a position of uncertainty. The whole world has in any case been done in Natural regions.

It is interesting to note that there were major and minor changes proposed. In paragraph four it is recommended that Natural regions becomes a separate section - stressing the importance of natural regions at that time. It was also proposed that Regional Geography should become section C and that South Africa and Africa be made compulsory. This stressed the importance of educating good South African citizens. From this it is clear that the emphasis was still on a regional approach.

The whole syllabus as proposed by the Stellenbosch Geography Department was then sent to the Cape Education Department. A comparison between the accepted syllabus of 1964 and the proposed one by Stellenbosch shows that the Department accepted the syllabus exactly as it was proposed. (See appendix A8)

The 1964 syllabus was in use till 1969. In 1966 a revised syllabus for the Senior Certificate was published. The first examination was to be held in 1970.

When comparing the 1964 and 1966 syllabuses the following points emerge. Under (a) Temperature the following changes were made:

2. CLIMATE

(a) Temperature:

1964

- The following processes: solar radiation, earth radiation, conduction. The vertical decrease in temperature and temperature inversion (also the drying of air).
The following causes and effects of temperature due to vertical air movement:
- (i) Convection.
 - (ii) Topographical elevation.
 - (iii) Frontal elevation.

The influence of vertical air-movement (ascending and descending air) on temperature. Isotherms. Seasonal and daily temperature range.

Attention must be paid to the underlying relationship of the phenomena mentioned.

(Education Gazette, 17 September 1964)

(a) *Temperature:*

1966

The following processes: solar radiation, earth radiation, conduction.

Factors influencing temperature, especially latitude, altitude and relief, distance from sea, ocean currents and winds.

Isotherms. Seasonal and daily temperature ranges.

(Attention must be paid to the underlying relationship of the phenomena mentioned.)

(Education Gazette, 3 November 1966)

The "factors influencing temperature" are stressed in the new syllabus. Under (d) Practical work the 1966 syllabus mentioned that measurements should be metrical.

Under "The earth's crust" the terms sial and sima are added. Where the 1964 syllabus consisted of four sections under "The earth's crust", the 1966 syllabus only had three namely:

(a) The earth's crust

(b) Internal processes and their effects

(c) External processes (weathering, erosion and deposition) and their effects. This section was further divided into six subsections eg.

(i) Weathering of Rocks.

(ii) River action in humid areas. Valley development —the land forms typical of youth, maturity and old age. Alluvial fans and deltas.

(iii) Desert landscapes. River action in arid areas. Wind erosion; wind deposition, including barchans and seifs.

(iv) Valley and Continental Glaciers (ice sheets). Glacial valleys; ice-scoured plains and glacial drift plains.

(v) Limestone and dolomite areas: Caverns; karst topography.

(vi) Coastal types: sea erosion and deposition; coast lines of submergence (rias and fjords) and coast lines of emergence.

65/

(The Education Gazette, 3 November 1966)

The Cartography section largely remained as it was. Under Section B Monsoon Regions were separated from Tropical Summer Rainfall Regions.

This meant that there were 11 regions in stead of 10.

Under Section C two "Notes" were added:

Note 1: A general study of the following continents must include situation, political divisions, relief and drainage, climate and natural vegetation.

Note 2: In respect of the particular countries mentioned below special attention should be paid to economically important human activities. This, in most instances, will include a study of industrial and agricultural development and the establishment of factories as affected by the supply of raw materials, power, labour, transport, home and foreign markets. (Education Gazette, 3 November 1966)

From the "notes" it is clear that a more human and economic approach was required.

The examination requirements remained as they were.

The "lucky dip" period

After the first Senior Certificate examination was written on the 1955 syllabus (i.e. in 1957) there were numerous complaints by teachers and the Society for Geography Teaching on the method of examining.

Maree (1961) complained about the type of questions in examination papers. According to him three comparative questions could be asked i.e.

"Discuss the similarities and differences between the Belgium and Norway. Refer to the natural conditions influencing the activity and connecting routes of the population."

"Indicate the similarities and differences between the Pampas of Argentine and the Prairies of Canada with reference to the suitability of each for the cultivation of grain crops."

1960

[Three hours.

DEPARTMENT OF PUBLIC EDUCATION.
CAPE OF GOOD HOPE.

SENIOR CERTIFICATE EXAMINATION.

Write on the front cover of your answer-book, after the words "Subject of Examination"—

GEOGRAPHY.

Above each answer write the number of the question.

Answer SIX questions: TWO from Section A and FOUR from Section B.

SECTION A.

(Answer any TWO questions from this Section.)

- (a) Name, on the contour map provided:
Long Hill; Rocky Ridge; Springbok Flats;
West Poort; Cone Hill; Baboon Nek;
Crows' Nest (highest point in the area). (25)
- (b) On one sheet of the graph paper, draw a section along the line AB (use vertical scale 1 inch = 250 feet). (10)
- (c) (i) What is meant by "Scale 1/25,000"?
(ii) What is the distance in miles from A to B?
(iii) What is the vertical exaggeration of the section you drew in (b)? (15) [50]

Here follow climatic data for a station in one of the Natural Regions of the World:

Temperatures in degrees Fahrenheit, rainfall in inches.

	Jan.	Feb.	Mar.	Apr.	May	June.
Temperature.....	69.9	70.3	68.1	63.2	58.9	55.7
Rain.....	0.7	0.6	0.9	1.9	3.8	4.5
	July.	Aug.	Sep.	Oct.	Nov.	Dec.
Temperature.....	54.7	55.6	57.9	61.2	64.4	67.9
Rain.....	3.7	3.4	2.3	1.6	1.1	0.8

Temperatures in degrees Centigrade, rainfall in millimetres.

	Jan.	Feb.	Mar.	Apr.	May
Temperature.....	21.1	21.3	20.1	17.3	14.9
Rain.....	18	15	23	48	97
	Jul.	Aug.	Sep.	Oct.	Nov.
Temperature.....	12.6	13.1	14.4	16.2	18.0
Rain.....	94	86	58	41	28

- (a) Represent these data graphically on one sheet of the graph paper. (Use either Fahrenheit, inches data or Centigrade, millimetres data). (10)
- (b) Describe the climate of the station as illustrated in the data and on the graph you have drawn. (10)
- (c) Identify the area as accurately as possible, and say where such regions occur throughout the world. (10)
- (d) Comment on the vegetation of such regions and the effect of climate on agricultural activities. (20)
3. (a) Draw a diagram to represent the position of the Earth in relation to the rays of the sun on 22 December, and from your diagram determine the length of the night at the Equator, the Arctic Circle, and Cape South. (10)
- (b) On 21 March the captain of a ship observes that the sun's altitude is highest, is 50 degrees above the Northern horizon. At that moment the ship's chronometer indicates 10.40 hours. What are:
(i) The position of the ship?
(ii) The nearest large port?
(iii) The approximate distance from that port? (20)
- (c) Describe the apparent path of the Sun, on 22 June, as observed at the following stations on:
(i) Equator (ii) Tropic of Capricorn (iii) Arctic Circle
At which of these stations is the daylight period longest? (10)
4. (a) By referring to Relief Rains as your example, summarise the atmospheric conditions that cause rain to fall. Illustrate your answer by drawing a diagram representing this type of rain.

- (f) Name *three* of the following weather factors operating in various parts of the world. In each case state the effect of the factor, and quote examples from South Africa. (20)
- (g) Distinguish between *temperate cyclones* and *tropical hurricanes*, showing also in what respects they are similar.
Draw a suitable diagram to illustrate any *one* of these phenomena in the Northern Hemisphere. (15) [50]

SECTION B.

(Answer any FOUR questions from this Section.)

Write an account of the geography of the Atlas Lands of North Africa. Illustrate your answer with a suitable sketch-map of the area. [50]

Write accounts of the geographical aspects of the following South African pursuits:

(a) Maize-farming.

(b) Gold-mining.

Illustrate your answer with a sketch-map of South Africa, showing the location of these activities in relation to the chief cities and harbours of South Africa. [50]

On the map of Europe provided, indicate suitably and name:

(a) River Ebro; River Po; Caucasus Mts.; Carpathians.

(b) The winds off the west coast of the Iberian Peninsula in January; The January Isotherm of 0° C. (32° F.)

(c) Main areas producing: wheat; wine; timber. (Two of each.)

(d) Chief coal mining area in: Belgium; Russia.

(e) Manufacturing region in: Northern France; Western Germany.

(f) Kiel Canal; Volga-Don Canal; Odessa; Moscow; Marseilles; Antwerp.

(g) The boundaries of: Portugal; Switzerland.

(h) Three volcanoes. [50]

Write an account of the geography of Japan and illustrate your answer with a suitable sketch-map. [50]

9. Choose any *three* of the following areas in North America:

The Canadian Prairies.

The Eastern Seaboard of the U.S.A.

The West Coast of the U.S.A.

The St. Lawrence Lowlands.

In each area name the chief city, comment on its location and relative importance, and illustrate your answers with suitable diagrams. [50]

10. Choose any *THREE* of the following commodities exported from South America:

coffee; saltpetre(nitrates); petroleum; wheat.

In each case, name the chief producing area and give an account of the geographical conditions affecting production. Illustrate your answer with a sketch-map of South America showing all four areas and chief towns and harbours serving each. [50]

11. (a) On a sketch-map of Australia, indicate and name the major Natural Regions as determined by climate and vegetation; show also the capitals of the states and the administrative capital of Australia. (20)

(b) Bunbury, Townsville, and Launceston are in three different regions. In each case name the state and the natural region in which the town is situated and give a brief account of the human activities of the region. (30) [50]

12. On the map of the world provided, indicate suitably and name the following:

(a) Suez Canal; Panama Canal.

(b) *Three* areas, in different countries, rich in petroleum.

(c) The sea-route from Western Australia to Lancashire, showing:

(i) Four ports East of Suez (including the port of departure) and one important commodity that might be loaded at each port.

(ii) Four ports west of Suez, including the port of arrival.

(d) The coastal ocean currents in the South Atlantic.

(e) The air route from South Africa to Australia.

(f) Rivers Amazon; Mississippi.

(g) Cuba; Java; Newfoundland; Iceland.

(h) Agadir; Valdivia; Ibasat; Baku. [50]

"Discuss (a) Mutton production in the South Island of New Zealand.

(b) Beef production on the Pampas. Refer in both cases to the marketing of the products.

He asked what was going to happen to a teacher and candidate if such questions are set. He continued that in the 1960 paper no question was asked on Geomorphology and two were of a practical-mathematical character. Of the eight questions in section B each contained a map. Owing to this not enough marks could be given for factual knowledge. The question on Japan was far too wide. (See table 10).

Van der Spuy (1961) also complained about examination papers. He called the Senior Certificate Geography examination a "lucky dip" because no one knew what was going on. He said that one of the papers contained questions on Durban (four times), Honolulu (twice), Chicago (three times) and the International Date Line (twice). In a following paper out of eight questions in section B, five were on specific products: tea (three times), coffee (three times) and cotton (twice). Van der Spuy further said that there were questions on several aspects not prescribed by the syllabus. He unfortunately did not give examples.

Van der Spuy also complained about the question on Japan (November, 1960) and because the examiner asked questions on Launceston and Bunbury instead of Hobart and Perth.

Oosthuizen (1961) also complained about the question on Japan (November, 1960). According to him it was too wide and then the examiner asked a map as well!

Geography teachers also complained about the difference in examination results between Geography and other sub-

jects like Mathematics, Science and History. It was said that it was unbelievable that a candidate with an IQ of 140, who obtained A symbols for Geography for all his internal examinations, and who received a B symbol at the end of Std. 10 for his aggregate obtained a C symbol for Geography in the 1960 examination. He obtained A symbols for Mathematics and Science. The same teacher's candidates obtained four A symbols and four B symbols in the 1958 examination. In 1960 he had a stronger class, but the candidates could only obtain six C symbols.

In an editorial in the Journal for Geography (1962) the editor gave a review of the past five years. The following emerge from his review:

Questions are still asked on aspects that only the examiner and moderator read in the syllabus eg. the experiment of Foucault's pendulum was asked in the 1961 examination and in March 1962. His further comment was that nobody should be an examiner if he did not live with the syllabus from day to day. The average for the same pupils in Geography was 50% - something to say the least, to be unhappy about. In the March 1962 Geography Paper a question of 50 marks was set on the Congo basin. According to the editor the question should have been on Nigeria. The syllabus states: "West Africa, particularly Nigeria;"

There were many complaints about the 1955 syllabus and the ways in which it was examined. The result of this was that Geography as a school subject lost ground in comparison with, for example, History.

The danger that the Geographers saw in it at the time was that the image of Geography was deteriorating. More and more pupils in Secondary school did not take Geography with the result that a lot of schools had to abolish Geography as a subject.

The introduction of the new syllabuses in 1905 and 1969 did not solve the problem, although matters improved after they had been introduced. The six years between 1900 and 1966 could be called the turbulent years. The new syllabus and with it the new textbooks did their part in boosting the image of geography, nevertheless there was criticism of the new syllabus as well, particularly on the question of whether it went far enough. It was true that the pupil was freed from the burden of having to study each of the six continents but on the other hand, he was required to have a much more thorough knowledge of physical geography. Most new opportunities for geographers however, lie in the field of applied economic geography. One wonders then whether the new syllabuses were radical enough to supply an essential knowledge of places, which forms the basis of geography at all levels. This is not said to criticise the work of the compilers for they had to face the opposition of the more traditionally minded. What is important is that they gave momentum to the idea of change.

It is of importance to notice that the 1963 syllabus eventually became the core syllabus of the J.M.B. This was due to the fact that towards the late 1900's an effort was made by the Committee of Education Heads to standardise to a certain extent the syllabuses of the different Education Departments.

Conclusion.

From this chapter it is clear that geography teaching in South Africa was strongly influenced by Britain. Only in 1945 was there an effort to move away from the British influence. There was also a marked increase in the importance of natural regions in the syllabus. This was surely influenced by a similar trend in Britain a few years earlier; in their turn the British were proba-

bly influenced by Herbertson's Natural Regions paper in 1904. There was also an increase in the amount of Physical Geography. Apart from Natural regions, there was an increase in the amount of Regional Geography.

South Africa and Africa became increasingly important. There was also the so called Social Studies era in the 1950's, about which there was a great dispute.

It is interesting to note that syllabus revision was the sole responsibility of the Education Department. It was only in 1963 that the aid of the Universities was called in.

Another feature of the syllabuses was that small changes always occurred from time to time.

This was the position until the end of 1972 for the Junior Certificate and 1974 for the Senior Certificate when the new differentiated syllabuses were introduced in 1973 and 1975 respectively. These will be dealt with in the next chapter.

1917	1922	1921	1934	1947	1955	1964	1973	1980
<p>First work - written - Goby "Capes and Bays"</p>	<p>1922</p>	<p>First syllabus</p>						
	<p>Changes of IX - SA - Europe Modern Descriptive Geography</p>	<p>Africa - South of the equator Asia Americas</p>	<p>Detailed study of Union of Africa S.A. Selected European countries Selected Asian countries - South East Asia Selected South American countries United States New Zealand, Australia</p>	<p>Industrial U.S.A.</p>	<p>continental approach</p>	<p>Only two continents</p>	<p>U.S.A. e.g. - One developed country - one less developed country - assignments Std. 10: - Republic of South Africa - Human - economic - tertiary - secondary primary - farming - urbanization - South West Africa/Namibia</p>	<p>only 2 each early regional economic</p>
<p>Physical - climatology - Geography - Meteorology</p>	<p>Practical - contour tables - Meteorological instruments</p>	<p>Astronomical</p>	<p>drawings sections</p>	<p>Cartography</p>	<p>Expanded</p>	<p>only standards six and seven</p>	<p>Drainage patterns Slopes Evolution of landscapes Soils - erosion - soil forming - soil types</p>	<p>- aerial photographs - field work</p>
<p>Neglect of: Local Geography South Africa</p>	<p>Natural Regions approach to world geography Headings: - climate - vegetation - animal life - human activities</p>	<p>Economic geography of products and prices</p>	<p>Distribution</p>	<p>Human Geography: - Population - Economic - Rural settlement - urban settlement</p>				
<p>First syllabus by standards</p>								

THE DEVELOPMENT OF THE SOUTH AFRICAN SCHOOL GEOGRAPHY CURRICULUM OVER THE YEARS

Table 17

CHAPTER 4

THE PERIOD 1973 TO 1981 - SCIENTIFIC GEOGRAPHY IN DIFFERENTIATED EDUCATION

To summarize the development of syllabuses up to this point, three phases can be distinguished:-

Before 1962.

It was the duty of each Education Department to draft its own syllabus - this was due according to each one's own needs. They had to, however, get the "green light" from the Joint Matriculation Board (J.M.B.) as the body which set the requirements for university entrance. There was no procedure for the revision of syllabuses with the result that a specific syllabus could stay in use for decades. Nevertheless a syllabus was seldom in operation for more than \pm 10 years. Towards the late fifties and early sixties there were pressure on the Cape Education Department from the Society for the Teaching of Geography and from teachers for a change in syllabus. In 1963 the Department appointed a syllabus committee, and their draft was introduced in 1965 in standard nine.

1965 - 1972

In the late sixties there was a purposeful attempt by the Committee of Educational Heads (C.E.D.), to standardize syllabuses among the different Education Departments. They decided, with agreement of the J.M.B. to select a syllabus of an Education Department and make it the basic or core syllabus. This meant that the different Departments could amend this syllabus by adding, but not leaving out, certain parts according to their needs. This is how the 1966 Cape Geography syllabus became the core syllabus of the J.M.B. (Barnard, 1980).

Since 1972

As part of the new differentiated system of teaching the

C.E.D. and J.M.B. decided to lay down a more rational procedure of revising syllabuses. At a J.M.B. meeting on 1 July 1971 a sub-committee was appointed in collaboration with the C.E.D. to work out a modus operandi for the compiling of syllabuses. The following recommendations were accepted:

- (i) that for each subject a joint syllabus committee had to be established:
 - (a) all subjects had to be on Higher and Standard Grade levels.

This committee should consist of the following members:

- (1) One representative of each of the six Education Departments for whites (The four provinces, the J.M.B. and the Department of National Education.)
 - (2) One representative of each of the three Departments for non-whites.
 - (3) One representative from the Private Schools.
 - (4) Three University teachers in the subject, appointed by the J.M.B.
- (ii) that a working committee be appointed and that the present syllabus plus commentary on it be used in working out a new syllabus.
 - (iii) that each working committee should compile a draft syllabus. After this had been finalised by the joint committee it had to be sent to all the Education Departments and Universities for their comments.
 - (iv) With the commentary in mind the joint committee should compile a final syllabus plus examination requirements. This should be approved by the C.E.D. and then be sent to the J.M.B. for their approval and eventually to the Minister of Education. (J.M.B. 1971).
- (b) The following should serve as procedure when compiling core syllabuses for secondary schools. This procedure was approved

by the C.E.D. on 30 - 31 August 1971.

- (1) When revising a core syllabus it should be kept in mind that only essential alterations and additions be made to the existing syllabus.
- (2) The draft syllabuses had to be ready before 30 November 1971 for submission to the universities and Education Departments for commentary. They should comment on it before 29 February 1972 so that it could be sent to the syllabus committee for alterations. The final syllabuses had to be ready before 30 April 1972 for submission to the C.E.D. and J.M.B. The approved syllabus had to be supplied to the different Education Departments by 31 May 1972, so that it could be implemented in 1973. (J.M.B. 1971).

The working committee for drafting the Geography syllabus were:

Messrs. N.J. Wessels	T.E.D. Chairman
W.J. Voordewind	P.U. vir C.H.O.
F.J.K. Simmonds	Private Schools
J.G. Hattingh	N.E.D.
I.G. Nicol	T.E.D.
Professors P.D. Tyson	Witwatersrand University
W.S. Barnard	Stellenbosch (Barnard, 1980)

The question arises whether this committee indeed used the old syllabus as basis. According to Barnard (1980) the committee started from scratch. The working committee, were inexperienced and they should have listened more to the educationists on the committee. Because the educationists found it difficult to argue with the academics, it so happened that they tried to cast the Senior Secondary syllabus according to university requirements. In formulating the syllabus the University people put in what they thought was necessary as background for university study. The question now is, should it be the task of the syllabus to prepare a pupil for university study? The argument is offered that at school everything must be centred round the pupil and at university round the subject. Some critics feel that the

present syllabus is not pupil centred but subject centred. As part of the 1972 package the C.E.D./J.M.B. decided that all syllabuses had to be revised every five years. Owing to the fact that a drastic change in content could cause a shortage in textbooks and thus a disruption in the classroom, the plan was not accepted. For this reason we still have the 1972 syllabus in use, although it was shortened in 1980. (To be dealt with later.)

Was it necessary to introduce a totally new syllabus only a few years after it had been revised? The answer to this is undoubtedly yes. There were several reasons for this but the most important probably was the introduction of the new differentiated system of teaching where a Higher and Standard grade was brought in. There were other reasons as well, as set out in the pages serving as an introduction to the draft syllabus for Geography in 1971:

INTRODUCTION TO DRAFT SYLLABUS 1971

"From information available it has become apparent that the four main criticisms levelled at the old syllabus (1966) were as follows:

- (i) it was too long
- (ii) it was a two-year course of study, with undue emphasis on factual information
- (iii) there was too much emphasis on the regional approach
- (iv) it was outdated

Current thinking in geography favours a systematic approach and the present trend is against regional description. Modern regional geography is usually comparative and concerned mainly with regional development. Geographers are increasingly aware that to be of use to the community they must be able to solve problems such as planning, conservation of environments, etc. To do this they need a good deal of theoretical knowledge which can be applied in a variety of circumstances. The knowledge acquired in systematic studies may then be applied in a regional context.

MAJOR TERMS OF REFERENCE OF THE JOINT SYLLABUS COMMITTEE

- (i) to draft the new core largely within the framework of the existing syllabus;
- (ii) to tailor the syllabus in such a manner that existing textbooks can be used.

AIM OF REVISED SYLLABUS

This syllabus sets out the geographical concepts and facts considered as essential knowledge for Standard 10 leavers. Since school geography is only one aspect of general education it is felt that a school leaver offering geography in a final examination should have an appreciation of:

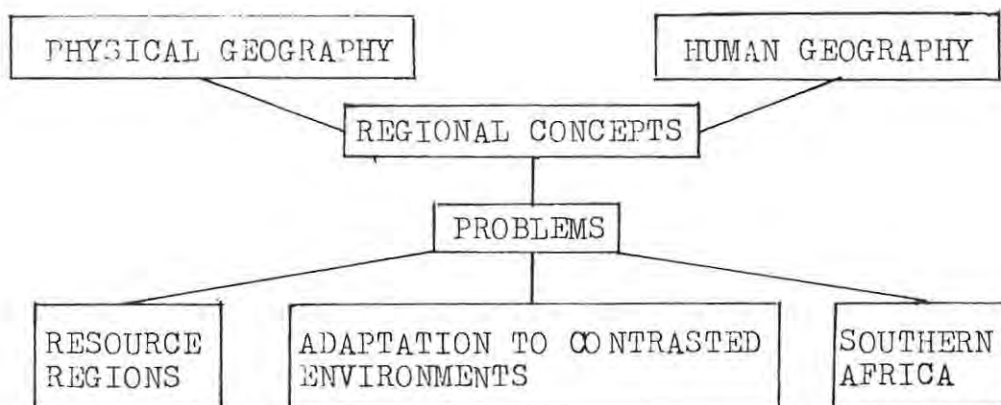
- (i) General world distribution patterns
- (ii) The factors that contribute to the diversity of environments
- (iii) The factors affecting the functioning of specific environments in particular the processes governing alternatively increased productivity or deterioration
- (iv) The effects of cultural differences, such as standards of technological development, on man's utilization of his environment.

The three-year course planned in this syllabus recognizes the stages of intellectual development of the pupils. A new concept has been integrated into the overall plan, where pupils should be required to do research projects of increasing difficulty. These can be designed to meet their individual abilities. They are given the opportunity of using the basic foundation established in previous years for interpreting and manipulating geographical data and intelligently making deductions.

In order to present a challenge to the pupil's intellect factual material must be utilized as the raw material for the development of geographical concepts.

FRAMEWORK OF REVISED SYLLABUS

To remedy the shortcomings of the old syllabus and to implement modern thinking in geography this syllabus has been divided into three sections: physical, human and regional geography. By drawing on physical and human geography to formulate regional concepts and by using these to solve a variety of geographical problems a more systematic approach to the subject is encouraged. (own underlining.)



CONCEPT AND THEORY

The use and appreciation of geographical concepts is fundamental to this syllabus. It is envisaged that these will be introduced during systematic studies and their relevance demonstrated within the regional context. Factual content, while clearly essential for the development of any theme, must no longer stand in isolation. Through the use of a theoretical approach, it becomes possible to minimise descriptive geography which has little place in a modern scientific society. Emphasis must be laid on "explanation"; facts are the raw material for understanding and not the end in itself. (own underlining).

In essence the changes that have been made in the syllabus concern new approaches, rather than new content and the new terminology associated with the modern concepts has been used throughout.

COMPARISON OF OLD AND NEW SYLLABUSES

The new syllabus has been designed in such a way that over 80% of the material is derived from the old syllabus. The committee feels fully justified in its decision to introduce a small amount of new material. It is considered that this is essential in order to modernise school geography and to bring it into line with the accepted new thinking in the subject. The committee is of the opinion that a refusal to accept this would be a retrogressive step which would jeopardise the future development of this important formative subject at the school level. Existing textbooks are found to cover most of the proposed syllabus. Those aspects not adequately dealt with in current South African textbooks could, however, be implemented easily through the provision of short, in-service courses or study guides issued by the various examining bodies." (Introduction to first draft syllabus, 1971).

COMMENTS ON THE 1971 DRAFT SYLLABUS

The following are comments from Universities, Education Departments and Professional Societies on the 1971 draft syllabus.

UNIVERSITIES

Unisa:

The draft was accepted in general. The shortening of the syllabus is welcomed but the question arises whether it is still not too long. The draft is vague about the amount to be done.

The movement away from Regional Geography towards a more systematic approach is welcomed. At the end of their recommendations the following points were raised.

1. The maintaining of the total image of the subject.
2. New concepts should be restricted.
3. More detail should be given regarding the amount of subject matter to be done.
4. The gradual introduction of this syllabus. By means of periodicals, refresher courses and contact with universities, much can be done to prepare teachers for the new syllabus. (Kommentaar op Konsepleerplanne vir Senior Sekondêre Aardrykskunde).

Potchefstroom University

The draft was accepted in general and comments were given on a few points. It was felt that the section on soils should be changed and expanded.

General comments:

1. The division of the syllabus into three sections was highly approved.
2. The recommendations regarding the examinations were highly approved.
3. It was recommended that the H G should have a larger choice of questions (P.U. vir C.H.C.: Aanbevelings t.o.v. kernleergang vir Senior Sekondêre Aardrykskunde).

University of Fort Hare

The new syllabus was not approved. The following general comments were given:-

1. There is no proper definition of subject aims, concepts and content in the new syllabus.
2. Because of a lack of subject definition it is impossible to assess the aims and content.
3. They fully agree with the comments of the Society for the Teaching of Geography. (See later) (Universiteit van Fort Hare: Memorandum insake kernleergang vir Sekondêre Aardrykskunde).

University of the O.F.S.

The syllabus is accepted in principle except for the fact that no Political Geography is included. It is absolute essential that a standard 10 pupil should have a basic knowledge of world problems today. Pupils will enjoy reading about world matters if they have a knowledge of Political Geography (U.O.V.S.: Voorgestelde Leerplanne vir Sekondêre Aardrykskunde).

Stellenbosch - Prof. W.S. Barnard

In a 19 page memorandum Prof. Barnard gave a detailed discussion of the new draft as well as the subject matter that could be included in a three year course. The content could be divided into three sections namely:

- A - Cartography and Physical Geography
- B - Human Geography
- C - Regional Studies

The implementation of it could be done in two ways.

Alternative 1

Standard 8 - A - Cartography and Physical Geography
Standard 9 - B - Human Geography
Standard 10 - C - Southern Africa.

This "horizontal" approach has the following advantages:

- (i) Each years work is inter-related.
- (ii) Textbooks writers will be able to keep up with the

new direction as the matter in Standard 8 does not differ much from the existing syllabuses.

Disadvantages are:

- (i) Division of work in compartments which make integration between sections difficult.
- (ii) Physical Geography is introduced at the stage where the pupil is not yet ready for it.

Alternative 2

The approach can also be vertical:

- Standard 8 A - Cartography
 B - The Geography of Human Population
 C - The R.S.A. and S.W.A.
- Standard 9 A - The Atmosphere (Weather and climate)
 - Water and land
 B - Farming Geography
 C - R.S.A. - Natural resources and their utilisation.
- Standard 10 A - The Earth's crust and Landforms
 B - The Geography of Industrial Production.
 B - Urban Geography
 C - R.S.A. - The Geography of Secondary and Tertiary Production .

The advantages of such a vertical approach are:

- (i) There is continuity in each year's work
- (ii) The pupil starts with a combination of sections not new to him. The syllabus ends in std. 10 with the more advanced work.
- (iii) Because cartography, population geography, the population of the R.S.A. and S.W.A. are found in existing textbooks, the task of the textbook writers will be much easier.

The great disadvantage of this approach is that the area study is totally dissected. (Barnard, Memorandum).

University of Cape Town

The new syllabus was welcomed by U.C.T. There was, however,

cause for concern regarding the length. It was felt that the old tradition of work superficially covered would be maintained, which could lead to superficial knowledge without understanding. Before the syllabus could receive final approval it should be "critically scrutinized and subjected to judicious pruning, not by a committee of university men but by a committee of high-school teachers who face the practical limitations imposed by the school time-table." (U.C.T. : Comments on proposed core syllabus for Senior Secondary Geography).

University of Natal

Prof. O. Williams rejected the omission of Regional Geography or the study of regions or areas. His point of view was that a representative number of world regions are essential, since one of the main tasks of school Geography is to promote understanding of various parts of the world. If the study of regions is not covered by Geography what other subject will deal with it? The study of Southern Africa and especially South Africa in Std. 10 is welcomed and so is the emphasis on practical work.

The absence of local studies is regretted. Prof. O. Williams also deprecated the association of regional Geography with factual content and description. Two further points raised by him were:-

- (i) That the syllabus is too advanced and ambitious on the systematic side for all pupils but the best
- (ii) that the std. 10 class should be taught by Honours graduates in Geography. (University of Natal: New Syllabuses: Geography, Comments).

Rhodes University

The following aims should have a prominent position in the syllabus.

"The ability to

- formulate a problem
- seek and interpret new information (eg. intelligent use of the library)

- select the relevant from the irrelevant
- integrate the data in relation to geographical concepts
- write up the findings precisely and "concisely and logically".

Rhodes was also unhappy about the way in which the revision had been undertaken and the apparently unjustifiable haste in trying to implement the new syllabus. (Rhodes University: Comments on core syllabus for Senior Secondary Geography).

The following is a summary of the general comments from the universities regarding the content of the syllabus: (See appendix A 10)

1. Physical

- (a) Climate: general acquiescence except for Berg Winds.
- (b) General dissatisfaction with geomorphology - not so much with detail, but with arrangement of topics. Marine action felt to be misplaced, standard 9 overloaded, fluvial processes better placed in 10.

2. Human

- (a) On the whole the economic, population, urban breakdown is acceptable, though the logic of arrangement is sometimes questionable.
- (b) Rhodes, Fort Hare and University of Natal, Pietermaritzburg, complain of repetition between economic and regional geography, especially in standard 8. They do not approve of the regional fragmentation and make a plea for integrated regional study on a continental or national scale.

More specific comments:

Regional of (8)

- (i) Cottage industries criticised
- (ii) Concept of subsistence economics - do they even exist as important entities? (Rhodes and U.C.T.)
- (iii) single-component economies given under 3.2.1 are questioned as being 19th century concepts (U.C.T.)

- (iv) 3.2.2. explanatory notes not sufficient to define the requirements.

Population of (9)

- (i) Major ethnic groups - necessary?
(ii) 2.1.3 Effect of culture - generally condemned as being so broad as to be meaningless.

Regional of (9)

- (i) 3.1.1.1 and 3.1.1.2 and 3.1.1.3 could be combined (Rhodes).

Urban of (10)

Appears to be general acceptable, detailed changes suggested.

Regional of (10)

There appears to be general dissatisfaction with this section.

- (i) Is it wise to begin with 3.2.1.1? (University of Natal).
(ii) Contrasting maize and wheat production a sterile task (Rhodes).

Other points

1. There is a general fear that some of the practical requirements may be unrealistic, at least initially. Confusion often arises out of the use of "case study". Sometimes this is interpreted as a field study. Clarification is needed.
2. In revising the syllabuses, would it not be useful to incorporate the explanatory notes in the actual syllabus? This should result in greater clarity, though the syllabuses will inevitably appear to have been lengthened. The N.E.D. has done this successfully in places.
3. There is a fear that horizontal integration of material is not possible.

EDUCATION DEPARTMENTS

Transvaal

"The proposed geography core syllabus for the standards 8,9 and 10 met with the full approval of the committee. The syllabus was seen as an avenue for the introduction of a fresh approach to secondary school geography teaching. In particular the

committee liked the emphasis on applied geography and the stress on a contact with reality. The opportunity for a wide range of approaches by the teacher and the choice within the syllabus were endorsed. The stress within the syllabus for the formulation of concepts and the discouragement of the rote learning of facts was seen as a much needed step in the right direction." (Transvaal Department syllabus Committee).

Orange Free State

The draft was accepted by the syllabus committee of the O.F.S. It was, however, felt that certain sections in the syllabus could be set out in greater detail.

It was also felt that the standard 10 syllabus was far too long. It would be impossible to make a thorough study of all the subject matter. It should be left to each Department to decide about the calculation of project marks for the examination.

The syllabus for the Standard Grade met the requirements of Standard Grade pupils. (O.V.S. Leerplankomitee).

Cape Education Department

There seems to be an exaggerated emphasis on the systematic approach. It is not the duty of schools to train climatologists and geomorphologists etc. This is the sole task of the university. To a certain extent one can assume that the Higher Grade syllabus prepares pupils for the University but it is certainly not the case with the Standard Grade. The Standard Grade is for the general school population and should therefore differ drastically from the Higher Grade.

The Standard Grade syllabus should be more balanced and realistic. Both the Regional and Systematic approaches have their advantages and therefore the one should not overwhelm the other.

It must be emphasized that there is no relation in the new syllabus between physical, human and regional geography. The Cape committee continues:

"Hierdie verbandloosheid word dan verder deurgetrek na elk van die indelings. Die geheelbeeld word aldus so verongeluk dat die woorde sistematiese "benadering" 'n afskrik frase word."

Further points raised are the following:

- Because of the scientific and practical approach each school should have a well equipped Geography room - would it be granted by the authorities?
- The fact that the revision had to be done in such a way that existing textbooks could be used, was probably forgotten by the compiler of the new syllabus. The new draft implies new textbooks which is a great expense.
- The new approach is probably not known to many teachers and it will thus create great problems for them.

From the above it seems as if the new draft is unacceptable to the Cape syllabus committee (Kaaplandse Onderwysdepartement).

Natal Education Department

The following comments were made:

Introduction of fresh subject matter, and some aspects of modern geography have been long overdue and is welcomed.

The introduction of compulsory testing of topographic maps and photo interpretation is heartily endorsed as this important aspect of Geography has been neglected in many schools in the past.

The following are extracts from aspects which the committee was not happy about

- "1. The syllabus does not provide sufficient scope for practical integration of subject matter in the three divisions as correlation is not always possible. If this is not remedied the teaching of basic concepts in isolation is possible - a very unsound educational approach!
2. The teaching of theories prior to the investigation of an example is not sound. It would appear

that the examples should come first and the theories deduced and propounded after the study of suitable examples has been made.

3. The sections which are catalogued as regional are not regional in approach, and are primarily economic topics which are scattered over the face of the world. It is suggested that this would make the use of many of the text books difficult as the full sets would have to be available at the first stage of this educational cycle.
4. With the present proposed core syllabus and the accompanying directive on examinations the examiner would find difficulty in the setting of questions.
5. While the Committee associates itself fully that new ideas and new approaches are essential it is of the opinion that a total rejection of the regional approach is not justified at school level. Syllabuses drawn up in Britain over the last two years still incorporate large sections of regional Geography.
6. It is also felt that the proposed core syllabus is University-orientated and caters too much in its content for University entrants. The vast majority of students in the schools do not enter University."(Natal Syllabus Committee).

OTHER DEPARTMENTS AND BODIES

Administration of Coloured Affairs

About 75% of the Geography teachers in the Department feel that the present syllabus does answer to its aims. It is therefore not necessary to make a drastic change in the syllabuses.

The new draft syllabus is not acceptable to the Department because:

1. Standard 8 pupils are not yet ready for a systematic approach.
2. The new syllabus will not provide pupils with a broad background - this is something that Geography should do.
3. Because of the above the subject will lose ground as a school subject.
4. The average teacher will not be able to do justice to the subject, because he does not have the necessary academic background.

Other points raised were:

- The changes in the new syllabus are too revolutionary
- It carries too much content (Administrasie van Kleurlingsake).

Department of National Education

The Department welcomed the new syllabus especially because of the new approach to Geography teaching. There are however a few points of criticism:

- Some parts of the syllabus are too vague.
- Parts of the syllabus are too fragmentary without keeping the whole (Gestalt) in mind.
- The syllabus committee should decide whether projects are going to be examined. It should not be left to the discretion of the different departments.
- A study of Natural Regions is essential because it provides the pupil with a general impression regarding Geography as a whole.
- The textbooks in use will be unsuitable - will the new textbooks be available in time? A list of reference books should be supplied (Department van Nasionale Opvoeding).

Department of Indian Affairs.

"The syllabus replaces the old dualism between physical and human phenomena (the man/environment approach) and adopts a "trinitarian approach" which comprises the natural earth, the cultural earth and man, as envisaged in the study of physical, regional and human.

Certain important features of the syllabus should be noted. It is graded according to difficulty, thereby making allowance for the psychological development of the child. Growth is a continuous process and the syllabus is organised to provide for this continuity.

It is clear, that the syllabus presents a balanced picture of geography containing, as it does, some reference to the main branches of the subject.

The syllabus further makes provision for the various aspects of geography to be linked, an arrangement that helps in the building up of accurate generalisations and world patterns."

The Department found the syllabus in order and accepted it. (Department of Indian Affairs).

Private Schools

"The comments received from the H.M.C. schools have been unanimous in their support for the new syllabus. The following statements extracted from some of the correspondence give an indication of this:-

- (i) 'This is the kind of approach which will add dignity to the subject and which will ensure that sensible and worthwhile examinations are set.'
- (ii) 'Generally speaking, the new approach with its systematic methods and emphasis on problem solving, is particularly welcome.'
- (iii) 'Some of the concepts which appeal most are:
 - (a) The integrated development of the syllabus from Standards 8 to 10.
 - (b) The systematic approach which will benefit the "thinker" at the expense of the "reproducer."
- (iv) 'Studying the new geography syllabus, I find it a relief that the overpowering factual content of the old syllabus has been cut down, and that the new syllabus stresses the importance of seeing relationships and of being able to apply knowledge and use facts.'
- (v) 'I believe that the whole syllabus is well integrated especially in so far as material handled in one year is utilised in the following years.'
- (vi) 'We congratulate your committee on the interesting and creative syllabus, which represents a major breakthrough for Geography in South African schools.'

Points raised by the Private Schools:

1. The Board should consider appending a list of reference books to the syllabus.
2. The syllabus should be reviewed far more regularly than in the past.
3. Specimen papers should be sent out with the new syllabus.
4. There should be a difference in the total marks for Higher and Standard Levels, so that there is incentive of adding to the aggregate, which will encourage pupils to take the Higher grade.
5. The present mark total of 350 necessitates long questions.
6. Is it realistic to introduce the new syllabus next year (1973) when time is needed to study and prepare the material (Report from H.M.C. (Private) Schools).

Society for the Teaching of Geography

The aims given in the preamble to the draft are inadequate and vaguely expressed. The following should be included:

1. "The inter-relationships between the various facets of geography (not specifically stated as an aim),
2. the ability to express ideas clearly,
3. the ability to formulate a problem, essential if solutions are sought,
4. the creation of an intelligent interest in the subject?"

Other points raised by the Society:

- The illogical arrangement of syllabus content and its sub-divisions.
- The unity of the subject is destroyed
- There is a lack of progression because of the illogical arrangement of material.

Only the main points are given above, the Society elaborated on each of the above points. The Society also had the following objections to the draft syllabus. (Society for the Teaching of Geography, Draft syllabus for Senior Secondary Geography).

1. No detailed instructions are provided concerning the exact nature of material that has to be taught, e.g. in what detail is central place theory to be taught? Also, all sections relating to practical work need greater qualifications.
2. The Committee believes that the planning of school syllabuses should be seen as a continuous process right from standard 2, and that the junior and senior syllabuses at least must be drawn up as an integrated whole.
3. More thought is necessary concerning the implementation of the differentiated courses.
4. The Committee is concerned about the successful implementation of this, or any other new syllabus - and therefore the attention being paid to in-service training, school equipment and textbooks. The Committee would like

- the assurance that these matters are not being overlooked.
5. The English and Afrikaans translations of the draft syllabus are not true reflections of each other.
 6. The Committee is concerned about the balance of the standard 10 syllabus and in particular the concentration on the study of South Africa.
 7. Hasty and poorly formulated decisions now can have a detrimental effect on both teachers and scholars in the future. The subject will be the loser.

The following proposals were made by the Society:

1. The aims, the framework and the content of the syllabus must be re-formulated.
2. The syllabus must incorporate the principle of depth of study in theory and in practice.
3. The date of implementation of the syllabus must be postponed.
4. The content of the syllabus must be specified in relation to depth and detail.
5. The school syllabus at all levels must be seen as an integrated whole.
6. The general and particular educational value of geography should not be ignored.
7. Particular attention must be paid to the language used.
8. Consideration be given to the possible teaching of geography at one level for both the Higher and Standard grades and that differentiation is applied in the examination of the subject.
9. The Society Committee requests the J.M.B. Committee to create an opportunity for the exchange of ideas between representatives of universities, training colleges, schools and officials of the J.M.B. Provided the J.M.B. Committee approves, the Society is willing to make the necessary arrangements for such a workshop.

S.A. Geographical Society

In his comments the President of the Society, Prof. D.E.Nel, spoke on behalf of the Society and on behalf of the University of the Orange Free State. (see p. 80).

Department of Education and Training

The then Department of Bantu Education gave the following comments:

1. "Despite the greatly increased depth of study required in certain sections, and the difficulties of adjustment which will be experienced by our teachers, the Subject Committee for Social Studies realises the need for the revision of the syllabuses, and appreciates the scientific and realistic approach.
2. It must, however, be pointed out that the Committee had not yet received the core syllabuses for Standards 5, 6 and 7, and therefore expresses the hope that everything necessary will be done to ensure continuity and cohesion from the lowest to the highest standards.
3. The Committee understands that those sections of Mathematical Geography (apart from the conventional proof of the shape of the earth), are to be included in the syllabuses of the standards of the third phase.
4. The Committee requests that a selective list of essential reference books be compiled and made available." (Department of Bantu Education)

The above are only brief extracts from the comments given by the different institutions. It is clear that the new syllabus evoked quite a discussion. In Part III some of the proposals made will again be raised, as there seems to be a need for them.

The following is a summary of replies regarding the acceptability of the syllabuses.

SUMMARY OF REPLIES

Universities

University of Cape Town	YES
University of Potchefstroom	YES
Rand Afrikaans University	YES
University of the Witwatersrand	YES
University of South Africa	YES
University of the North	YES
University of Fort Hare	NO
Rhodes University	NO
University of Natal	NO
University of the Orange Free State	YES

In a review of the new syllabus in 1976, Earle said that timing is an essential element in the introduction of a new syllabus, and it was generally accepted that a new syllabus was wanted then. The introduction of the new syllabus was thus welcomed by almost everybody. The problem was that everybody was not yet ready for the syllabus. The teachers were without suitable textbooks in the early critical days. This, to the author's way of thinking only applied to certain schools because when the new syllabus was introduced in standard eight in 1974 there were in fact three textbooks available namely Our New World, Senior Geography and Mans' Environment. But according to Earle it is not only textbooks that created problems (after all the textbooks were written before and during 1973). This syllabus needs more supplementary material. Teachers need lists of recommended readings, teaching charts, maps films, picture sources, games and simulations, models and other suitable reference material that is readily available. In cities teachers can group themselves together in order to discuss and evaluate ideas for teaching Geography. Teachers in the rural areas are undeniably at a greater disadvantage. The criticism is not that the syllabus overestimates the abilities and innovative initiative of our Geography teachers but that it overestimates the time they have to prepare lesson material. The teachers in cities have a further advantage, namely that they are near resources of lesson material, the advantage is even bigger if there is a university. English-speaking teachers and pupils also have an advantage because they have a large range of published resources which they can use. The points mentioned so far, according to Earle (1976) support the call for the provision of more adequate supplementary teaching material. "Syllabus renewal of the kind we are experiencing depends on organizational support on flexibility which it is not possible for teachers, on their own to effect." (Earle, 1976).

Criticisms on the 1973 syllabus

What kind of criticism was there on the new syllabus? Firstly it has been criticised as being too full. This is in fact so, for as a teacher of geography the author found it extremely difficult if not impossible to complete the syllabus efficiently. The teacher thus has a problem: should he rush through, and cover the whole syllabus superficially or should he go deeper and lay a firm foundation of clear understanding?

Secondly it has been said that both grades (Higher and Standard) have been pitched unrealistically high. It seemed more like university entrance material than material for the average teenager to assimilate. The reason for this probably lies in the fact that university lecturers had a great influence on drafting the syllabus. Practising teachers should be actively involved in the construction of a syllabus.

Earle (1976) continues:

"It is natural for teachers who keep a watchful eye on curriculum development in other parts of the world and on new directions in geography at tertiary level to measure our new syllabus against these. This fraternity is, on the whole, pleased with the South African core syllabus but criticize its gross disintegration into systematic units. Reading through the syllabus one notices that much more time is given to systematic studies (especially in physical geography) and one wonders whether the selection of studies of regional economic development is not too small to realize such prescribed aims as "to develop an understanding of the interplay of phenomena which give distinctive character to places" and "to draw attention to unity and diversity in such matters as political ideologies, religious beliefs, cultural norms and economic interests.."

Some aims, laudable as they sound, leave man as no more than an economic factor - little more than a pair of hands - along with power supplies and raw materials. Developments in geography over the past decade have successfully approached the humanity of man; it is a pity that these successes have not been shared with schoollevel geographers to whom the human aspect of geography is of greater personal interest. The human

aspect is probably also of greater moral value, a matter that is stressed in the aims of the syllabus but then receives little real support in the detailed course description. The aim of adding human interest, sympathy and understanding to geography was spelled out by quoting from Fairgrieve (1926). But thereafter the syllabus became remote and dispassionate in style. Little compassion and appeal to social justice is generated by numbering hungry nations by their millions and learning that this condition is part of an economic stage of development that can best be understood by studying antiseptic items like population pyramids and rural-urban ratios. The new syllabus gets no closer to man and his problems than to view him in whole national units. As it stands it does not adequately deal with human problems nor does it generate understanding of and sympathy for the condition of the real social man who occupies a given territory. In a word, it lacks relevance.

These criticisms are the verbal expression of some of the stress that has accompanied the birth of our new core syllabus for geography. Visible expression has taken the form of resignations, teachers taking up their options of teaching other subjects, and confused dissatisfaction among pupils without textbooks and visual stimulus material. One cannot overlook the fact that this has occurred and that the unfortunate situation might have been avoided, or at least alleviated, had the syllabus been introduced less precipitately. Textbooks take time to produce if they are to be both geographically and didactically sound. It is not unrealistic to hope that before the next syllabus is announced it will be subjected to pilot study in some schools with the aim of developing, evaluating and diversifying teaching resources and materials in a realistic examination context.

Against the body of teachers who had very real problems with the new syllabus, or who were plainly frightened by it, there was a larger body who embraced the syllabus if not with enthusiasm then with commendable determination. Many of them sacrificed much time to equip themselves adequately. They, too, soon ran into difficulties which should be avoided in future. Their difficulty was that they did not know what was expected of their pupils. What, they asked, is required under "South Africa: Natural Vegetation?" How far do we go with "Slopes and Slope Forms? Having communicated learnable facts about "One major South African port" how can I be sure that I have prepared my pupils for examination? The syllabus was a comprehensive list of areas of current interest to geographers but was deficient in that it gave no real guidance to teachers about what sort of performance was expected.

It needed filling out at least. Better still it should have specified the behaviours required of the pupils. Suggestions as to how this can be done in geography have been made in an earlier volume of this journal: attempts at prescribing a geography syllabus in both content terms and behavioural terms have been made with some success in Scotland.

Without such a syllabus, teachers asked for specimen examination papers. This was not unreasonable as it was really a request for guidance on the standard of thinking and reasoning expected and the ratio of simple recall to more complex geographical skills to be tested. This is especially necessary in an examination as crucial as our matriculation examination. Specimen papers should have been provided with the syllabus for two reasons. Firstly, they would guide teachers to work more intelligently to suitable standards in all the many subsections of the syllabus; specimen papers are not intended for spotting topics likely to "come-up". Secondly, they would offset the inevitable imbalance caused by the first official examination of a new syllabus. However good, however bad, a matriculation paper is a crude and blunt implement which shapes the activities and thinking of every school child and teacher. The early publication of a specimen paper would lead to open discussion among the professionals and, if necessary, to reassessment and further guidance before teachers committed their classes to a course of study they thought was suitable but which they had plotted more by hope and guesswork than by sensible knowledge."

In most cases the criticism that Earle makes of the syllabus is justified, although there are some aspects that he mentioned which are not so serious. The author does not think the resignation of teachers and the change to other subjects are of major significance especially if one only links it with the Geography syllabus. The textbook problem was also not such a difficulty as the textbooks that were available with the introduction of the syllabus were quite adequate. One can, however, undoubtedly say that the approach followed by the available textbooks is not stimulating and flexible enough, especially for the teaching of the 'New Geography' (Ledger, 1978). Although the Cape Education Department did not supply specimen examination papers with the syllabus, it did supply an example of a question that could be set on the

Netherlands for Higher and Standard grade (Standard 8).

In their handout "Guidance' for the teaching and examining of Geography in Standards 8,9 and 10, Higher and Standard grades," the Department gave guidance on the teaching and evaluation of Geography according to the new syllabus. (See appendix B 1) If this is compared with the guidance and notes given by Examining bodies in other countries, it is to say the least, far from adequate. (To be dealt with in greater detail later).

There are however certain aspects mentioned by Earle which are of great importance. Probably the most important is the provision of suitable and adequate teaching material - something that will be dealt with later. Secondly it is also important to keep in mind what Earle said about timing. It would probably be unwise to make drastic changes in the near future. Small alterations are indeed necessary.

REPORT ON SOME FINDINGS OF THE 1977 GEOGRAPHY TEACHING SURVEY CONDUCTED BY RICHARD LEDGER (LEDGER, 1977)

The questionnaire was sent to the Senior Geography Teachers of the 750 South African high schools teaching geography. In this short report on the findings resulting from answers to some of the questions regarding syllabuses, two sets of figures are given: (The author decided to take only the Cape figures as they are more represented because they are based on a 50% return of the questionnaire.)

1. The percentages based on the 272 respondents from all provinces who returned completed questionnaires (36% of those distributed);
2. The figure appearing in brackets is that for the Cape only, where fully 50% of the questionnaires were returned.

Though only 9% of Senior Geography Teachers are not at all satisfied with the content of the Standard Grade (S.G.) syllabus in Standards 8 - 10, 54% consider there should be greater differentiation in content and standard required between the present H.G. and S.G. syllabuses; 39% disagree and 7% are unsure. Of the 65 questionnaires returned,

47 respondents answered the question concerning the modifications they would like to see implemented in H.G. syllabuses. Many chose two or even three of the alternatives, but 47 was taken as the base for calculating the percentages.

The changes wanted in the S.G. syllabus for Stds. 8 - 10 are:

- (i) A shortened syllabus with less coverage allowing more time for the basics - 57%
- (ii) Less concentration on facts and more on a limited number of broad general geographic concepts - 36%
- (iii) A similar but shortened syllabus with, however, greater emphasis on the practical application of useful geographic techniques e.g. map- and photo-interpretation skills, model-making, problem-solving simulation-gaming, fieldwork data collection and processing, etc. - 34%
- (iv) A completely different syllabus drawn up specifically for S.G. pupils with the accent on current events and world problems (e.g. environmental pollution, population explosion, world peace) where content is subservient to the creation of attitudes and values and empathy for third World difficulties - 26%.
- (v) More concentration on regional geography giving greater world coverage - 21%.

Although 35% of teachers are satisfied, and a further 56% are fairly satisfied with the content of the H.G. syllabus for stds. 8 - 10, nevertheless 52 respondents indicated they would like to see the H.G. syllabus modified in the following ways to improve it:

- (i) Shortening, covering less, and allowing more time for the basics - 48%
- (ii) A similar, but shortened syllabus with greater emphasis on the practical application of useful geographic techniques e.g. map- and photo-interpretation, model-making, problem-solving, simulation-gaming, field-work data collection and processing, etc. - 38%

- (iii) Less concentration on facts and more concentration on a limited number of broad general geographic concepts and their application to the world - 35%
- (iv) A different syllabus concentrating attention on current events and world problems, where content is subservient to the creation of attitudes and values and empathy for Third World difficulties - 33%
- (v) More concentration on regional geography, thus including more countries - 12%

It is interesting to note that a decade ago, in the 1966 H.S.R.C. Geography Teaching Survey it was found that: ... "applied political geography with the accent on interpretation of current world problems, and the relation between international commerce and political affairs, and the supply of food throughout the world, should be added to the syllabus as topics." (percentages varied from 62% to 93% between provinces) (Condensed English Report, p. 9).

It is interesting to note regarding the relevance of what is taught in South African syllabuses, that 92% of teachers regard present syllabus content as relevant to a reasonable degree, to the needs of the modern pupil.

"Little evidence of the implementation of these recommendations is discernible in present syllabuses. It is to be hoped that more notice of teacher opinion in 1977 will be taken by syllabus compilers than appears to have been accorded the 1966 recommendations. Nevertheless it speaks well for the compilers of the differentiated syllabuses that 86 percent of teachers regard present syllabus content as reasonably relevant to the needs of the modern pupil. (Ledger, 1978, p.115)."

One can only hope that compilers of syllabuses will indeed take note of these findings, and others reported by Ledger, when revising the present syllabus for possible alterations.

AMENDMENTS TO THE 1973 GEOGRAPHY SYLLABUS

In the Education Gazette of 15 May 1975 the following amendments to the Higher Grade syllabus were made:

The attention of principals of high schools is drawn to the fact that on pages 11 and 12, paragraphs 1 to 6 under the heading THE EXAMINATION of the syllabuses for Geography (Higher Grade) for Standards 8, 9 and 10, which were published in the Education Gazette of 12 April 1973 have been amended to read as follows:

“THE EXAMINATION

1. Standards 8 and 9 will be examined internally at the end of each year.
2. The final external examination will be set on the Standard 10 syllabus, but candidates will be expected to draw on their overall knowledge of geography in answering Paper I (map work and photo interpretation).
3. The examination will consist of TWO papers:
 Paper I — 1 hour
 Paper II — 3 hours
4. Paper I
 One compulsory question on map and photo interpretation will be set. (80)
 Paper II
 The paper will be divided into 3 sections.
 Seven questions will be set, four of which must be answered.
 Section A. Physical Geography. Two questions will be set. One question will be systematic, the other may be of the composite variety drawing on Regional and/or Human Geography. One question must be answered. (80)
 Section B. Human Geography. Two questions will be set. One question will be systematic, the other may be of the composite variety drawing on Physical and/or Regional Geography. One question must be answered. (80)
 Section C. Regional Geography. Three questions will be set. One question must be answered. (80)
 The fourth question may be chosen from Section A, B or C. (400)
5. The questions may consist of subsections. These may be of the essay type; shorter questions, short questions and questions on maps.
6. Candidates will be rewarded for annotated diagrams, sketch maps, etc. to illustrate examination answers where applicable.”

In 1980 the Senior Secondary syllabus was shortened, due to the fact that teachers found it almost impossible to complete, as mentioned earlier (see p. 94). The following changes were made. (See Appendix A 14) It was not so much the case with the standard eight and nine syllabuses. They could easily be finished, but especially the Standard 10 syllabus.

A new modus operandi for syllabus revision.

In 1981 a new modus operandi of syllabus revision was introduced by the C.E.D./J.M.B. (J.M.B., 1980).

1. Broad principles and basic procedure

- 1.1 The C.E.D. determines a rotation programme for syllabus revision in consultation with the J.M.B.
- 1.2 The C.E.D. allocates a certain subject to a Department which to their way of thinking is the best equipped for research in connection with syllabus revision.
- 1.3 The Department to which the subject is allocated, name a research committee, consisting of experts on the subject, to do the research.
- 1.4 The names of the Departments responsible for the different subjects are made known to universities and the non-white examining bodies, by the J.M.B.
- 1.5 The research committee must do the research in the time allowed by the rotation programme. It must also co-ordinate research results and hints by examining bodies universities and other institutions.
- 1.6 The proposals of the research committee should reach the institutions mentioned in 1.5 at least $2\frac{1}{2}$ years before the date set for introduction of the revised syllabus. Commentary on it should be given within three months.
- 1.7 The research committee consider all comments and they prepare a working document for submission via the C.E.D. to the Joint syllabus committee mentioned in paragraph 2.
- 1.8 The recommendations of the Joint committee is submitted to the J.M.B. via the C.E.D.
- 1.9 If the draft syllabus is accepted by the J.M.B. the C.E.D. is accordingly notified and the C.E.D. supplies, after the Minister has approved it, the J.M.B. and Education Departments for whites with the draft syllabus. This must happen at least one year before the introducing date set by the rotation programme.
- 1.10 The J.M.B. supplies all other institutions with the approved draft syllabus, after the minister has approved of it.

2. Joint Syllabus Committee

2.1 Composition

Joint Syllabus Committees referred to in paragraph 1.7 are to be appointed for each of the subjects from Groups A, B, C, D and E and the subjects from Group F which are presented on the Higher and Standard grades. The committees must consist of:

2.1.1 One representative from each examining body.

2.1.2 Three representatives from the J.M.B.

2.1.3 One representative from the private schools.

2.2 Chairman

The chairman of the Joint Syllabus Committee is appointed by the chairman of the C.E.D. in collaboration with the chairman of the J.M.B.

2.3 Function

The function of the Joint Syllabus Committee is to consider the working document of the C.E.D. research committee and to finalise the draft syllabus for submission to the J.M.B. via the C.E.D.

The Transvaal Education Department will be responsible for the Geography syllabus (Diepeveen, 1980). At the moment a new draft syllabus for Geography has been distributed among the different institutions for their comments.

(See Appendix A 15)

Conclusion:

This chapter showed that there was a drastic change in the content and control of syllabuses in the period 1973-1981.

South Africa received a new core syllabus for all Education Departments and examining bodies. The syllabus is being revised (1981) and will probably be introduced in 1983 or 1984.

PART II

GEOGRAPHY IN SELECTED COUNTRIES

In this section an effort will be made to give a brief account of the Education System in each country, the way in which syllabuses are changed and how their syllabuses compare with those of South Africa.

CHAPTER 5 - THE NETHERLANDS

General organization of secondary education

The Minister of Education and Science is responsible for legislation on education and for its implementation. The Education Council, instituted by law, is responsible inter alia for advising the Ministers on Bills, matters relating to curricula, reorganisation and renewal of education system and implementation of various laws.

Public and Private Education

"Public education" means education provided by the central and local authorities. All types of education provided by private bodies, whether denominational or not, come under the heading "private education". Education is based on the principle that parents should have the opportunity to allow their children to be given the education which best suits their way of life, their outlook or the teaching method which they prefer. It is therefore a general rule that private education is financed in exactly the same way as public education, with the result that the costs of maintaining private schools, too, are reimbursed by the authorities in toto. (Organization and structure of Education in the Netherlands, 1974).

Secondary education

Secondary education is governed by the Secondary Education Act of 1963. It includes the following types of schools:

- General secondary schools
- Grammar schools ("Pre-university" schools)
- Technical and vocational schools
- Other forms of secondary education

General secondary schools (AVO)

General secondary education is provided at lower general secondary, intermediate general secondary, and higher general secondary schools. All three types of schools are open to primary-school leavers. Lower general secondary schools (LAVO) provide a two-year course, but this may be incorporated in the first year or the first and second year of the course offered by lower technical and vocational schools. After taking the LAVO course, children may go on to MAVO schools or to lower technical and vocational schools.

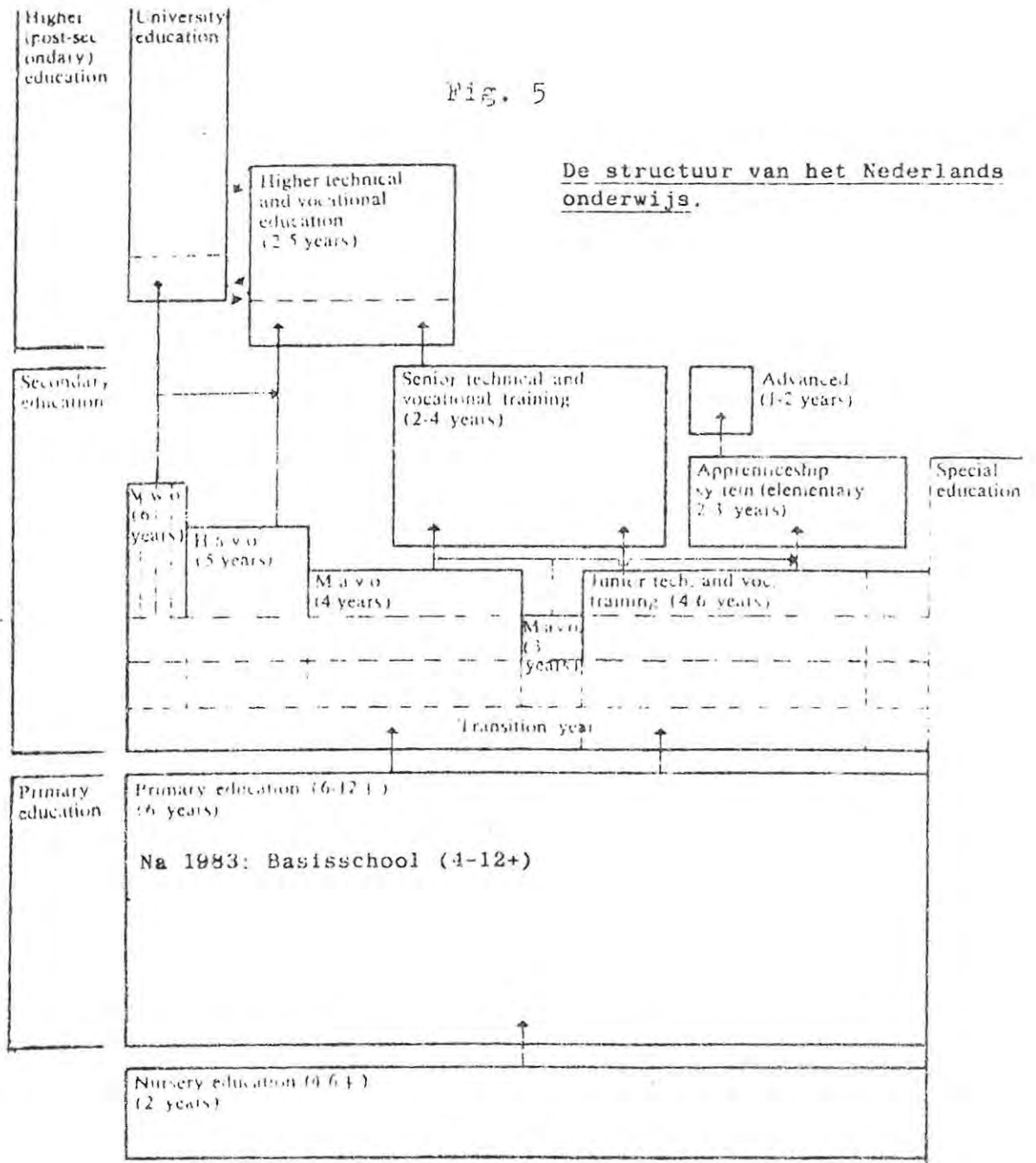
Intermediate general secondary schools (MAVO) have a four-year course. Some schools also offer a three-year course. A four-year MAVO certificate is a qualification for admission to the fourth year at a HAVO school, secondary technical and vocational schools, and to certain types of higher technical and vocational schools after a preparatory year.

Higher general secondary schools (HAVO) have a five-year course, which is also held at athenea, lycea and intermediate general secondary schools (MAVO). In these cases the course takes two years (fourth and fifth school years) and begins after three years' pre-university education or four years at MAVO school. Teacher training colleges also have two-year courses tying in with the fourth and fifth school years and preceding the teacher training course. A HAVO certificate is a qualification for admission to higher technical and vocational schools. (Organization and structure of Education in the Netherlands, 1974).

Pre-university schools (VWO)

Pre-university education is open to primary-school leavers and is provided at gymnasia, athenea and lycea all of which have a six-year course. The resulting certificate is a qualification for university entrance. (Organization and structure of Education in the Netherlands, 1974).

The following diagram gives a clear picture of the structure of education in The Netherlands.



Uit: "Education and Science"
Publ. Min. O&W, 1974.

(Koppen, 1981b)

Geography teaching in The Netherlands

In the Netherlands great importance is attached to "freedom

of Education", this implies that the authorities cannot compel any school to follow a certain syllabus. Syllabuses can only be prescribed to the so called "Rijksscholen" which are under direct control of the government. In practice, however, the other schools usually also follow the syllabuses of the "Rijksscholen." The examination is divided into two parts. Part One is the responsibility of the school. (Schoolonderzoek). Part two is an external examination set by the education authorities. (Centraal Schriftelijk examen aardrijkskunde - CSE - A). The CSE-A consists of a number of topics prescribed by the Ministry of Education. The number of topics prescribed differs for each examination: MAVO - 4; HAVO - 5, and VWO - 7. Each year one or more of the topics may be changed. Because the principle of changing topics every year caused numerous complaints it was decided to draft a new syllabus for the CSE-A (Koppen, 1981b). This syllabus will not be introduced till 1982 or later (Koppen, 1981a).

The syllabus for the "Rijksscholen" is compiled by special inspectorial commissions. These commissions are under the direction of a subject-inspector of secondary education. The Ministry of Education takes the initiative in the revision of a syllabus for the "Rijksscholen." The other schools can construct their own syllabuses but they can also get aid from the Foundation for syllabus development (Stichting voor de Leerplanontwikkeling (SLO)). The Advisory committee for syllabus development - Geography (ACLO-A) will in future provide helpful guidance to schools and the SLO, in connection with the construction or revision of Geography syllabuses. (Koppen, 1980). Geography forms an important subject in all the abovementioned schools.

Aims

The VWO examination has the following aims:

1. The social development of the pupil. The successful

candidate should at least have obtained a global knowledge of the content and skills which will enable him/her to approach geographical realities independently and to determine his/her attitude regarding the development of society and his/her milieu.

2. The preliminary scientific development of the pupil. The purpose of the course is also to help with the training of a preliminary scientific character. This implies that any basic knowledge of scientific methods in general and of geography in particular should be in the course.
3. The personal development of the pupil. It is also the purpose of the course to provide an opportunity for the development of individual preferences. Fieldwork provides an opportunity to realise such personal preferences.

Syllabuses

The Geography syllabus of the V.W.O. schools (Grammar or pre-university schools) will be compared with that of South Africa. In 1980 a new syllabus for V.W.O. schools was constructed, but it will not be introduced till 1982 or later. (Koppen, 1981). This discussion will thus deal with the present syllabus.

The V.W.O. (Voorbereidend Wetenschappelijk Onderwys) or pre-university schools offer like South Africa, a six year course after primary education.

The syllabus set for the V.W.O. schools must be completed in the course of two years, namely five and six.

The following syllabus⁺ was set for the 1980 V.W.O. (C.S.E. - Centraal Schriftelijk Examen) final examination.

Part 1 - Examination Content

In the final examination the knowledge and insight of the candidate regarding the following is tested:

⁺ Translation by the author.

- (i) Problems in Social Geography in the Netherlands, in relation to co-operation with Western Europe.
- (ii) The Social Geography of the U.S.A. and the U.S.S.R. and the significance of the physical background of the specific country, for the Social Geography.
- (iii) The Social Geography of an important Western European country or area with the accent on current matters.
- (iv) Social-Geographical problems of one or more developing areas.
- (v) A current Social-Geographical, or a physical topic.
- (vi) A Social-Geographical, or physical topic (country or area) to be studied individually by a pupil. The topic must not have been done in class during the last three years.

Part 2 - The written examination (C.S.E.) refers to:

- a) Five topics selected from the Social Geography of The Netherlands, in relation to co-operation with Western European countries.
- b) Two topics selected from Part 1 (ii), (iii), (iv) and (v).

The duration of the examination is $2\frac{1}{2}$ hours.

The topics mentioned under paragraph 2 are prescribed for each year by the Ministry of Education. The topics are published about six months before a candidate starts his fifth year. The topics for the 1980 May examination e.g. was published in February 1978.

For the 1980 examination the topics under Part 2(a) were:

1. Foreigners in the Netherlands
2. The citizen and spatial organisation.
3. South Western Netherlands as a development area
4. Settlement in The Netherlands
5. The Quaternary period and agricultural land use in The Netherlands.

Under Part 2(b) Belgium and the U.S.A. were prescribed.

Part 2 (a)

Topic 1 - Foreigners in the Netherlands:

- (i) Foreign workers and ethnic groups and their origin
pupils must be able to give meaning to the different
concepts of foreign workers and ethnic groups.
- (ii) Regional distribution - the pupil must have insight
in the distribution patterns - rural and local -
the pupil must be able to explain and describe the
spontaneous and induced distribution of people
- (iii) Reasons for stay in The Netherlands
- the pupil must know why they left the home country
and why they settled in The Netherlands
- (iv) Assimilation and integration problems
- the pupil must know the assimilation and integration
problems in connection with certain groups of
people and in general.
- (v) Significance for society and the economy in The
Netherlands.

Topic 2 - The citizen and Spatial organisation:

The pupil must have insight in the following aspects of
spatial organisation:

- (i) - objectives of spatial study
 - ditribution of settlement
 - citizens as individuals and groups
 - population structure

- (ii) - second and third notes⁺

⁺These notes refer to publications by the Ministry of
Spatial Organization. The second note was published
in 1965. The third note is also named the Orientation
note and is a more recent publication (Koppen, 1981c).

The pupil must know about

- the point of departure and aims of the Second note
- the point of departure and aims of the Third Note
- spatial organization on national level.

Topic 3 - South Western Netherlands as a development area

(Zeeland and the islands of Southern Holland)

(i) Origin and significance of earlier isolation.

The pupil must be able to describe and explain the origin and results of the increasing isolation in the previous century keeping in mind:

- the island characteristics
- the problem of accessibility
- the agricultural background of the region
- the relative low population density

(ii) The Delta plan

The pupil must know -

- the history and completion of the Plan;
- the advantages and disadvantages
- the pupil must be able to give a well-considered opinion on the problems of the Eastern and Western Scheldt.

(iii) Influence of Rotterdam and Antwerp

The pupil must understand the influence of Rotterdam and Antwerp on South Western Netherlands. The following must be kept in mind:

- communications
- opportunity for work
- overflow function (overloopfunctie)

(iv) Development at Vlissingen and Terneuzen

The pupil must have a knowledge of the rapidly developing significance of the industrial and port areas and he must be able to recognise the positive and negative influences of this area.

(v) Remaining structural change

The pupil must have insight in the remaining structural change. The following must be kept in mind:

- expansion of the recreation function
- change in the agricultural sector
- social change
- demographic change

Topic 4 - Settlement in The Netherlands

- (i) Town and city
 - function of the town in the past
 - typical town shapes
 - the function of the city before the industrial revolution
- (ii) Functions of settlements on local, regional and national level - The Central Place System
- (iii) The scope and distribution of settlements as a result of concentration and centralization.
 - the process of urbanisation and sub-urbanisation.
- (iv) Settlement problems
 - the social, economic and spatial causes of depopulation
 - the growth of towns as a result of sub-urbanisation and the social, economic and spatial influences of it.
 - the settlement in and departure from cities and the resultant problems
 - problems of the city and of renewal.
- (v) Policy of the authorities in the development of settlements
 - policy regarding growing nuclei
 - policy regarding small nuclei.

Topic 5 - The Quaternary period in The Netherlands and agricultural land use

- (i) Pleistocene deposits
 - Pleistocene deposits in chronological order and the circumstances under which they took place
 - the location of the abovementioned
 - some insight in the origin of inland ice.
- (ii) Holocene deposits
 - same as under (i)
- (iii) Quaternary landforms
 - location of the different landforms
 - Pleistocene landforms as well as the origin of pre-glacial, glacial and post-glacial landforms

- Holocene landforms in The Netherlands
- (iv) The relation to agricultural land use
 - significance of the Pleistocene and Holocene deposits for agricultural land use
 - the decreasing significance of the Quaternary deposits and landforms for agricultural land use because of technical developments in agriculture.

Part 2(b)

Topic 1 - Belgium

- elementary topography
- situation, physical condition, population and subsistence aids.

Special attention must be given to:

- demographic development during the 20th century , distribution pattern of the population and the language question.
- development of agriculture in the provinces West Vlaanderen and East Vlaanderen.
- the Antwerp - Brussels axis
- the Walloon industrial axis
- the traffic

Topic 2 - United States of America

- elementary topography
- basic knowledge of situation, physical condition, population, subsistence aids and socio-political system.

Special attention must be given to:

- physical background in relation to spatial organisation
- the influence of occupation, since 1600, on physical background
- change in the distribution pattern of the white population since 1776 and of the black population since 1863
- the reasons for social and economic change and the result of it on the North East, South East, Mountains and Deserts

The same basic syllabus is used for MAVO and HAVO schools. In the case of the MAVO course the following are left out:

1. Foreigners in The Netherlands
2. (iii) The Second note

Instead of Belgium and the U.S.A., the United Kingdom is studied.

The other topics are not done in the same detail as for HAVO and VWO.

In the HAVO course the following are left out:

1. Foreigners in The Netherlands
2. Only Belgium is done under paragraph 2 (ii)

We can say that the content of the Netherlands syllabus differs drastically from that of South Africa in standards nine and ten. The first part of the syllabus is examined internally but for the second part an external examination is set. In the first part of the syllabus the accent is on social geography. Here the social geography of the Netherlands as well as that of Belgium and the United States of America is prescribed. Physical geography is not compulsory in the fifth year. The teacher has a choice between a social-geography or a physical-geography topic. The topic is left to the teacher to decide. The pupil also has to study either a social feature or physical feature on his own. This is probably like the assignment our pupils do in standards six to nine.

In the second part of the syllabus, which is examined externally, seven topics are prescribed by the Ministry of Education. All seven are compulsory.

The following is a comparison between the Netherlands VWO syllabus for 1980 and the South African H.C. Senior Secondary Syllabus. As the complete VWO syllabus is included in the text (p 107) reference will only be made to the different topics. The syllabus is taken over the last two years of study in the school and the first part of it is examined internally by the school probably in the fifth year.

At present the VWO syllabus is being revised and the new draft is being discussed by the different institutions. (1982)

The Netherlands

VWO Syllabus (See p. 107).

South Africa

Comments

Part 2(a)	Topic 1	Not done - except probably in standard eight under population movements, paragraph 2.1.3	A valuable structural model of study for the teacher and it could be valuable for S.A.
	Topic 2	Not done	Should be difficult for pupils especially on MAVO level
	Topic 3	Majority can be done in standard eight paragraph 3.1(a)(v)	Approach slightly different from that in S.A.
	Topic 4	Done in standard 10 but not as localised	
	Topic 5	Partly done in standard nine - emphasis not the same	
Part 2(b)	Topic 1	Not done	Belgium is not prescribed but the same approach could be followed with any country.
	Topic 2	Can be done in standard nine - paragraph 3.1(a)(iv).	Approach not the same as in S.A.

CANADA

In Canada, education at all levels is basically a responsibility of the provincial governments. In co-operation with the provinces, however, the federal government plays an important role through its support of post-secondary education, purchase of manpower training programs for adults, and education programs for special groups such as children of service personnel in Europe, certain Indian and Inuit children, and inmates of federal penitentiaries. Besides the provincial education systems, there are also a number of private schools in Canada.

The school system in Canada has three levels: pre-elementary (nursery and kindergarten), elementary, and secondary. All three levels of education vary with each provincial education system.

Education in public elementary and secondary schools is free - financed by local property taxes and provincial government grants. Within the public school system, accommodation is also made for separate (usually denominational) schools which are similarly financed through taxes and grants. Most of these separate schools are Roman Catholic. About two per cent of Canada's elementary and secondary students are enrolled in private fee-charging elementary and secondary schools administered by persons or corporations rather than provincial ministries of education. (Canada Fact Sheet : Education, 1975).

Regional Characteristics of Schools Systems

The provinces, though independent in educational administration, may be grouped regionally for a better appreciation of their education systems. A lot of detail is given to understand where Geography fits in.

Atlantic Provinces:

- (i) Newfoundland
- (ii) Prince Edward Island
- (iii) Nova Scotia
- (iv) New Brunswick

Grade organization is the same in Nova Scotia, New Brunswick and Prince Edward Island : elementary school to the end of grade 6; junior high school from grade 7 to 9; and senior high from grade 10 to grade 12. In Newfoundland, elementary school may be up to grade 6 or up to grade 8 depending on the school, central high from grade 7 to grade 11, regional high from grade 9 to grade 11, there are also some junior - senior high schools from grade 7 to grade 9 and from grade 10 to grade 11.

Newfoundland and Labrador

In Newfoundland and Labrador decisions on the change of a syllabus are the responsibility of the Division of Instruction in the Ministry of Education. Changes are authorised by the Minister of Education but are recommended by the Director of the Division of Instruction and based on advice received from respective subject area consultants and teachers' committees (Regular, 1980).

In the 1980 - 1981 Programme of studies for Newfoundland and Labrador, Geography appears under the heading of Social Studies. In the 1979 - 1980 issue the following appear under the heading Social Studies:

"The Social Studies Programme comprises History, Geography Economics and current events. Its overall goal is to foster personal and civic development by exposing students to selected knowledge of the world and its peoples and by helping them develop attitudes and abilities necessary for informed decision-making as citizens."

The Geography syllabuses for grades seven to eleven is then given separately under the heading Geography.

New Brunswick

In New Brunswick the Provincial Department of Education, assisted by a small committee of practising teachers and university representatives, are responsible for the revision of a syllabus and the construction of it. (New Brunswick, 1980). In the senior high school in this province Geography can be taken as a choice subject. It is strongly recommended that pupils take at least one year of Geography 102 (grade 10) or Geography 112 (Grade 11) before enrolling for

Geography 122 (grade 12). Each of these grades has been constructed on the basis of five fifty-minute periods per week. (New Brunswick, 1979).

Nova Scotia

The official geography programmes (as are the other school programmes) in Nova Scotia are developed through the Curriculum Development Section of the Nova Scotia Department of Education. A consultant is responsible for seeing that adequate programmes are designed for use in the schools, and the consultant is also responsible for the selection of the best available materials to meet the needs of the programmes. The work of a consultant in social studies involves the designing of programmes, developing of guidelines, selection of materials, developing of materials, some aspects of teacher pre-service and in-service training and a number of related things, to all areas of social studies, including elementary social studies, secondary geography and history (Grades 7 - 12 levels); civics program (Grades 7 - 9 levels); political science, economics, sociology, law, and modern world problems (in selected Grade levels from 10 - 12); Multicultural studies and Canadian studies which extend through the total school programming. (Redden, 1980).

Decisions regarding syllabus changes are based on a number of factors including student needs, immediate and long range; provincial needs and concerns; national needs and concerns; international needs and concerns. The problem is to balance all of this in terms of the total school time available, namely 195 days per year for 13 years (including primary level for children age 5); and in terms of the many programmes available in areas such as English language arts, mathematics, science, French, music, art, health, and physical education, home economics, and industrial arts.

When a decision is made to change a course, a task force made up of teachers and other educators who specialize or have an interest in the field of study under consideration, is called together, and during 6-10 days of

meetings over a period of time, the new programme is designed and written in draft form.

The consultant in charge then puts the information into a more complete form and it is sent to several higher levels within the Department for further consideration and comments. Any requested changes are made and the guidelines are finally edited and typed for distribution to the school systems.

Sometimes an individual person may be seconded to write guidelines, and occasionally the consultant may do the writing.

When the guidelines are finished and ready for distribution an in-service seminar (or a number of in-service seminars) may be held to introduce the guidelines. After that, local systems take on the responsibility of seeing that the guidelines are followed and that sufficient help is given to teachers to ensure success. In reality, the degree of success varies greatly from system to system, depending on the resource people available, the background and interest of the teachers, local needs and priorities. (Redden, 1980).

Central Provinces

Quebec

School organization in Quebec is as follows:-

At Primary level there are two cycles. The first cycle is for children six to nine years of age and the second cycle from nine to 12 years. The secondary school is organized in the same way. The first cycle is from 12 years to 15 years and the second cycle from 15 to 18-year-olds. The first cycle of the secondary school stretches over three years and the second cycle over two years. (Quebec 1979, pp.29 - 31).

In the first cycle of the secondary school General Geography is offered in the first year (1 block, 3 periods, of 50 min. = 150 min. per week) and National⁺Geography

is offered in the third year (1 block, 3 periods of 50 min. = per week). No Geography is offered in the second year. In the second cycle National Geography is offered as one of the optional subjects. A pupil may take from 1 - 2 blocks, per year or over the two years as the case may be. (Quebec, 1979, pp. 147 - 150).

Ontario

Ontario has a 13 - grade system, with provision also for kindergartens and pre-school enrolment. One of the latest developments is the employment of a credit system to cover the former grades nine to 12 leading to the secondary-school graduation diploma. This provides a means to more flexible schedule patterns with a view to greater freedom of pupil choice within an expanding range of subject offerings, even to the creation of individual timetables for pupils. A credit is defined as a course successfully completed, normally after 110 to 120 hours of scheduled time. The diploma (Grade 12 standing) is awarded after successful completion of a minimum of 27 credits. Grade 13 counts as senior matriculation for admission to university, including teachers' colleges. (Reference Papers, 1973).

Curriculum guidelines are changed when, through a formal or informal review process, a need for change is identified. The normal approach is to appoint a representative committee of teachers, academics, faculty education staff, etc. with a province-wide distribution and to carry on the work over a year or so to enable those to be affected to comment on needs. Ultimately the Ministry of Education authorizes a guideline after validation of one or more drafts by persons in the field. The guidelines are quite flexible in content. This leaves a good deal of the decision-making about course content at the school level to local authorities. (Goddard, 1980).

Prairie Provinces

Manitoba

In Manitoba public schools (Kindergarten through Grade 12)

promotion is the responsibility of the local school authorities. There has been a movement away from final examinations and towards continuous evaluation. To gain entrance to a University a student must present evidence that he has standing in at least three examinations of the High-school Examination and school standing in at least two others. (Reference papers, 1973).

Alberta

The education system in Alberta, like most of the other Canadian provinces consists of a 12 - grade system. Education is under constant review of the Provinces' Commission on Educational Planning. (Reference Papers, 1973).

Geography does not appear as a separate subject on the Alberta curriculum, except at the high school level (Grades 10, 11, and 12). (Ledgerwood, 1980). There are two Modular Units for Geography in the Social Sciences series. Modular Unit 1, consists of Local and Canada studies and Modular Unit 2 comprises World Patterns. As an introduction to these two units there is an Introductory Unit consisting of: Skills and Concepts and Supplementary References.

Saskatchewan

Saskatchewan has recently introduced its plan for a re-organized school system. The traditional 12 grades have been replaced by four divisions, each consisting of three years of school. In Divisions I and II, the principle of non-grading has been adopted. Division III programmes have been planned to meet the special needs of the 13 - 15 age group. (Reference Papers, 1973).

Saskatchewan does not offer separate Geography courses in grades I - IX. Geography concepts are integrated in the total Social Studies programmes for these grades. In Division IV(Grades X - XII) they have three Geography courses - all of which are optional courses.(Cook, 1980).

British Columbia and the territories

British Columbia

Details on education programmes in British Columbia are similar to those of the most advanced programmes in other provinces. There is the usual 12 - grade system. (Reference Papers, 1973).

Curriculum changes are generally made on the basis of an assessment of the current programme. The decision to have an assessment or revision is made within the Ministry of Education. A regular schedule for change has recently been developed for the provincial school system. The next change in the Geography curriculum will be made within the next two years, following completion of the revision of the general social studies programme curriculum. (Daneliuk, 1980).

North West Territories

The secondary schools (Grades 10 - 12) follow the course of studies prescribed by the Alberta Education Department.

There is no Geography syllabus for the elementary schools, as it is integrated in Social Studies. Only in Grades 10 - 12 is there a separate course for Geography.

An effort is made to incorporate the geographical knowledge, concepts and precepts embodied in the languages, experience and cultures of the different pupils, most of whom are Dene (Athapashan speakers) or Inuit (Eskimoan speakers). This is especially true in the Primary Division, but also in the later years, and reflects a commitment to locally-based and locally-controlled curriculum development. (Diveky, 1980).

Yukon

Yukon Territory follows the curriculum prescribed by British Columbia (Ferguson, 1980).

Conclusion:

Except for Newfoundland and Labrador (11) and Ontario (13) all the provinces in Canada have a 12-grade school system, which corresponds with that in South Africa. Geography is usually taught as part of a social studies programme and only becomes a separate subject from more or less grade 10. The only provinces to set an external examination at the end of grade 12 are British Columbia and New Brunswick. These examinations are not compulsory. The British Columbia paper is written for a prize of a 1 000,00 dollars. The winner has to enrol successfully at a recognised post-secondary institution.

In 1978 Dr. F.G. Jones conducted a survey of "Geography as a Social Studies Classroom experience in Canada." (Jones 1980) The study is designed to establish the current status of geography teaching in Canada and to indicate possible directions for future development.

A questionnaire was developed around five major areas:

1. Education and teaching experience.
2. General information concerning involvement with geography programmes.
3. Content of geography programmes.
4. Method of geography teaching.
5. Materials used in geography classrooms.

The questionnaire was sent to 102 school districts in all the provinces of Canada. Eighty-four school districts replied, representing a response rate of 82%. The following summary has been taken from the article:

"The response rate to this questionnaire does provide a substantial overview of what is being done within the teaching of geography at the Elementary and Secondary levels of schools across Canada. Most teachers have either a Bachelor of Education or Bachelor of Arts degree that contains at least some geographic training. The major encounter with geography as a discipline occurs at the undergraduate level although many teachers did indicate a prior contact with geography. Only 30% took geography as a component of a Social Studies program. This would seem to indicate that teachers receive their training in geography largely as a Social Science, and at the very least, the incorporation of geography into a social studies program for classroom use may be an incidental integration overall at this time. This outcome could contain serious ramifications for the teaching of geography in Canada, unless a more concerted attempt is made on the part of the various Social Science and Social Studies departments at teacher training institutions, to combine their efforts in training teachers, with the requisite skills and knowledge of the discipline. Geography contributes in a substantial way towards the curriculum in Social Studies. This is particularly true at the upper Elementary and Junior High School levels. However, respondents indicated that geography was not a strong component of the Social Studies program at the Primary level (Grades 1- 4). School districts provided the bulk of assistance to the teachers largely in the form of materials.

Content emphasis appears to be on presentation of facts and conceptual schemes, with the organization around understanding and application. Only one-third of the respondents developed classes that stressed geographical method.

Use of a wide variety of teaching methods was indicated. These included inquiry, exposition, and in some instances, rote memorization. Field trips also formed part of classroom teaching strategies. Integration of geography with Social Science content was attempted in a large number of cases.

Textbooks and other commercially prepared materials form the basis of most classroom learning. However, little guidance was provided for possible methodological uses of these materials. Typically, maps and globes, films, filmstrips, overheads, and graphs and charts provide the working tools for most students studying geography. Surprisingly, models, and especially simulations, appear to be used most infrequently."

Aims

The following are aims stated in the syllabus preamble of a few selected provinces. Some provinces do not have a specified statement of aims.

Ontario Senior Division Geography

Physical Geography:

Aims

Courses in physical geography should give students opportunities to:

- develop a conceptual framework for organizing information about the physical world;
- analyse systematically the physical properties of the biosphere (the lithosphere, the atmosphere, and the hydrosphere);
- identify patterns that reveal the existence of order in the physical and biotic world;
- understand processes that help explain the existence of order in the physical and biotic world;
- evaluate theories that attempt to explain the properties of, and forces acting within, the biosphere;

(Curriculum guide for Senior Division Geography, Ministry of Education, Canada, 1978, p. 9)

- evaluate the effects of specific components of the biosphere on human life in selected locations;
- evaluate the effects of human activity on the biosphere in selected locations;
- practise and improve skills in field work and in the use of the tools and techniques of geographic investigation;
- examine critically a variety of attitudes to the physical world: for example, people as users, exploiters, managers, conservers, or conquerors of their environment;
- reaffirm or revise their own attitudes and behaviour towards the physical and biotic world.

Human Geography:

Aims

Courses in human geography should give students opportunities to:

- recognize that all human use of the earth is subject to the opportunities provided and the constraints imposed by the natural environment;
- examine a selection of the dynamic processes by which people occupy and organize the earth's surface;

- develop criteria for categorizing the distinctive imprints that various human groups make on their area of the earth;
- account for differences in the ways of life that can be identified from one part of the world to another; and
- evaluate various environments and ways of life (including their own) with the help of increased factual knowledge and advanced intellectual skills.

(Curriculum guide for Senior Division Geography, Ministry of Education, Canada, 1978, p. 14)

Regional Geography:

Aims

Courses in regional geography should give students opportunities to:

- add to their knowledge of the world by analysing the interaction between populations and their environments;
- practise skills of interpretation by using a wide variety of raw data, from a description of a place found in literature to the more traditional types of data such as maps and statistics;
- evaluate the significance of the physical background in determining the character of a region;
- recognize the influence of social, political, economic and cultural factors on the development of regions,

(Curriculum guide for Senior Division Geography Ministry of Education, Canada, 1978, p. 14)

- develop the synthesizing skills necessary to interrelate the different factors that combine to give a region its identity;
- test the validity of the criteria that they or others select to separate a region from its neighbours;
- develop an understanding of the individuality of each region and an acceptance of the differences from place to place;
- appreciate the advantages and difficulties that regional differences give rise to in the global village.

Saskatchewan - Geography Grades X - XII

"The intent of this course in geography is to acquaint and explain to the student the basic distributions of physical and cultural phenomena over the earth's surface. Through analysis of these distributions, and some of the societal processes, an understanding of the environment, society and economy of the different regions of the world should be achieved. Further the study of geography should lead to an appreciation of the fact that the world is one, that no region exists in isolation, that, today, all parts of the world are interdependent."
(Saskatchewan, 1969).

Nova Scotia - Geography Grade 10

Aims

The main aim of the course is to develop in students an awareness of the processes that have contributed and continue to contribute to the shaping of our physical environment, both at a local level and across the globe. In addition, the course aims to show how the use of maps (large and small scale), aerial photographs, field research and simple measurements are effective means for studying these processes. Finally, the course illustrates the close interrelationship between man and his environment, and constantly emphasizes the significance of man and his activities.

Objectives

Throughout their junior high geography programs, students should have developed a working knowledge of basic cartographic techniques (map construction, graphs, use of topographic maps, etc.) together with a basic terminology and vocabulary associated with physical landforms. If this has not been accomplished, additional work in these areas will be required.

The objectives which follow provide more specific direction for teaching this course.

1. To develop the student's understanding of the physical forces and processes that shape the face of the earth.
2. To understand the complexity and interdependent nature of those forces and how to classify and identify them.
3. To recognize that spatial order exists in the formation of the world's natural regions and to understand how these patterns have developed.
4. To show that man is an active and integral part of the environment with the ability to modify and be modified by the nature of the environment.
5. To improve the student's ability to read and analyze topographic maps.
6. To develop skills necessary for the accurate interpretation of aerial photographs in conjunction with topographic maps and real environments.
7. To appreciate the value of field work and the use of simple quantitative measurements toward understanding physical landscape processes.
8. To develop a scientific approach to environmental problems and to show the need for a comprehensive landscape analysis in solving these problems.
(Youth Education Teaching guide No. 39, Halifax, 1979, p. 30)

Syllabuses

The British Columbia (B.C.) Geography 12 syllabus was chosen for comparison because only British Columbia and New Brunswick offer external examinations. The B.C. Geography 12 examination is, however, not a compulsory examination (See appendix E2). The B.C. syllabus is included in appendix D2. It is compared with the South African Standard 10 H.G. syllabus. There are two approaches which can be followed in the Geography 12 course. The first is systematic and the second is a unified organization that integrates the two parts. In this comparison the systematic approach will be used.

British Columbia - Canada Geography 12(See appendix D2) (page 774)	South Africa Standard 10 - HG	Comments
Part I - Unit A 1	Not done	It is done in the Standard eight syllabus, paragraph 1.2.2
2 (a)	Not done	In standard eight, paragraph 1.2.4
(b)	Not done	In standard eight, paragraph 1.2.5
(c)	Done under soils, paragraph 1.2.5(iii)	Also done in standard nine, paragraph 1.3
(d)	Done paragraph 1.2.3	
3	Not done	Done in standard eight paragraph 1.2.4
Unit B 1	Done in standards eight to ten	
2	Done paragraphs 1.1.2(ii)	
3	Not done	
4	Not done under the same heading and probably not in the same detail	
Unit C 1 (a)- (d)	Done but not always under the same headings	No such section in the S.A. syllabus - do the same under Geomorphology
(e)	Partly done in standard eight	
2 (a)	Done but not in the same detail	
(b)	Partly done	

British Columbia - Canada
Geography 12

South Africa Standard 10 - HG

Comments

Unit D

Not done

Done in standard nine

Part II

Done in standards eight to ten

In S.A. the approach is different
see questions 4 and 5 (Appendix D2)

THE UNITED KINGDOM

Education in the United Kingdom

Curricula

In England and Wales the secular curriculum in maintained schools is the responsibility of the local education authority, or in the case of voluntary aided secondary schools, of the schools' governors. In practice there is a very high degree of devolution to head teachers, particularly in nursery and primary schools. Her Majesty's Inspectors of Schools are responsible for the inspection of all schools including independent schools. They review and report on the content and value of the education provided and are available as advisers. Local education authorities also employ inspectors to guide them on maintained schools. Further guidance and encouragement for school-based research and development is available to teachers through the Schools Council for Curriculum and Examinations. The council, an independent body representative of all educational interests, acts as an advisory body and carries out research and development work on curricula, teaching methods and examinations in primary and secondary schools.

Broadcasting is a major resource for school teachers - about nine out of ten schools can receive television, and almost all have radios. Nearly all primary schools and some seven out of ten secondary schools use educational **broadcasts**. Relaxation of copyright for educational purposes now enables schools to record and replay programmes to pupils and greatly helps their efficient and flexible use. Schools co-ordinate different methods of audiovisual presentation, including (in addition to television, radio and tape recordings) films, colour slides, wall charts, maps and models. The BBC's "Radiovision" programmes for schools use, for example, colour film strips in conjunction with a tape recording of the broadcast, and a similar technique is used in the

support activities provided with some Independent Television schools broadcasts.

The Council for Educational Technology for the United Kingdom and the Educational Foundation for Visual Aids advise all bodies connected with education (and with training in industry and in the services) on the use of audio-visual aids. (Education in Britain).

Curricular Innovation

The schools' freedom to frame their own curricula has facilitated a rapid increase in study and experiment, partly stimulated by the Schools Council and other organisations. The general purpose is to adapt the curriculum to the everyday life and needs of children and young people.

The rapid advance of knowledge, social change, technical progress and new understanding of children's emotional and intellectual development have encouraged changes in the content and methods of teaching.

Among the most clearly observable general trends have been the increased emphasis, particularly for younger children on "learning by doing"; the efforts to reduce or modify "streaming" (grouping according to ability) in such a way as to minimise its ill effects on children placed in a lower stream; and the increased importance attached to motivation. At the same time greater use is being made of new educational aids produced by technical progress.

School Leaving and Examinations

Over the past decade there has been a large increase in the number of pupils staying on at each age beyond the minimum school-leaving age, which was raised from 15 to 16 in 1972.

There is no national school-leaving examination in England and Wales, but secondary school pupils may attempt exami-

nations, in various subjects, leading to the Certificate of Secondary Education (CSE) or the General Certificate of Education (GCE). The CSE is designed for pupils completing five years' secondary education and is normally taken at the age of 16. The highest grade in the CSE (grade 1) is widely accepted as being of the same standard as at least grade C at GCE "Ordinary" level. The GCE is conducted at "Ordinary"(O) and "Advanced" (A) levels. Normally candidates taking "O" level are about 16 years of age, although some take it earlier, at 15. (Education in Britain).

The C.S.E. system is characterised by a number of features:

- (1) The system is teacher-controlled. Although there are representatives of the 14 Regional examining Boards, local education authorities, Area Training Organisations, the actual conduct of the examinations is done by committees of serving teachers (Evans, 1975).
- (2) The Examining Boards adopted a flexible approach by offering three options to teachers:
 - (i) Mode 1 - external examinations based on syllabus set by the Boards.
 - (ii) Mode 2 - the Boards set examinations on syllabuses devised by the schools.
 - (iii) Mode 3 - the syllabuses and examinations are determined by the schools. The Boards only do external moderation of these (Evans, 1975).

The C.S.E. examination was introduced for the average and slightly below average pupils. The **brighter** pupils, about 20%, take the O-level course (Evans, 1975).

Geography teaching in the United Kingdom

As there are 14 Regional Examining Boards in the U.K. it would be impossible to deal with every one and to include material from each. An effort will however be made to include as much of the overseas material (sylla-

buses and examination papers) as possible. Before dealing with the syllabuses it is worthwhile looking at Graves' (1971) answer to the question "What does geography as it is taught in the United Kingdom offer in content?"

1. "It offers descriptions of areas at home and abroad which are informative about the physical setting and the ways of life of peoples in those areas, and how the ways of life may be related to some major physical influences.
2. It introduces pupils to the scientific study of
 - (a) Natural landscapes
 - (b) climates and
 - (c) the relationships between climate, soils and vegetation
3. It initiates students into the study of certain spatial aspects of man's activities on earth by studying such topics as settlement patterns, the functional zoning of urban areas, the localization of industry, urban, fields of influence, and so on."

The depth and extent to which this content is studied depends on the pupils for whom it is intended.

The "A"-level course in the U.K.

The "A"-level course is usually taken at the age of 16 - 18. It can more or less be compared with the South-African Standard 9 and 10 HG course. The course can be taken over two or three years - the usual length however is two years. Syllabus content can be studied in much greater depth than in South Africa. It is a three subject course in comparison with the six subjects in South Africa. According to Graves (1979) the "A"-level has eight 40 minute periods per week for each subject.

A problem created by the "A"-level course is the overlap between the final year and first year university. In South Africa the problem does not exist because it is impossible to go into any depth as the syllabus is too long. The major task of the "A"-level course "is to train students in skills of analysis, to place the

burden of thinking upon the learners in group tutorials, and to emphasize personal pupil responsibility for reading and acquiring the concrete data to support the process of thinking." (Hall, 1976p. 200). The ideal of the "A" level is to have a student; as opposed to pupil. **It is harder to do this in South African schools because less time is available for individual subjects.**

Because the "A"-level is an advanced course pupils find it sometimes difficult in changing from the O-level to the A level. In South Africa the problem is the **transit from standard seven to standard eight.**

The "A"-level course is not without its problems and there are rumours of change. In the near future a new "normal" level (N) and "further" level (F) examination system may be introduced. "This scheme provided for an eighteen plus examination based on a normal programme of five subjects, two of which might be studied in greater depth. Whilst the 'normal' level would secure breadth, the 'further' level would allow limited scope for specialisation." (Evans, 1975, p.94).

The General Certificate of Education (G.C.E.) O Level course

The "O"level examination is usually taken at 16 although some pupils take it at 15. This is a more advanced course than the C.S.E. and only the above average (about 20%) pupils sit for this examination.

The following G.C.E. "O" level syllabus gives an indication of the work done in this course. For other "O"level syllabuses and examination papers see Appendix E3

The Certificate of Secondary Education (C.S.E.)

This course is as mentioned earlier for the average pupil i.e. about 80% of the 15 to 16 year olds. There are three types of examinations - modes 1,2 and 3(see p. 133)

The mode 3 examination is an internal examination based on a syllabus devised by the school. It is externally moderated. It is interesting to note that the mode 1 and mode 2 examinations are more popular. This is probably so because teachers prefer external syllabuses and examinations or at least external examinations. For further details the reader is referred to an article by Fred Martin (1980) on "Continuous Assessment for the C.S.E."

The Certificate of Extended Education (C.E.E.)

This course was introduced "for those for whom a 2 A - level course is unsuitable and who could be better occupied with a more mature learning task than C.S.E. or "O"level retakes" (Hall, 1976, p.216). The examination is usually taken at the age of 17.

The following diagram from Hall (1976) gives a clear picture of where the different courses fit into the picture.

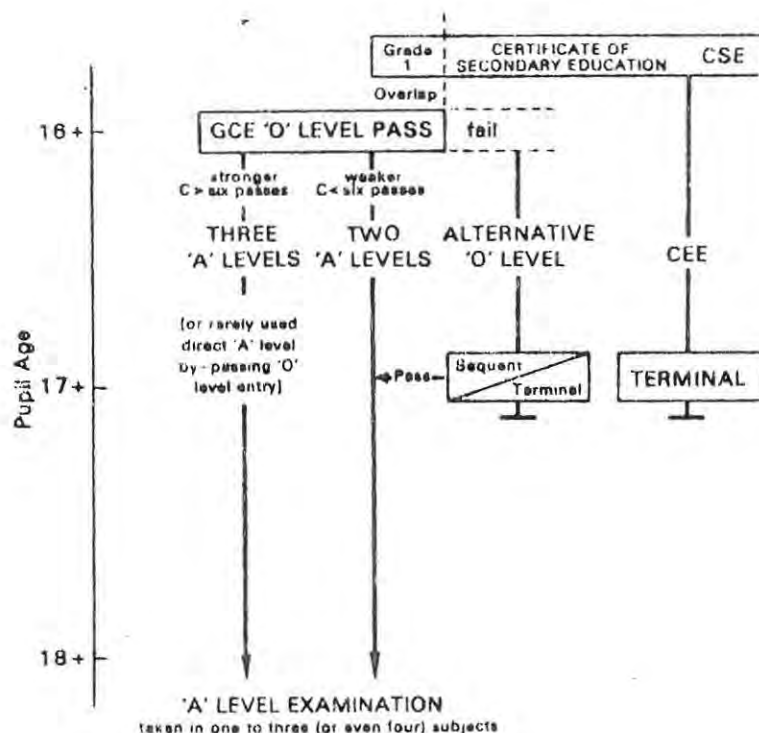


Fig. 6

Selected aims from examining boards

The Associated Examining Board (AEB)

G.C.E. "A"-level syllabus for 1982

"The aims of the syllabus are to enable the candidate to:

- (1) Understand geographical concepts;
- (2) appreciate the dynamic nature of geography, both in time and space;
- (3) acquire techniques and develop skills in the analysis and interpretation of varied types of geographical source materials and to make inferences from available evidence;
- (4) apply geographical methodology towards an appreciation of present day problems on varying scales.

The objectives of the examination are to test the candidates

- (1) "Knowledge and understanding of basic geographical concepts and principles;
- (2) ability to analyse and interpret data such as statistical information, maps, photographs and detailed studies in the application of general geographical principles to particular situations;
- (3) ability to apply geographical skills and techniques and in particular to use such skills in carrying out field investigations and in analysing the **results** of such investigations." (AEB) A level syllabus 1982)

From the above it is clear that in the A-level the emphasis is on knowledge of the basic geographical concepts; on analysis and application of skills, principles and techniques and on the interpretation of data. This is what is expected of Standard ten Higher Grade pupils in South Africa where in the Standard Grade the emphasis is mainly on knowledge of facts.

When the aims and objectives of a C.S.E. examining board are compared with the above the approach of each to the examination is very clear.

The following are the aims and objectives set out by the Associated Lancashire Schools Examining Board. (C.S.E.)

"Aims

The examination will be designed to test the following abilities in conjunction with the subject content of the syllabus:

- (i) Basic factual knowledge of terms and conventions used in Geography.
- (ii) Locational knowledge of the major features of the physical and human geography of the British Isles as well as a more detailed knowledge of the specific topics/regions selected for study from the options provided.
- (iii) Knowledge based on personal observations in the field of particular aspects of geography.
- (iv) The ability to understand geographical information presented in such varied forms as maps, writing, statistics, diagrams and photographs.
- (v) The ability to organise and present geographical information in writing and in maps."
(A.I.S.E.B., C.S.E. syllabus, 1981).

Here the emphasis is on the recall of facts. The pupil must have a knowledge of the basic facts, a knowledge of the location of major physical features, a knowledge based on observations, the ability to understand information, the ability to present information in writing. This is what we in South Africa expect of our Standard Grade pupils in standards eight and nine.

Between these two is the GCE "O"-level syllabus, where the emphasis is more or less evenly balanced between factual knowledge and application and interpretation of facts.

The following are the aims and objectives of the Joint Matriculation Board "O" level examination in Britain.

"1. Knowledge and abilities to be tested

(a) Knowledge

- (i) Locational knowledge of the major features of the distribution of land and water, of the relief and land forms, of climates and vegetation, of the major types of economy, and of population on a world scale. A more detailed knowledge is expected of these features in certain selected areas including

especially the British Isles.

- (ii) Basic factual knowledge of geographical terminology and conventions, and of the basic processes responsible for the shaping of the physical and human landscape.
- (iii) Knowledge based on the study in the field of particular aspects of geography.

(b) Comprehension and application

The ability to understand and interpret geographical information presented in writing, in the form of statistics, maps, diagrams and photographs, and information observed in the field. The ability to synthesise geographical information and to use it to draw conclusions of geographical validity.

(c) Clarity of expression

The ability to organise ideas and statements. The logical presentation of geographical information, in context, in writing as well as in maps and diagrams." (J.M.B. "O" level syllabus, 1981).

It is stated in "Regulations and Syllabuses 1981" of the J.M.B. that marks allocated in the examination as a whole will be divided as far as possible as follows:

Knowledge .	40 - 45%
Comprehension and application	55- 60 %

Here the emphasis is slightly more on comprehension and application than on knowledge. In the C.S.E. examinations it is the other way round. This can probably be compared with our (S.A.) standard eight and nine Higher Grade examinations.

For the sake of interest the aims and objectives of the West Midlands Examinations Board are also included.

"Aims

To involve and direct the pupils' interest in:
the evolution of the earth by physical forces and the constant modification of the landscape by natural processes;
man's development of the earth's natural resources with his consequent industrial and economic activities;

man's progressive adaptation to, and inter-relationship with, his environment;

the spatial patterns, both natural and man-made, found on the earth's surface.

Objectives

To enable pupils to:

recall specific facts relevant to the syllabus;

demonstrate the ability to comprehend and interpret common types of geographical source material both primary and secondary in nature, including photographs, maps, statistics, graphs and diagrams;

show the ability to recognise simple geographical relationships and be able to make an analysis of the underlying factors concerning these relationships;

demonstrate by logical reasoning the ability to relate particular cases to known patterns;

evaluate and compare material diverse in content and presentation;

demonstrate where appropriate by use of practical work/field work the ability to observe selectively, record accurately and make simple interpretations of a geographical nature." (W.M.E.B., C.S.E. Syllabus for 1981).

From the above it can be seen that the examining boards are much more explicit in the statement of aims than in South Africa.

Syllabuses

Selected syllabuses from three examining boards (see appendix E3) will be included, but only the A.E.B. "A" level syllabus will be discussed. The A-level course may extend over two or three years and the final examination is taken at 17 - 19 years. It is important to examine the method of syllabus revision in the United Kingdom. In the U.K. there is no centrally determined curriculum for schools. There are various examining boards which draft syllabuses and set examinations on them.

"The major curriculum decisions are taken by individual school principals in relation to the perceived

needs of the pupils and the school as a part of the community. Appropriate heads of department of the various subjects or subject groupings in the school determine the syllabus and its change for their given subject(s). Again depending on the school, such change may or may not be made in consultation with the other assistant teachers in any department. Although there is a large measure of common ground in the content and methods adopted in the range of subjects taught in our schools, there is, therefore a significant element of individuality in approach, and syllabus change and its associated implications are handled in different ways in different schools." (Shaw, 1980)

The external or public examinations are administered by the different examining boards. The syllabuses for these examinations are compiled by committees appointed by the specific board. A brief look at how syllabus change takes place in some examining boards will give a good overview of the whole system of syllabus change in the U.K.

Northern Ireland:

Change of examination syllabuses is in the hands of Board-appointed subject panels composed of nominated representatives of teachers and institutions of higher education. Decisions to change syllabuses are taken in schools and examining boards, but they are not the only decisionmakers. "The Northern Ireland Schools Curriculum Committee, now replaced by the NI Council of Educational Development, has been initiating and supporting curriculum change as well as facilitating implementation of Schools Council Curriculum projects in Northern Ireland." (Shaw, 1980). There are however other influences also on curriculum change. According to Shaw (1980)

"other major encouragement and support for curriculum change is provided by the Department of Education's Inspectorate and the advisers of the five local education authorities. The Inspectorate, which includes specialists in geography as well as all other subject areas has as one of its major res-

possibilities the identification of need for change in school curricula, the initiation and support for development and the monitoring of progress in curriculum change. Additional specialist support or consultancy for schools is available from the staff of the institutions of higher education and the major public resource institutions - the museums, public record office, the ordnance survey and the geological survey."

Southern Regional Examinations Board

In a letter from the Secretary to the Board the following information regarding syllabus change was given:-

Changes in the Geography syllabus are made by the Subject Panel in response to recommendations made by examiners or by panel members on behalf of the group which they represent. The Geography Panel has been particularly receptive to teachers' feelings regarding syllabus content and the changes for 1982 were agreed following the consideration of replies to a letter circulated to all centres by the Panel Chairman in which teachers' views on the syllabus were sought. A period of stability is now envisaged and in fact it is stated in the 1982 syllabus that within Section B, the regions will remain the same until at least 1985. (Macintosh, 1980).

Thus the teachers have more formal say in syllabus change than is the case in South Africa.

Yorkshire Regional Examinations Board.

The following information regarding syllabus change was received from the Professional Assistant to the Board:

"Decisions about the syllabuses and any alterations to them, are taken by the Regional Geography Panel. This is a panel of ten Geography teachers, who have been elected to represent all the Geography teachers in their area.

All the centres registered with the Board are combined into local groups, each of about 20-25 centres. Each of the ten local groups elects a teacher to represent it on the Regional Subject Panel. This teacher holds office for three years, and is expected to hold meetings regularly, to discuss such points

as syllabus amendments and the examination paper. Any proposals for changes are discussed by the whole of the Geography Panel, and if they are agreed, the proposals are sent to the Examinations Committee for final approval. No alterations made to the syllabus can take effect for two years, as this is the normal length of a CSE course." (Armstrong, 1980).

North Regional Examinations Board

The secretary to the Board gives the following information regarding syllabus change:

"Recommendations for syllabus changes are made by the Board's Advisory Panel for Geography, who advise the Examinations Committee on all matters affecting the administration of the Geography examination. In addition the Panel scrutinise and approve, as appropriate, draft examination papers and mark schemes prepared by the Chief Examiner.

The Panel consists of 18 members who are serving teachers of Geography and are appointed by their Local Education Authority to represent Geography teachers in their Authority's area. Syllabus changes come about therefore when Panel members feel that the syllabus needs to be altered to reflect new trends and methods of teaching in schools." (Edwards, 1980).

Once again an outstanding feature is that teachers have an official say in syllabus revision and construction. This could easily be introduced in South Africa as well. (See Chapter 6 for recommendations).

The A.E.B. "A" Level syllabus, compared with that of South Africa.

The following is a comparison between the A.E.B. A-level syllabus for 1982 and the South African H.G. Senior Secondary Syllabus. As the complete syllabuses are included in the appendix reference will only be made to them. When the word "done" is used for South Africa it means that the same work is done in either standards eight, nine or ten. An A-level syllabus could be taken over three years, usually it is a two year course. For the A-level only three subjects are taken compared to the six in South Africa.

G.C.E. A-level A.E.B.
(See Appendix D 4)

South Africa

Comments

I Topics

Topic A (i)

Energy flows and interrelationships; modification by man. The problems of resource use and management - not done to the same extent in S.A.

(ii)

Done

(iii)

Not done in this context. World population growth is done.

Topic B (i)

Done

(ii)

Done, but not all in this section.

(iii)

Done, but not in the same detail.

Topic C (i)

Done - Climatic types not done in Senior course.

(ii)

Done but not in the same detail.

Topic D (i)

Done but not in the same detail

Emphasis in U.K. on field investigation

Topic E (i)

Done although there is a difference in approach

The study is connected to detailed examples of such land use.

(ii)

Done except : theories of industrial location such as those of Weber and Lösch

G.C.E. A-level A.E.B. (See Appendix D 4)	South Africa	Comments
Topic F (i)	Done	
(ii)	Done except Lösch	
Topic G (i)	Done with a different approach	The 1981 draft corresponds to a great extent with the AEB syllabus
(ii)	Not done	This is an interesting section and could possibly be introduced in South Africa.
<u>II Techniques and skills</u>		
Note introduction to this section		
(i)	Done	
(ii)	Done	
(iii).	Not done	Introduced in the 1981 draft
(iv)	Only part of it is done e.g. meteorological instruments	
<u>III Field studies</u>		
	Not done in the same way	This is a section where we can learn a lot from. It could be introduced in South Africa

Geography projects in the U.K.

In this section a brief **review** will be given of three Geography Projects in the U.K. These projects can only be introduced if a country does not have a centrally controlled curriculum.

Geography for the Young School Leaver (GYSL)

Parsons (1980) gives the following basic information about the GYSL.

"Sponsor Schools Council.

Grant £127,300. This includes all additional funds made available to the project up to the time of writing and £600 from Northern Ireland for the period 1976-79 for support and dissemination.

Location Avery Hill College of Education, 1970-76.

Designated pupils 14-16 average and below average pupils (originally).

Period of funding Development phase 1970-74. For dissemination and support from 1974 to 1976 and on a reduced level 1976-79.

Project team 1970-74 Rex Beddis and Tom Dalton - co-directors (each 1/2 time). 1974-79 Pamela Bowen and Trevor Higginbottom research officers. Trevor Higginbottom was funded for a further two years full-time to act as national co-ordinator for the project. He is now an adviser with the Sheffield Metropolitan District Education Authority and continues to act as national co-ordinator.

Co-ordinators to support the schools in their locality were appointed during the project trials. 12 regional co-ordinators were appointed at the dissemination stage in 1974 and they continue to operate. LEAs were invited to appoint local co-ordinators. Regional co-ordinators receive expenses and honoraria for their services.

Trials Pre-trials work was carried out in a small number of schools in the south east London area. Testing of the first pack of materials began in 1971 in 23 schools clustered in five areas of England and Wales. 22 'associate' schools were also involved.

Materials Three published themes: Man, Land and Leisure; Cities and People; People, Place and Work.

Each published theme contains a teachers' guide; 30 copies of numerous resource sheets for pupils; other audio-visual material. Published by Thomas Nelson & Sons Ltd. from 1974.

Teachers Talking: a magazine about GYSL. The first two issues were produced by the project. Since 1976 it has been published biannually by Nelson, still edited by the project team and containing mostly articles by teachers on the use and development of GYSL."

In selecting the themes the Project Team used the following criteria:

Each of the topics should:

1. Capture the interest of the pupils - they should be involved creatively in each topic.
2. be exploited as far as possible in the local situation of each school
3. be of more than transitory relevance(Graves, 1975)

Apart from the three published themes teachers became engaged in preparing resource materials, and in devising assessment procedures and actual examinations related to a Mode 3 CSE Examination.

According to Woods (1980) the selecting, devising and implementation of assessment procedures has been an important and time consuming aspect of the project. During 1975-1977 teachers prepared candidates for a Mode 3 CSE examination which involved terminal papers, periodic assessment tests and the production of coursework. The overall results matched those obtained by candidates taking the Mode 1 CSE examination. The time consuming nature of the preparation of assessment materials has evoked considerable debate among teachers concerned with the project. The possibility of substituting a Mode 1 type syllabus and examination for the existing Mode 3 was raised. (See appendix E3). This will free teachers to work on other aspects of the project and at the same time enable the C.S.E. Boards to provide resource materials of a high standard for the examinations.

The Geography 14 - 18 Project

A Background to the Project

The Schools Council Geography 14 - 18 Project is a major new development in the teaching of geography. The Project, which was centred on the School of Education at Bristol University from September 1970 to December 1975, was concerned that modern curriculum development should be a school-based activity and an integral part of the teacher's work rather than a by-product of examination requirements. To encourage the desired result of a self-sustaining process of curriculum renewal, the Project introduced some radical changes in geography teaching at the 14 - 18 level.

1) A New Examination System

- i) The Project pioneered a more flexible O level examination which includes the provision for a core syllabus assessed by a common examination (50% of the total marks). Coursework (30%) and individual studies (20%) both of which are internally assessed and externally moderated make up the other 50% of the total marks. The core syllabus permits teachers to select teaching themes and regions at a variety of scales to enable pupils to use important skills, ideas and models drawn on in geography to classify and interpret such everyday experiences as discovering order in landscape and bringing regional and world problems into appropriate frames of reference. By encouraging problem-solving and model-building techniques Geography 14-18 provides an approach to geography which is less the passive retention of facts and more an active investigation of issues relevant to the real world.
- ii) Parallel Mode 3 CSE examinations have been negotiated by most Project schools with their regional boards.
- iii) A 16+ examination is being developed with a small group of pilot schools (See Appendix E 8)

2) A System of teacher involvement and in-service support

Under the Project, the planning and implementation of the syllabus results from a process of liaison and consultation between individual geography departments working in local teachers' groups with the support and assistance of a curriculum co-ordinator.

The Project

Support is available from the Project to help teachers establish local groups and to plan teaching and assessment programmes. Further information about the Project, including specimen teaching materials and dates of in-service courses, can be obtained from: Keith Orrell, Schools Council Geography 14-18 Project, Leeds Polytechnic School of Education, Beckett Park, Leeds LS6 3QS.

The Schools Council Geography 14-18 project O level

The Project's O level examination is administered by the University of Cambridge Local Examination Syndicate on behalf of all GCE boards. It is thus open to any school that wishes to participate in the scheme. Because of its unique structure, the Project O level:

- (i) Enables teachers to participate more fully in curriculum renewal.
- (ii) Allows teachers more opportunity to draw on new ideas in education than traditional examination systems permit.
- (iii) Provides more immediate and constructive feedback to both teachers and pupils through individual studies and externally moderated coursework.
- (iv) Capitalises on the individual strengths of each school.
- (v) Gives teachers a more positive role in the assessment of their pupils.
- (vi) Leaves time for more rewarding study in greater depth by reducing the amount of material and repetition in the syllabus.

The diagram shows the relationship of the core syllabus to the system of assessment.

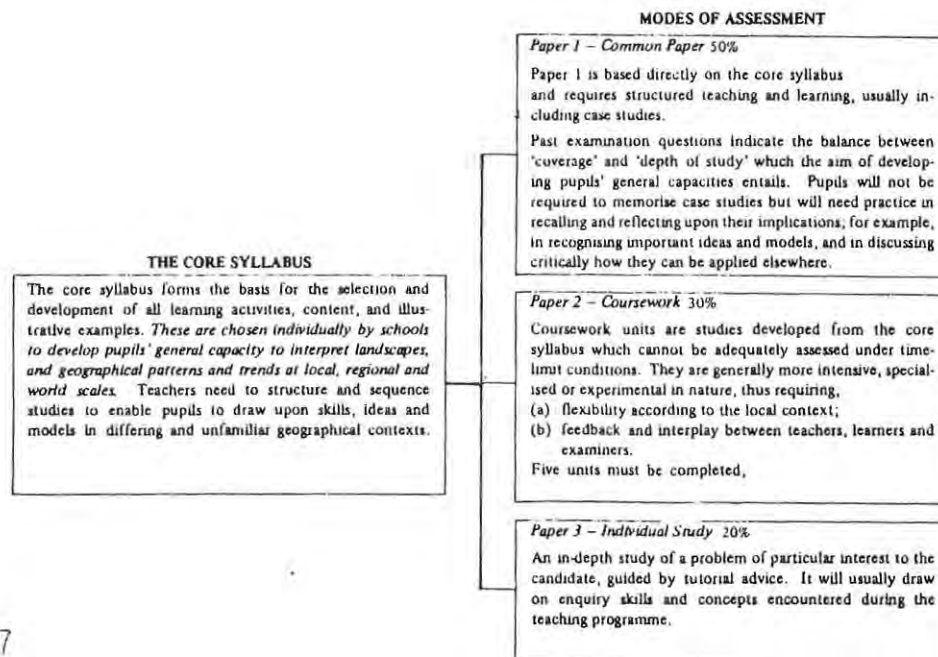


Fig. 7

5 000 pupils from more than a hundred schools sat the examination in 1979 and its popularity continues to grow every year. Most schools have already developed parallel CSE examinations.

The Published Resources

The Teachers' Handbook

Geography 14-18 : A handbook for school-based curriculum development, H Tolley and J. B. Reynolds.

Contents:

- Challenge and response: a framework for development
- The planning and management of curriculum change: the role of the head of department and outside help
- Planning a new curriculum for geography at 14-18
- The development of units of teaching materials by individual schools
- The preparation of units of teaching materials by groups of teachers
- Using classroom questions and problem-solving activities to improve the curriculum

The management of coursework and its internal assessment
The management and internal assessment of individual studies.

The teaching and assessment of planning problems illustrated with reference to landscape conservation in the Lake District

The development of teaching resources for geography on planning and change in the Third World. Appendix I: University of Cambridge Local Examination Syndicate, Schools Council Geography 14-18 Project GCE Ordinary Level, Examination Regulations

Appendix II : Geography 14 -18 Project: sample O-level paper

Appendix III: Guidelines on coursework assessment

Appendix IV: Guidelines on individual studies

Appendix V: Resources for individual studies.

Teaching and Assessment Materials

In addition to the Teachers' Handbook, useful collections of teaching and assessment material drawn from ideas developed by teachers in actual classroom activities have been published. Units on Population, Urban Geography, Industry and Transport Networks are already available, Water and Rivers will be published in May 1980 and Weather and Climate will follow later in the year. It is intended that these units should be used both as a starter resource to help schools overcome the problem of obtaining materials they need to change the geography curriculum, and also as the basis of a core syllabus from which teachers can develop their own materials.

Each boxed unit contains:

Teachers' Notes containing basic information and practical guidance on teaching the topics covered, together with reduced facsimiles of the teaching materials.

Student Resource Sheets presented on spirit duplicator masters or multiple copies of printed sheets. These contain a rich variety of resources including maps, photographs, press cuttings, advancement graphs and diagrams.

Student Learning Activities also in the form of spirit duplicator masters. They relate directly to the Student Resource Sheets and contain coursework assessment units based on them.

This format gives teachers a uniquely flexible collection of material as the common core for the new Geography 14-18 course, and for use in more traditional O-level courses. The process of curriculum change encouraged by the Project allows problems to be examined at a number of inter-related levels. This can be seen more clearly from the published materials reproduced on the next page. (**Information Sheet, 1980**).

The framework used in the unit for sampling basic questions about transport networks

Basic questions about transport networks	Local and British Isles	Other developed countries e.g. EEC and USA	Less developed countries including the Third World	World systems scale
1 Transport systems and their impact	Pedestrian movements around the school Local road systems and traffic flows Impact of motorways			
2 What are the basic characteristics of transport networks?	Road network around Kington Local footpath bus route and street networks Effects of network development on mobility			
3 How can the basic characteristics of transport networks be measured? Connectivity	Road network of the Isle of Sheppey Railway network of south west England		Railway network of Nigeria	
4 How can the basic characteristics of transport networks be measured? Accessibility	Road network of the Isle of Sheppey, Isle of Man and Isle of Wight Motorway network of West Midlands			
6 How can the basic characteristics of transport networks be measured? - Deadness	Road network of Cumbria Avon gorge A16 near Newport Footpaths round a school Ice cream seller's route Traffic lanes in a city street Trans Pennine routes	Alpine passes in Switzerland Footpaths in Central Park, New York Roads around Great Lakes Shipping lanes in the English Channel		Air routes London-Madras Routing a new supersonic passenger plane
8 How can accessibility be measured by time and cost?	Journey to school local town centre and bus routes British Rail "ever-ground" map Accessibility to central London as a factor in deciding where to live in south east England Freight rates from High Wycombe			
7 How do transport networks change over time?	Humber Bridge Bus services in East Angles Closure of Windsor Bridge Motorway network 1970 and 1975 Regulating the transport system of England		Growth of transport networks in developing countries	

Framework used in the unit for sampling basic questions about urban geography

Basic questions about urban geography	Local and British Isles	Other developed countries e.g. EEC and USA	Less developed countries including the Third World	World systems scale
1 Introduction to the topic	Projections of towns and cities			
2 Urban growth	Historical and projected growth of Bicester			Trends in urbanisation
3 Urban structure	Zones of a city and characteristics feature Population change and social economic groups in Bicester			
4 Urban dynamics	Development of city core Transitional zone Suburban fringe Zonal interactions			
5 The interaction of settlements	Hierarchy of services Relationship between size and function Sphere of influence Conurbations in the British Isles			Rank Size Rule
6 Study of a major city	Assessment of a city with reference to Milton Keynes		Leisure problems of a Third World city	
7 New Towns study				

The framework used in the unit for sampling basic questions about industrial geography

Basic questions about industrial geography	Local and British Isles	Other developed countries e.g. EEC and USA	Less developed countries including the Third World	World systems scale
1 The factors which influence decisions about industrial location and how these change over time	Sussex iron industry Scunthorpe Anchor Project BSC National Investment Programme			
2 The classification of industry according to location	Bread making on the south coast National location of light bulb industry	European movement to market location of oil refining		World of supply and demand
3 Power supplies and the location of industry	Energy consumption in Great Britain 1974 Coal production North Sea oil and gas production Nuclear energy production	France's power policy HEP in Tasmania and Scandinavia		
4 The influence of government action on industrial location	Unemployment in Great Britain Government incentives Government incentives responses of Plymouth to government help	Appalachia Regional Development programme, USA		
6 London a case study in industrial diversification	Historical survey of London's industries Classification of jobs Location in London of various industrial activities			
8 Perspectives of the industrial environment	Questionnaires on South Wales and Sheffield Location quotients for South West North West Yorkshire and Humberside			
7 The location of industry in the 11th century	Comparison of exports of iron Italy		Alternative approaches to industrialisation in Ghana, India and China	Graph of Italy's exports from Africa and Europe to show the proportion of employed persons engaged in agriculture, industry and services
8 Are there limits to industrial growth?		Japan's rapid increase in raw material imports	A Third World country (South West Africa) has valuable raw materials to be developed	An examination of the life expectancy of certain raw materials which is industrial growth, pollution and political conflict

The framework used in the unit for sampling basic questions about population

Basic questions about population	Local and British Isles	Other developed countries e.g. EEC and USA	Less developed countries including the Third World	World systems scale
1 Is there a world population crisis?	Coverage of population growth in the mass media			Verdus circle of poverty of the industrialised nations Maudslayi standing the population problems of the Third World (1)
2 At what rate is the world's population increasing and how are the projections about its future growth?	Population growth in Kington Reliability of population projections for the UK			Equilibrium growth of world population World distribution of population growth Population projections
3 What are the causes of the rapid increase in the world's population?	Changes in vital rates and population growth Factors affecting population change including conditions in which rates of the growth rate		Changes in vital rates and population growth in Mauritius Effects of drought on population of India	World pattern of death rates at stages of demographic transition Malthusian theory of population growth
4 What is the relationship of changes in the world's population to changes in population structure?	Sexual and high birth and death rates Population structure and dependency loads in Japan and USA	Population structure and dependency loads in Japan and USA	Population structure and dependency loads in Mauritius and India	World pattern of birth rates at stages of demographic transition Malthusian theory of population growth
5 What is the relationship of world population growth to world food supplies, hunger and poverty?	Maudslayi standing the population problems of the Third World (2)	Urban consumption in developed countries	Demographic changes and economic development in Philippines Taiwan, Korea, Mexico and Brazil	World pattern of birth rates at stages of demographic transition Malthusian theory of population growth
6 What are the causes of migration and what effects does it have?	Local population movements Movement into towns in Britain during Industrial Revolution Population movements in Ireland	Migration to the cities of USA	Migration of foreign workers and EEC	

The Geography 16-19 Project

The Project started in September 1975 at the University of London Institute of Education, under auspices of the Schools Council.

The Geography 16 - 19 Project began work with two guiding aims:

- (1) to involve teachers and lecturers in a reconsideration of the objectives, content and teaching methods of geography courses for the 16 - 19 age range in schools sixth form colleges and colleges of further education.
- (2) to help teachers, by means of this involvement, to appreciate the significance of their role as curriculum developers.

Although rather grandly phrased, these aims do summarise the twin aspects of development work and in-service work with teachers which have characterised the project's approach. Both aims have been interpreted in distinctive ways by the project.

Reconsideration of the objectives, content and teaching methods demanded firstly a thorough investigation of the needs of 16 - 19 year olds in full-time education, and secondly a consideration of how geography can contribute to the fulfillment of these needs.

Working from this educational stance, the project has produced a distinctive curriculum framework which will enable needs and contribution to be matched up in course construction, production of materials, and development of teaching approaches in the classroom.

The Curriculum Framework is a genuine 'framework' in the sense that it is a structure of ideas and procedures from which courses and materials can be constructed for 16 - 19 year olds. It is intended that use of the curriculum framework will help to ensure that the potential of geography in the education of 16 - 19 students will be realised.

The curriculum framework comprises the following parts:

- (a) a distinctive 'philosophy' or approach to geography termed the man-environment approach to geography.
- (b) Guidance, to help course constructors and teachers to work within the approach.

The main elements of guidance are:

- (i) a set of four man-environment themes which clarify the approach further and can be used as sampling devices for course construction.
- (ii) advice on the important questions and ideas of geography (key questions and guiding concepts).
- (iii) guidance on scale and regional coverage in course construction.
- (iv) guidance on incorporating enquiry-learning into 16-19 work.

Because they are constructed from the Project's curriculum framework, courses will be characterised by:

- (i) emphasis on the understanding of concepts and principles
- (ii) emphasis on understanding the inter-relationships between man and his varied environments.
- (iii) study of the issues, questions and problems which arise from these inter-relationships.
- (iv) appreciation of the special contribution made by geography to the understanding and possible solution of the problems, resolution of the issues and answering of the questions.
- (v) using geographical study as a medium through which skills, abilities and techniques are developed.
- (vi) adoption of an enquiry approach to learning.
- (vii) opportunity to consider the significance of values in environmental decisions, and for students to clarify their own values through values enquiry.
- (viii) scope for teacher involvement in planning, development and assessment of courses.

(Project News, 1980).

AUSTRALIA

Because the response to his enquiries in Australia was not very good, the author decided to give only a brief overview of Geographical Education in Australia.

Only material from South Australia was received with the result that this syllabus will be discussed. The rest of the information came from secondary sources.

Education in Australia

Education is a state, rather than a Federal responsibility in Australia. Authority is concentrated in a state Department of Education and it is controlled by a departmental policy drawn up by an organization of educational experts. There has been some decentralization in New South Wales and Queensland but they are still linked to the central department rather than to other local units.

A Minister of Education is at the head of the department and he is assisted by a permanent official in charge namely the Director General of Education. The department caters for primary, secondary and technical education. As in South Africa the school course usually extends over 12 years. Year one, for example, is the commencing of primary school at about six years and Year 12 is at the end of secondary education at about 18 years. (Biddle, 1975).

Geography teaching in Australia

Queensland

The Geography syllabus is prepared by the Social Science Advisory Committee of the Board of Secondary School Studies. The syllabus is divided into three courses, namely Grade eight, Grades nine and ten and Grades 11 and 12. The grade 11 and 12 syllabus is based on a semester system, each covering about seventy hours of programmed study. In Geography there are eight semester units of which a pupil can take a maximum of four. There are no prerequisites for any of the units. It is thus possible to

move from grade eight to grades 11 and 12 (Smith, 1977).

New South Wales

In the secondary schools Geography is taught from Years seven to twelve. The Geography syllabus is divided into two courses - Geography Years 7 to 10 and Years 11 and 12. In the junior course there is a deliberate move away from the central syllabus towards a more decentralised course. The junior course is much more flexible than the senior course, although the senior course teacher still has a great deal of freedom in the selection and organization of information. (Smith, 1977).

Victoria

The Geography syllabus is organized into six year courses in secondary schools. In each course a number of topics to be studied are listed. In year 12 a course is prescribed for the Higher School Certificate and it is examined by a three-hour external examination. The courses for year 12 consist of six **topics** to be studied e.g. precipitation, land forms, agriculture, drainage basin and man, manufacturing and settlement. (Smith, 1977).

South Australia

Geography is offered in each of the five years in most of the secondary schools in South Australia. The syllabuses to be used in schools are prescribed by two separate bodies. The Public Examinations Board (P.E.B.) sets the syllabus and examinations for years 11 and 12 and the Education Department Geography Subject Committee is responsible for all the internal curricula (Smith, 1977). Syllabuses for Year 11 and Matriculation are published in the Handbook of the P.E.B., South Australia. The Year 11 course is divided into two sections namely The Arid Lands and The Humid Tropics. The Matriculation syllabus also con-

sists of two sections - A. Core Topics and B. Options. All seven topics in section A must be done and any one topic from section B (P.E.B. of South Australia, Syllabuses for 1979).

Western Australia

Students are only taught Geography after ten years in the school system. Up till then they are exposed to general courses in social studies. The syllabus is thus broad in scope with little specific objectives. The examination of candidates is both by external and internal assessment. Internal assessment is worth 20 per cent of the total mark and it consists of laboratory and fieldwork. This mark is moderated by examiners appointed by the P.E.B. of Western Australia (Smith, 1977).

Tasmania

Geography is not taught as a separate subject in Years seven to ten. Social Science is taught and it contains little straight geographical content. A geography course in years 11 and 12 is offered by the Schools Board of Tasmania. This course leads to a Higher School Certificate (Smith, 1977).

Syllabus Aims in Australia

Public examinations Board of South Australia - Year Eleven advisory syllabus 1979

The following was taken from the preamble of the Year Eleven advisory Geography syllabus:

"Introduction

A syllabus for the senior secondary school should ideally achieve the development of an orderly framework of ideas to assist in the understanding of the immense and increasing volume of information available about the earth. It should be possible to inculcate a reasoned and objective approach to the study of the natural and cultural features of the earth's surface, to develop a sense of problem, an objectivity in observation, controlled imagination in the use of evidence and the development of explanation,

and a rigour in the testing of these explanations. It should be possible to develop critical attitudes toward geographical problems whether those of the local area, the homeland or of other parts of the world."

The P.E.B. of South Australia Matriculation syllabus 1979

Aims

"Geography is seen as the discipline concerned with the description, analysis and explanation of the location of phenomena on the surface of the earth.

A syllabus for the senior secondary school should ideally achieve the development of an orderly framework of ideas to assist in the understanding of the immense and increasing volume of information available about the earth. It should be possible to inculcate a reasoned and objective approach to the study of the natural and cultural features of the earth's surface, to develop a sense of problem, and objectivity in observation, controlled imagination in the use of evidence and the development of explanation, and a rigorousness in the testing of these explanations. It should be possible to develop critical attitudes toward geographical problems whether those of the local area, the homeland, or of other parts of the world."

Syllabuses

Untill 1972 syllabus reform in Australia had been a "peripheral modification." Only short term changes of a stop-gap nature was made. Otherwise changes were initiated by academics in the field of Geography.

Syllabus change in Australia was no easy task as "courses in geography are not being developed ab initio in the schools." (Cox, 1972).

In Queensland the Geography syllabus is constructed by part-time committees consisting mainly of teachers who are not freed from their regular duties. The modus operandi and the membership of the committee make it difficult for these teachers to accomplish many of the features which would characterise advanced curriculum construction.

The first phase in developing a course in Geography involves the selection of aims. It is **unfortunate** that the Geography syllabus for senior pupils started with the words:

"Two examination papers, each of two and one half hours will be set" (Cox, 1972).

The statement of aims in a syllabus must be rooted in the values of the society which set up the premises of the system of secondary education (Cox, 1972). It is the task of people from several related fields, and of teachers to establish or reconstruct the curriculum.

In Western Australia it also seemed impossible to change the curriculum in Geography because the Western Australian Educational Experience is a closed system as indicated in figure 8.

The Western Australian Educational Experience. A Closed System.

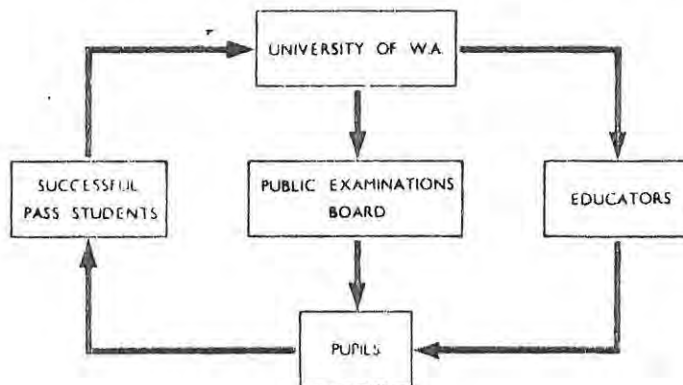


Fig. 8

(Hill and Cameron, 1977)

The initiative for reform was more the function of geographers than educationists. The problem was to get the P.E.B. to move towards change. This led to an inevitable clash between geographers and educationists. At the June 1971 conference of the G.T.A.W.A. two papers in

connection with curriculum development were read by D.K. Wheeler and D.S. Biddle (Hill and Cameron, 1977). Wheeler identified a few educational shortcomings in the existing course. The old course prescribed the content clearly but no statement of aims was included. Biddle provided an overview of alternative syllabus structures elsewhere in Australia. These two speakers initiated a course in Geography. A syllabus was constructed by the P.E.B. Geography syllabus Committee. The nucleus of the syllabus, was a set of ten "concept clusters" (see fig. 9)

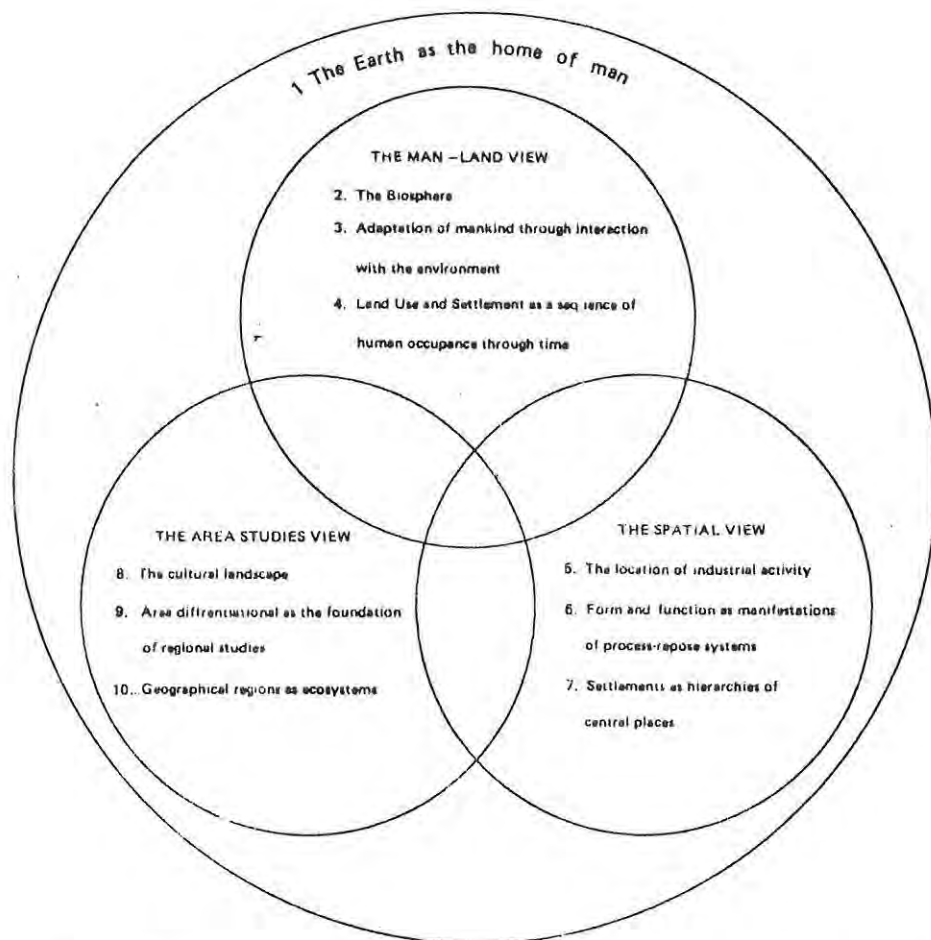


Fig. 9 The ten concept clusters of the Western Australian geography syllabus. (Hill and Cameron, 1977)

The following is a comparison between the P.E.B. Matriculation Examination syllabus (South Australia) and the South African HG Senior Secondary syllabus.

South Australia (Appendix D9) F.E.B. Matriculation Syllabus	South African Senior Secondary Syllabus (HG)	Comments
<u>Section A core topic</u>		
Topic 1	Not done in the same context.	
Topic 2 (a)	Done	Partly in Standards eight and nine
(b)	Done in standard eight	
(c)	Done in standard nine	
(d)	Done	
Topic 3	Done	Partly done in standards eight and nine.
Topic 4	Ecosystem done but not plant communities	
Topic 5	Done in standard nine	
Topic 6	Done in standard nine	
Topic 7	Done	
<u>Section B</u>		
Topic 8	Done in standards eight and nine	
Topic 9	Most done in standards eight and nine	Done in The Netherlands under the same heading.
Topic 10 (1)	Done in standard nine	

South Australia P.E.B. Matriculation Syllabus	South African Senior Secondary Syllabus (HG)	Comments
(2)	Not done in detail	
(3)	Done in standard nine	
Topic 11	Not done in this context	Could be done in the Regional part of standards 8,9 and 10
Topic 12	Part of it done in Standard 10 settlement Geography paragraph 2.1.1	
Topic 13	Done	
Topic 14	Cannot be done in South Africa	
Section C	Done but only examined in standards eight and nine	This could be useful for South Africa.

UNITED STATES OF AMERICA.

Education in the U.S.A.

Responsibility for education rests with the individual states. The states delegate the responsibility to local governments. Local authorities operate in accordance to local decisions and are entirely in control of the education under their jurisdiction. Decisions regarding education must accord with federal and state laws.

At state level, educational administration lies with a state board of education. The duties of these state boards vary from state to state, but in general they are concerned with distribution of funds, enforcement of educational statutes, determination of basic courses of study, recommendation of textbooks, teacher certificates, etc. Because of administrative decentralization there is no uniform school organization or curriculum.

The school course is organized in a 12 year period with various sub-divisions. e.g. six years primary, three years junior high and three years senior high or four-four-four (primary, middle, high school).

Geography teaching in the U.S.A.

Geography teaching has been dominated in the 1970's by the American High School Geography Project (H.S.G.P.). Up till the introduction of the H.S.G.P. in 1961 little attention was given to geography teaching in schools. As there are numerous sources on the H.S.G.P. only the outlines of what it comprised will be given here.

The course was aimed at pupils in the 14-16 age range. Each unit was developed as follows: Concepts, skills and values which seemed important to be taught were structured into a course unit devised by professional geographers. School teachers and educational psychologists were also consulted. The unit was tried out in a limited number of high school classes, usually near where the unit was originally conceived.

The objectives of the H.S.G.P. were stated by Helburn :

"Students should understand certain basic abstractions. While there seems to be available no definite statement of the abstract ideas of geography at any given level, the following have been given a high priority; ecosystem, man-land relations, sequent occupance, location, distance, pattern, spatial distribution, areal association, spatial interaction, diffusion, spatial hierarchy, region, and change through time. Student training should focus on four skill objectives: an increased awareness of place and its significance; an increased ability to deal with data in terms of their spatial characteristics; an increased ability to formulate appropriate problems which derive from that awareness; an increased ability to solve (or at least partially solve) those problems. As a result of working with the Project's materials, the student will be able to ask - indeed, will want to ask - a series of questions that will help him to understand the contents of the world:

Where is it? Where in relation to others of its kind? Taken together, what kind of distributions do they make?

How did it get there? What was there before that made a difference? Whose decisions about the choice of location were important? How were these decisions made?

What factors influenced its growth in that place? What difference does it make to me, to society that it is there?

What else is there too? How are those things related to each other in place?

How is it connected to things in other places? What kinds of flow result?

The students' ability to formulate questions like these, to collect information and to select the relevant from the mass, to hypothesize answers, to recognise the tentativeness of those answers - this is the primary object of the High School Geography Project." (Graves, 1975, pp. 115-116).

PART III

CHAPTER 6 - CONCLUSIONS AND RECOMMENDATIONS.

In his survey of the opinions of South African geography teachers about the syllabus, Ledger observed: "It is to be hoped that more notice of teacher opinion in 1977 will be taken by syllabus compilers than appears to have been accorded the 1960 recommendations" (Ledger, 1978, p. 115). Some of the recommendations listed below were made in the 1960 survey. The fact that it is necessary to repeat them shows that they have not been fully appreciated by the syllabus planners.

This chapter will be divided into five main categories, namely:

- A Curriculum Aims
- B Geographical knowledge
- C Learning Experience
- D Evaluation
- E Curriculum Development

A. Curriculum Aims

Concern has already been expressed that the aims and objectives of geography teaching are not included in a preamble in all the South African syllabuses. In the light of trends overseas a syllabus seems incomplete if there is not a statement of aims and objectives. No course can be taught efficiently if it is not known what the ultimate aim or immediate objectives are. A full range of aims covering most of the aspects of geography teaching can be found in chapter five and in the appendices.

Study of overseas syllabuses have brought out the value of a preamble containing at least the following:

- why geography must be taught
- the scope of the subject
- aims and objectives

B. Geographical knowledge.

1. Syllabuses

- The present standard 10 syllabus as well as the new 1981 draft is far too long. With a shorter syllabus it would be possible to make a more detailed study. In 1971 various institutions raised the matter of an excessively long syllabus in their comments (see pp, 72 - 91). Their concern was reiterated by Earle (1970). Ledger's survey (1978) indicated that 50% of the geography teachers believed the syllabus to be too long. This was acknowledged by the Cape Education Department when they shortened the syllabus in 1980. (See appendix A 14). Future syllabus compilers should take this matter seriously.

 - The new draft should be less prescriptive. It should be left, to a large extent, to the teacher to decide what to add and what to leave out - especially up to standard nine. One of the criticisms of the 1981 draft is that it is not a core syllabus, as nothing can be added or taken away. All provinces should include a list of reference books in the syllabus like some of the overseas syllabuses, or the teacher must be provided with a separate reference list. The advantage of including it in the syllabus is that it is always immediately available. This was asked for by various institutions in 1971.
- ### 2. Selecting content
- When selecting content for a syllabus the question should always be asked : of what significance is it for man? An outstanding feature of overseas syllabuses is that the content is always related to man.

- Elementary statistical techniques should not be included in a SG syllabus, as is the case with the 1981 draft syllabus. These techniques are only necessary for pupils going to university.
- The question can be asked whether more of the 'New Geography' should be included in the syllabus. Furthermore should a school syllabus contain aspects like geography of relevance and concern, value geography, radical geography, etc. The latter could be dangerous to include, especially when the same syllabus is studied by different ethnic groups.

C. Learning experiences

1. Teaching methods.

- Handouts regarding useful teaching methods should be supplied to teachers. Ideas from experienced teachers could be provided for young teachers and vice versa. This could be the task of the Geography Study Committee.
- Teachers should be provided with a reference list regarding the teaching of geography. They should be made aware of research that has been done in the subject, e.g. Ledger's thesis of 1978. A teacher does not have the time to acquaint himself with all the research that has been done.

2 Study materials.

- Each school offering geography to standard 10 should be supplied with a fully equipped geography room. The present geography rooms provided by the Department are impractical. No provision is made for the storage of topographical maps or other equipment.
- More maps and photographs should be supplied. Topographical and geological maps, aerial photographs, in fact all material available from the Government printer, Trigon-

metrical survey and other government departments should be made available through monetary grants to schools. The school catalogue should make provision for the supply of certain audio-visual apparatus for Geography, specifically e.g. overhead projectors. Earle (1976) also stressed the need and importance of adequate supplementary teaching material.

- The monetary allocation of schools should be increased when the new 1981 draft is introduced (Probably 1984) because it implies the use of more than one set of textbooks, as there is an exchange of syllabus content between the different standards. Schools should at least now be warned that more than one set of Geography textbooks will be necessary when the new syllabus is introduced.

D. Evaluation

1. Examinations

- It is essential for the Study Committee for Geography to send a circular explaining the method of examining in the standard 10 examination. This will enable teachers to use the same method in standards eight and nine.
- With a new draft syllabus a specimen paper and memorandum should be supplied as a guide to teachers. This is done in the U.K. by the different examining boards - although they do not supply a memorandum. There is need for this among teachers in the U.K. (see appendix D5) and in South Africa. This point was also raised by Earle in 1976 (See p. 96).
- Something of great concern among teachers in South Africa is the assessment of fieldwork (Ledger, 1978). A guide of how fieldwork can be evaluated should be provided by the Education Department through the Study Committee. The Handbook : Geography 14-18 Project gives valuable advice in this respect (Tolley and Reynolds, 1977).

- Assignments and fieldwork should carry more weight in the final examination in standards 6 - 10. In the standard 10 examination the principle of the C.S.E. mode 3 examinations in **Britain** could be adopted. Moderators could be appointed by the Department to moderate such marks. These moderators need not be inspectors - they could be senior teachers recommended by a circuit inspector. In **Britain** there is an oral examination for each pupil after his assignment has been evaluated. This is to check to what extent the pupil did his own work.
- An interesting feature of some of the examinations in **Britain** is the supply of an atlas or atlas extract (See appendix E8). This could be introduced **especially in standards 6 - 8 in South Africa.**
- An appeal must be made to the Education Department to allow an extra 15 minutes reading time in the Standard 10 examination. This extra time should be printed on the paper. This is done in most overseas countries.

E. Curriculum Development

1) Curriculum Projects

- Various Geography teaching projects were mentioned and discussed in Chapter five. We in South Africa know the theory of these projects but do not know how they operate in practice. It **would** thus be in the interest of **geography for Teachers Centres to** keep examples of a full range of the teaching materials used in these projects. The materials are too costly for individual schools to buy. In chapter 5 a list of these materials for the 14-18 Geography Project, can be found.
- Thought should be given to the desirability of introducing such projects in South Africa. A personal view

is that useful ideas could be taken from these projects and introduced in our own teaching. The task to select these ideas should be given to the Geography Study Committee.

2. Organization for curriculum change

In South Africa the teacher has no direct say in decisions regarding syllabus change. On his own initiative comments can be made through his Professional organization to the Geography Study Committee. The problem is that firstly all teachers do not belong to a professional organization and secondly very few teachers know who their representative on the Committee is or who the members of the Study Committee are. Officially the Cape Geography study Committee consists of five members. A representative of the Department, usually an inspector - the chairman; one representative from each of the two Professional bodies namely the S.A.O.U. and S.A.T.A.; one representative from the universities and one from the training colleges. The committee could co-opt other people to serve in a consulting capacity. At the moment there are representatives of all the universities in the Cape Province except Rhodes University, as well as the two examiners for Geography in the Cape Province.

It is felt that teachers should have a more prominent say in the drafting of syllabuses and in syllabus change. This could be done in various ways.

- The method used by the Yorkshire Regional Examinations Board could serve as an example for South Africa. Each of the provinces could be divided into regions and each region could elect a teacher representing that region. These representatives could form a committee together with people appointed by the Education Department.
- In Ontario, Canada, committees involved in syllabus change consist of teachers, academics, faculty of education staff and Education Department officials.

- Teacher representation could also be organised through Teachers' Centres. The only problem here is that Teachers' Centres only exist in urban areas.

- In 1971 the Society for Geography was willing to arrange a workshop for the discussion of syllabus change if the J.L.B. gave their approval. As far as the author is aware, such a workshop was never held, but it could be done.

- The Geography Study Committee has been mentioned several times in this study. It must be born in mind that this is not a full time committee. If so much has to be done by the committee the question arises whether the Department should not appoint a full time official as member of the committee. He could carry out almost everything mentioned so far in connection with the committee. Such a person should of course be a former teacher of geography.

In conclusion one can say that geography teaching in South Africa is on a sound basis. From comparisons with other countries it is clear that South Africa is up to date with, and in some cases ahead, of geography teaching trends overseas. There is room for improvement, but this can only be achieved if teachers keep up to date with developments in the content and teaching of geography. If teachers of geography are really serious about the teaching of their subject, they should be prepared to learn from the study of the geography curriculum here and overseas. It is hoped that the present study has made some contribution to this.

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3. List of correspondents

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- (ii) M. Regular, Department of Education, Newfoundland
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- (iii) Department of Education, New Brunswick - un-
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Alberta
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United Kingdom:

- (xiii) B.M. Armstrong (Mrs) - Yorkshire Regional
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- (xv) A.C. Holden - Joint Matriculation Board Man-
chester
- (xvi) M.J. Weller (Miss) - University of London,
Schools Examinations Department, London
- (xvii) D.H. Campbell - The West Midlands Examinations
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- (xviii) H.G. Macintosh - Southern Regional Examinations
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- (xix) D.F. Morris, P.E.B. of South Australia,
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COMMERCIAL GEOGRAPHY AND HISTORY.

A. General economic considerations :—

Supply and demand; competition; monopolies; tariffs; bounties; foreign exchanges; international indebtedness; the balance of trade; duties of consuls and commercial attachés; entrepôt trade and bonded warehouses; methods of quoting prices; marine insurance.

B. Transport :—

Caravan-routes; Greek and Roman trade; the trade of Genoa, Venice, and the towns of the Hanse League; the era of discoveries and the subsequent multiplication of trade routes; the revolution in transport during the nineteenth century; relative merits of sea and land routes; all-red routes; the great canals in relation to the world's commerce; tramp-steamer routes; possibilities of aerial transport.

C. The chief commodities of commerce :—

Wheat; rice; tea; coffee; sugar; wine; tobacco; flax; hemp; cotton; wool; jute; silk; rubber; timber; oils and gums; coal; petroleum; gold; iron and other metals.

(In the case of agricultural products, questions of soil, climatic conditions, rotation of crops, irrigation, labour, etc., should receive attention.)

D. Commercial Geography of the following regions :—

- (1) Africa south of the Equator.
- (2) The chief countries of Europe, including the British Isles.
- (3) Remaining portions of the British Empire.
- (4) The United States of America.
- (5) China and Japan.

Attention should be devoted to the products and manufactures of the country as dependent upon natural conditions; also to the localisation of industries, and the question of transport in relation to home and foreign markets.

E. Leading features of the Economic History of Europe prior to the Industrial Revolution :—

- (1) The manorial system and serfdom.
- (2) Merchant and craft guilds.
- (3) The Italian city-republics and the towns of the Hanse League.
- (4) Enclosures for sheep-farming in North-West Europe and the growth of large towns.
- (5) The mercantile system in England.
- (6) The era of great discoveries and the subsequent expansion of trade from the seventeenth century onwards.
- (7) Enterprise of British, French and Dutch Chartered Companies and the resulting conflicts in Canada, India and the East Indies.
- (8) The Navigation Acts.

F. The Industrial Revolution in England: aspects of nineteenth century progress :—

- (1) *The great inventions.*—Introduction of machinery; revolution in the iron trade, the textile industry and in industry generally; effect upon coal mining; the migration of industries from the South to the North of England; large-scale enterprise; capitalism.
- (2) *Growth of working class movement.*—The question of hours and a minimum wage; Trades Unionism; Syndicalism.
- (3) *Reaction from "laissez faire" in industry.*—Factory legislation; inspection; truck acts; employers' liability and workmen's compensation; mines acts.
- (4) *Abandonment of mercantile system.*—Growth of free trade movement; the work of Pitt, Huskisson, Peel, Cobden and Gladstone.
- (5) *Reaction from "laissez faire" in colonial policy.*
The growth of constructive imperialism :—
 - (a) As regards self-governing colonies: colonial conferences, loans, imperial preference, efforts to stimulate inter-imperial trade.
 - (b) As regards tropical dominions: railway construction, encouragement of scientific agriculture, efforts to combat tropical diseases, etc.

G. The economic development of the Great Powers (France, Germany, Russia, United States, Japan), studied along similar lines to "F," but in simple outline.

(The Education Gazette, 16 June 1921)

Appendix A2

HISTORICAL GEOGRAPHY.

A. *The meaning of Historical Geography:—*

- (1) Its point of view dynamic rather than static.
- (2) *The nature of those geographical influences which determine history—e.g.:*
 - (a) Influence of climate and relief upon commerce, industry, and national character.
 - (b) Situation as regards accessibility to markets.
 - (c) Sources of mechanical power in relation to industry.
 - (d) Mineral wealth, fertility, etc., as leading to economic developments (and such considerations).
- (3) *The manner in which human progress reacts upon geography, e.g.:*
 - (a) Shortening distance by means of canals.
 - (b) The clearing of forests may affect climate.
 - (c) New areas may be brought under cultivation by irrigation, by the draining of marshes, etc.

B. *A brief survey of the great civilisations, classified geographically:—*

- (1) River civilisations—Babylonia, Egypt.
- (2) Steppe and desert civilisations—Assyria, Islam.
- (3) Sea civilisations—Phoenicia, Greece, Carthage.
- (4) Ocean power—Iberia, Holland, France, Britain, United States of America, Japan.

Some geographical factors in European history, e.g.:

- (1) The growth of nationalities upon the northern plains of Europe.
- (2) The relation between physical feature and political frontier.
- (3) Permanent memorials of Moorish and Mohammedan invasions of Europe.
- (4) Factors which have determined the position and growth of towns.
- (5) Religious and political persecution and the migration of industries.
- (6) The effect of the distribution of races in Europe in relation to the recent formation of new states. (Peace Treaty, 1918.)

The exploration, partition and commercial development of Africa:—

- (1) Coincidence of political settlement with oceanic drainage areas.
- (2) Commercial supremacy and empire, respectively, as motives of European enterprise.
- (3) Survey of European colonies, protectorates, and spheres of influence.
- (4) Obstacles to European settlement.
- (5) Racial questions and labour problems in relation to agriculture, mining and industries generally, in South Africa.

E. *The geographical factor in the history of the British Empire:—*

I. INDIA:

- (a) Inhospitable coast and lack of harbours tended to insularity.
- (b) Importance of Himalayas:
 - (1) As a climatic barrier.
 - (2) As a bulwark against invasion.
 - (3) As a source of water-supply and fertility to Northern India.
- (c) Vulnerability of North-West frontier—Khyber and Bolan passes; Aryan and Mohammedan invasions; the effect of this weakness along the North-West frontier concentrated somewhat by the presence of an extensive desert.
- (d) Discovery of Cape route to the East, and subsequent French and British occupation of India.
- (e) The British Empire in India, dependent on—
 - (1) Maintenance of buffer-states on North-West frontier.
 - (2) Command of the seas.

II. AUSTRALASIA:

- (a) Remote position as accounting for the lateness of discovery and exploration.
- (b) The Australian Alps as a barrier: the "Great Dividing Range."
- (c) Wool and gold as the foundations of Australian prosperity.
- (d) Coincidence of agricultural settlements with areas of sufficient rainfall.
- (e) The future of Australia in relation to other powers of the Pacific.
(And such considerations.)

III. CANADA:

- (a) Political settlement of North America determined by Colonial wars of British and French, 1759.
- (b) Definite political purposes in the construction of trans-continental railways from East to West, to overcome the natural North-South tendencies of trade and intercourse.
- (c) The shifting of the centre of gravity westwards with the discovery of gold and the opening up of vast agricultural regions between the Rockies and the Great Lakes.
(And such considerations.)

(The Education Gazette of
16 June 1921.)

Appendix A3

SENIOR CERTIFICATE: GEOGRAPHY

The following is the syllabus in Geography for the Senior Certificate Examination in December 1946:—

The syllabus consists of four sections. At the examination four questions, of which two must be answered, will be set on Sections 1 and 2 combined, and eight questions, of which four must be answered, will be set on Sections 3 and 4 combined.

Pupils should be trained in the habit of making the fullest use of a good school atlas, and should be made aware of the distortion and errors inherent in map projections commonly used in atlases.

SECTION 1: PRACTICAL GEOGRAPHY.

- (i) The use of meteorological instruments: mercurial and aneroid barometers, rain-gauge, maximum and minimum thermometer, wet and dry bulb thermometer; determination of humidity of air by means of hygrometrical tables; the keeping of meteorological records, including records of wind direction.
- (ii) The construction of climatic graphs; the interpretation of climatic graphs and maps.
- (iii) Graphical representation of given data, e.g. products, population, trade, etc.
- (iv) Representation of relief; reading of large-scale relief maps and drawing of sections from such maps; drawing contour maps from given data.

SECTION 2: GENERAL GEOGRAPHY.

- (i) Elementary climatology:

Temperature: its relation to insolation and terrestrial radiation; causes of diurnal and seasonal variations; effect of the distribution of continents and oceans upon actual temperature distributions; relation of mean temperature distributions to barometric pressure distributions at the equinoxes and solstices.

Circulation of the atmosphere: relation of wind to pressure gradient and to the deflective force of the earth's rotation; convectional circulation in low latitudes; cyclonic circulation of middle latitudes; seasonal changes in the distribution of pressure and wind systems.

Precipitation: causes of rain, snow and hail; cyclonic, convectional, and relief precipitation; regional and seasonal distribution of precipitation explained in terms of moist air supply and conditions causing condensation and precipitation.

Climatic regions of the world: climate and general weather conditions characteristic of each season.

- (ii) Elementary plant geography: world distribution of vegetation types and chief crops considered in terms of their climatic requirements and adaptations, and their relationship to the major climatic regions.
- (iii) Oceanic circulation: the chief ocean currents and their relation to prevailing winds and configuration of coasts; elementary facts regarding tides. Relation of winds and currents to the 15th and 16th century voyages of discovery.
- (iv) Elementary geomorphology: rock types and their origins (igneous, sedimentary, metamorphic rocks); earth movements; simple geological structures (folds, faults, igneous intrusions and extrusions). World distribution of young folded mountains and occurrence of earthquakes, older fold systems, and ancient shields considered in a broad survey of (i) the relief of the continents and (ii) the distribution of coal and petroleum.

Weathering; transportation and deposition of weathered material by running water, glaciers and wind; chief types of land forms due to denudation and deposition; denudation and deposition, considered in relation to their economic importance.

SECTION 3: REGIONAL GEOGRAPHY.

This will comprise a study, in more detail than for the Junior Certificate, of the major natural and economic regions of the world as a background to the political units associated with these regions. It is left to the teacher to choose either natural regions or political units as the basis of treatment, but, whichever basis is adopted, the relation between the two points of view should be stressed. No country should be treated without reference to the natural regions that form part of its territory. No study of natural regions is complete without due regard to the political frontiers that cut across them and for the way in which parts of the different natural regions combine to form the territories of individual states.

Whichever treatment is followed, the world will be covered in outline, but emphasis should be laid on the study of the following countries: the British Isles, France, Holland, Belgium, Germany, Sweden, Italy, U.S.S.R., U.S.A., Canada, Argentina, Brazil, Chile, India, China, Japan, the East Indies, Malaya, Australia, New Zealand, Egypt, Southern Africa. In each of these countries attention will be given to position, climate, relief, natural vegetation, products, principal towns, industries, transport. In each country those natural regions that are economically the most important will receive special attention. Candidates will be expected to show a more detailed knowledge of Southern Africa, as outlined below:

SOUTHERN AFRICA (South of the Kunene and Zambesi Rivers):

Structure in relation to (a) relief; (b) occurrence and distribution of the leading mineral products. Climate and its effect upon the distribution of (a) natural vegetation; (b) water resources; (c) types of farming, chief crops and kinds of stock.

Geographical conditions affecting the development of (a) the mining industry, (b) the railway system, (c) manufacturing industries. Distribution of European, Native and other non-European population; the chief towns and ports, factors favouring and impeding their development; overseas trade.

NATURAL AND ECONOMIC REGIONS.

As different writers adopt different regional delimitations, the scheme given below or any similar logical well-founded scheme of major regional divisions may be followed. These are to be treated in terms of relief and climatic conditions and their relation to farming, forest industries, mining, fishing, and to modes of life and density and distribution of population, including position and importance of chief towns. Special attention is to be given to the regions *italicised*.

Equatorial Forest Lands:

Amazon and East Brazilian rain-forests. Central and West Africa. *East Indies and Malaya.*

Monsoon Lands of Asia:

Relief, climate, and their effect on the distribution of the chief crops in *India, China, and Japan.* Irrigation in India. Rice production and rice export trade of Burma, Thailand, and Indo-China. Silk production of China and Japan. Factory industries exemplified by textile manufactures of Bombay, Calcutta, Shanghai and Osaka. Overseas trade of India, China and Japan.

Tropical Grasslands and Tropical Highlands:

Orinoco Llanos and Interior Brazil. The Sudan, Angola, Northern and *Southern Rhodesia.* Tropical grasslands of Northern Australia. The East African Highlands. *The Sao Paulo Plateau of Brazil.*

Tropical Oases:

Egypt. Iraq. The lower Indus plain. Peruvian coastlands.

Lands of Summer Drought and Winter Rains:

The Mediterranean basin, with special attention to *Italy, California,* with special reference to production and marketing of fruit and vegetables. "Mediterranean" regions of *Australia, of Chile, and of the Cape Province.*

Humid Sub-tropical Lands:

South-Eastern United States of America. Eastern Australia. Natal and adjacent coastlands.

Mid-latitude Grasslands and Continental Interiors:

Interior Grasslands and Farmlands of North America: climatic conditions; agricultural and pastoral regions. Distribution of coalfields; localisation of industries (with special reference to the iron and steel industries); distribution of population. Positions and functions of Chicago, Buffalo and New York in inland and overseas commerce.

Grasslands of the Southern U.S.S.R. Pampas of Argentina and the Patagonian steppe. The Australian Grasslands. The South African Grasslands.

Mid-latitude Margins of the Pacific:

New Zealand. Tasmania. Farmlands of Southern Chile. British Columbia, Washington and Oregon.

Northern Forest Lands :

Eurasian coniferous forests : economic development in *Sweden* and *Finland*. North American coniferous forest lands; economic development of *Eastern Canada* and *New England*.

Agricultural and Industrial Lands of Europe :

Eastern Europe and southern Baltic lands; production of agricultural foodstuffs and forest products. Recent development and distribution of industries in the U.S.S.R.

Industrial Europe : industrial development and the localisation of industries in relation to supplies of raw materials, power, suitable labour, and to home and export markets for manufactures, as exemplified in the textile industries of Flanders, Yorkshire and Lancashire, in the metallurgical industries of South Wales, the North of England, the Ruhr and Belgium, and in the modern industrial development of Northern Italy. Intensive farming as a response to the needs of dense population.

Industrial Europe as the chief focus of world commerce; overland and overseas trade of the United Kingdom, Germany, France, Belgium and the Netherlands; their main sources of staple foodstuffs and the more important industrial raw materials—wheat, maize, meat, dairy produce, cane and beet sugar, cotton, wool, petroleum, rubber, timber and pulp products, vegetable oils and oil-seeds.

SECTION 4 : COMMERCIAL GEOGRAPHY.

The main currents of world trade in staple foodstuffs and in important industrial raw materials (as listed under Industrial Europe) and in manufactured goods. The physical and economic conditions determining (a) the main routes—by sea, rail, and inland waterways—by which these commodities are transported, (b) the sites and development of the chief ports serving this commerce. The main airways of the world.

(Education Gazette, 3 Nov. 1944)

Appendix A4

SYLLABUS IN SOCIAL SCIENCE

GENERAL INTRODUCTION

Owing to the growing complexity of modern life resulting from industrialisation and urbanisation, the social education of the youth of today can no longer be left to chance as in the past; the home and other normal influences are now insufficient as socially educative agencies and need to be supplemented by social education in the school.

Today the child needs a clearer idea of his social and economic milieu, in order that he may become more fully aware of his relationships with others and understand more clearly the nature of his social responsibilities and duties.

The subjects in the curriculum that serve as a medium for training a child in social understanding are history and geography. In recent years, however, doubt has been expressed in many quarters whether the teaching of these subjects has achieved this purpose. It has been said that the subject-matter has been dealt with too rigidly, that the teaching has been too scientific and academic, and directed to adult minds, and that stress has been laid on the memorising of facts at the expense of interpretation of the factual contents.

It has become all too evident that if the teaching of history and the teaching of geography are to lead the adolescent to social consciousness and a sense of responsibility, the approach to these subjects will need to be more social and humanistic, so that they will become broader studies of man in his environment, or—more widely still—of human life in communities. With this end in view, educationalists have suggested the introduction of a course which will include the study of both history and geography, in which, however, the content will be interpreted in the light of a richer human conception. Courses of this nature have been introduced into the curricula of schools in many countries under the name of social studies.

Courses in social studies are of two types—*Integrated* and *composite* courses. In an integrated course history and geography are taught as a single general subject; in a composite course the topics of each of these two subjects are treated separately, but they are of such a wide nature that they can be used to perform the socialising function for which the course as a whole is intended. Correlation of the topics of the two subjects can only be achieved if the teaching is directed towards this end.

Each of the two courses has its advantages and its limitations.

For the curriculum of the junior secondary school courses of both types have been drawn up, and are set out below. For either course 432 teaching-periods are allowed in the three years—108 in the first year, 144 in the second year and 180 in the third year. In the composite course the number of periods for history and for geography will be 216 each.

It should be borne in mind that some pupils will follow a course in social studies for the first two years only. The field to be covered in these two years is indicated in the syllabuses. In each course there is a section of the syllabus which pupils are not intended to study for an external examination.

Section B of each course has been introduced in order that new methods of teaching may be adopted. More specific reasons for the introduction of these sections will be found in the general remarks that preface each course.

COURSE I (COMPOSITE COURSE)

INTRODUCTION

The composite course in history and geography is designed to meet the needs of schools which desire

- (1) to adopt a more humanistic and social attitude to these subjects, and
- (2) to retain the means of training the adolescent in the techniques and imparting to him the conception associated with each subject.

The course in history offers the pupils, *inter alia*, greater opportunities of studying the progress of mankind in their own country and in the world, as a *connected* story, of acquiring a sense of time, and of examining the interplay of cause and effect. In the course in geography, the study of world-geography and physical geography is emphasised, and greater training can be given in the drawing of maps and diagrams.

Note: The field of study in each subject is covered by means of the discussion of topics.

COMPOSITE COURSE: (b) GEOGRAPHY

INTRODUCTION

Geography will be regarded as the study of the earth in its relation to mankind. The emphasis in the teaching should be on the social and humanistic, rather than on the logical and scientific, though these latter aspects cannot be disregarded and since geography is concerned with principles, their discovery and application.

The course in geography should be correlated, as far as possible, with the course in history, and attention should be paid to the historical aspects of geography. It may be said that while geography describes the social and economic life of modern times, history tells of the social and economic life of the past.

AIMS

The aims are:

- (a) to open the pupils' eyes to the geographical aspects of life that goes on around them;
- (b) to give them some understanding of life in unfamiliar places;
- (c) to build up some knowledge of geographical principles;
- (d) to help the pupils to become fair-minded, intelligent citizens of their home area, their country and the world.

GENERAL REMARKS

The number of periods allotted to the teaching of geography during the three years of the course is 216; of these 54 are allowed in the first year, and 72 and 90 in the second and third years respectively.

The course has been so planned that in the first two years pupils will make a regional and economic study of the world in broad outline and of Southern Africa. They will understand how man and his work is affected by geographical influences, and how he has by his own efforts used to advantage the

resources available to him to adjust himself to his environment. In the third year of the course more detailed study of certain important areas will be undertaken.

Section A represents the compulsory minimum of work that should be completed in each year of the course. Section B will not be subject to external examination. The topics are intended as suggestions, and selections may be made according to the ability or special interests of the class. Opportunity is provided for the teacher to arrange for projects and other forms of self-activity.

The optional topics suggested in Section B consist of geographical studies relating to:

- (a) the immediate locality;
- (b) South Africa;
- (c) the world.

A study of local conditions, under (a), should be undertaken at all schools at some time during the course. The pupils should be given individual assignments or group-assignments and should engage in some research into the history of the locality and the economic conditions prevailing in it: they should assemble statistics in connection with the climate, the population, industrial production and farming production, draw maps and keep records of their findings.

Practical work is essential. The following activities, modified to suit the powers of the pupils in each class, should be undertaken:

- (a) Map-drawing: the drawing of bold sketch maps of various aspects of the country studied.
- (b) Observations throughout the year: (i) the sun, moon, tides, temperature, wind, rain, etc.; (ii) seasonal changes; (iii) plant life and animal life.
- (c) Simple experiments or demonstrations, e.g. direction, the seasons, day and night, evaporation and condensation.
- (d) Records of the results of observation in tables, charts, diagrams or graphs.
- (e) Construction of simple apparatus.
- (f) Collection and preparation of specimens for the museum.

Constant use should be made of a good globe, and of other illustrative aids such as maps, models, charts and diagrams. Good sketch-maps drawn by the teacher should supplement

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wall-maps. Each pupil should have his own atlas. Interest should be stimulated by means of pictures, albums, scrapbooks of newspaper-cuttings, labels, stamps, specimens, etc., prepared by the pupils. A good selection of travel stories, geographical reference-books and magazines should be included in the school library.

The teacher should grasp every opportunity of bringing the pupil into closer contact with people living in other parts of South Africa and in other parts of the world. Lectures, talks by visitors, films, the radio, school excursions, visits and tours to places of geographical interest and correspondence with children in other parts of the world are means to this end.

SYLLABUS

Section A

(The number of teaching-periods indicated for each section is intended as a guide to teachers.)

First Year

(1) *Climate*

A series of lessons should be given in which the teacher should endeavour not only to establish general climatic principles, but also to build up the conception of "natural region", through discussing the characteristics and location of the major climatic regions of the world.

(i) *Temperature*: The influence of latitude, altitude, distance from the ocean, ocean currents and winds on temperature, with reference to specific examples.

(ii) *Air-Pressure*: The barometer as a weather prophet; the trade winds and Westerlies; Monsoons.

(iii) *Rainfall*: The influence of winds; the direction of mountain ranges and ocean-currents on rainfall; the three main types of rainfall. (14)

(2) *Major Natural Regions of the World*

General description of the following major natural regions:

Equatorial forests, tropical grasslands, hot deserts, Monsoon regions, sub-tropical eastern margins, Mediterranean regions, cool temperate oceanic regions, temperate grasslands, coniferous forests and tundra lands.

The relation between the climate, natural vegetation, products and human occupations of each region should be dis-

cussed, and reference should be made to the countries and some of the important towns of each region. (25)

(3) *World Distribution of Sources of Power and Minerals*

The most important areas where the following are produced: water power, coal, petroleum, iron ore, copper, tin and gold. (5)

Total: (44)

Second Year

(4) *Regional Study of Africa in broad outline*

This should be regarded as an application of the principles already studied. (Detailed studies of political divisions will not be required.)

(5) *Regions south of the Zambesi and Kunene Rivers*

(i) The Union of South Africa: Position, relief, climate, natural vegetation, soil erosion and water conservation, afforestation; fruit farming, maize and wheat farming; the sugar industry, tobacco farming, sheep and cattle farming; minerals (gold, diamonds, coal, iron ore, manganese, chromium, copper, asbestos and limestone); the manufacturing industries; communications, important towns, harbours, trade and population.

(ii) A general survey of South West Africa, Southern Rhodesia, Mozambique and the Protectorates. (35)

(6) *Physical Geography*

(i) *Latitude and Longitude*: Chief lines of latitude and longitude and their importance; standard time.

(ii) *The Movements of the Earth*: The causes of day and night; the seasons. (These studies should be of an observational nature.)

(iii) *Methods of determining Direction*: Methods of finding the North by means of a show-stick, a watch and the Southern Cross. (13)

Total: (62)

Third Year

(7) *Europe*

A general survey of the position, relief, climate, natural vegetation, occupations and political divisions. The following should receive special attention: Great Britain, the Netherlands, Belgium, France, Germany, Italy, the Iberian Peninsula, Scandinavia, Switzerland and the U.S.S.R. (Attention should be paid to farming, lumbering, fishing, mining, manufacturing industries and sources of power.) (45)

(8) *North-Eastern part of North America*

The factors which favoured the development of North-Eastern U.S.A. The industrial areas along the East Coast, Pennsylvania and on the Great Lakes should receive particular attention. (10)

(9) *World Trade and Commerce*

The most important ocean-routes with their ports and trade; the air-routes between the Union of South Africa and Europe. (15)

(10) *A geographical description of any ONE of the following:*

(a) Canada; (b) India and Pakistan; (c) Australia and New Zealand. (10)

Total: (80)

Section B

(Ten teaching periods are allowed in each of the three years for this section.)

Local Study

Teachers are referred to "Man and his Environment", an excellent local study issued by the Buffalo Catchment Association, King William's Town, and to the publication of the Geographical Association of Great Britain which will be helpful for any type of environment.

South Africa

- (1) Irrigation-schemes.
- (2) The work of Onderstepoort and other agricultural research-centres in the combating of animal-diseases and plant-pests.
- (3) The public utilities of the Union: I.S.C.O.R. and E.S.C.O.M.; the Fishing Corporation, etc.
- (4) The detailed study of an industry, e.g. gold, sugar, forestry.
- (5) Ships in the harbour.

The World

- (1) The Mediterranean lands.
- (2) The British Colonial Empire.
- (3) Ocean currents.
- (4) World population: race-groups and distribution.
- (5) Another country not previously studied.

SOCIAL SCIENCE: COURSE II (INTEGRATED COURSE)

INTRODUCTION

The course in social science aims at meeting the needs of schools desiring a greater degree of integration between history and geography than is possible in separate courses. In addition it allows more scope for aspects of the work which cannot conveniently be labelled history or geography or civics.

Social science should not be regarded as a composite course in history and geography and civics, but as an integrated study of man and his social, economic, political and geographical environment—or, in other words, the "world" in which he lives.

GENERAL AIMS

In order to gain insight into his "world" as it is to-day, it is necessary for the child, as a future citizen, to know how his world has come into being, and to understand the factors which have made it what it is to-day. It will, therefore, be necessary to give the child a clearer idea of himself as an *individual*

- (a) living in a *community* of people, some like him, some unlike, all resembling him in that they live together for mutual service and the common good;
- (b) living in a *country* with a geography, a history, a socio-economic structure and a form of government—all of which together make up the national environment in which he will have to take his place as a citizen;
- (c) living in a *world* shaped by the past and continually changing because of man's gradual conquest and utilization of natural forces.

In terms of the demands of society, the ultimate aim of social science is to establish healthy human relationships; in terms of the needs of the individual, the ultimate aim of social science is the fullest development of each pupil as a social being. Teaching therefore should not be limited to the amassing of factual information; it should cover all the aspects of the pupil's development which may be brought within the compass of social science.

The teaching should also be directed towards the development of specific ideals, which may arise from the course as

a whole, or from specific sections of it. Examples of such ideals are service, good citizenship, social justice and racial harmony.

As the pupil progresses in this course, he should gradually perceive that man's activities and ways of living, now and in the past, are in effect his efforts to adjust himself completely to his surroundings and to use to advantage the resources available to him. This process is not complete and in it the pupil will have to take his part.

GENERAL REMARKS

The course is a unitary course for the first and second years, the two years in which social science is compulsory. A separate course, designed to follow on the work of the first and the second year, has been drawn up for the third year.

Each course consists of two sections. Section A is compulsory; in Section B a number of topics are suggested, from which teachers will be allowed to make their choice. Other topics appropriate to the study may be chosen with the approval of the circuit inspector. For pupils who follow this course only, for the first two years schools are allowed to select for optional study topics listed in Section A or B in the third-year course. Approximately forty periods have been allowed for these topics in the second and in the third year.

A detailed scheme of work to be done under Section A during the three years has been drawn up for the guidance of teachers, and is appended. The guidance given should, however, not be taken to mean that the scheme set out must be followed rigidly or that equal attention must be given to each aspect. It is intended that a great deal be left to the teacher, as regards both the content and the treatment. Though, however, some elasticity is allowed and even encouraged, the study of any topic should result in the acquisition of sufficient knowledge.

As additional time for more extensive or more intensive study of the compulsory topics may be taken from the time allowed for the optional sections of the course, schools wishing to do so may engage in a project in which a number of allied topics of educational value are studied. *The British Settlers*, for example, in addition to receiving the treatment suggested in the syllabus, may lead to further study of industrial changes, land tenure, sheep-farming, the freedom of the Press, our newspapers, constitutional developments, sailing-ships and transport a century ago, missionaries among the

Bantu, Thomas Pringle and other English South African writers. The topic *Trade with the outside world* may lead to the following additional studies: from barter to trade; the meaning of money; Johannesburg and Cape Town to-day; the rising cost of living as a result of devaluation.

When such wider treatment is undertaken, the teacher's scheme of work should indicate very clearly which the additional aspects studied are.

Although in some study-units in this course the approach is more distinctively historical and in others more geographical, it is intended, as far as the pupil is concerned, that throughout the course, each topic should be treated as a unit, and that he be not made aware of the two strands of thought. He should learn his history through his geography, and his geography through his history. Economic, social, cultural, religious and other aspects should be similarly integrated.

The sources from which material is taken should be as varied as possible and should include films, a wide selection of books and pictures, and actual articles. Talk by visitors and excursions to factories, shops and places such as the post-office and the railway-station also provide material.

Social science should be marked by activity on the part of the pupils: they should find out things for themselves, look up references and be given every opportunity and encouragement to think things out for themselves. In the local studies, especially they should learn to observe, to draw conclusions, to suggest solutions and to apply them to problems.

In general, the subject matter of the course is set out in the form of topics or units for study. The treatment may take various forms, the most usual being a series of lessons on the prescribed subjects. Because of the integrated nature of the course, however, it lends itself very readily to an approach by means of projects, study-themes or general activity-methods.

It will be noted that some elements are repeated or implied under various headings. The climate of the Western Province, for example, is dealt with in the story of *the French Huguenots*, *Our Trade with the Outside World* and in *Daily life in old Cape Town*, and is related to the study of early civilizations. The teacher should continually bear this in mind and link up one study with another.

Throughout the course, attention should be paid to current affairs or events, or geographical or social matters of interest which fit in with the general spirit of the course. The war in

Korea may well lead to some study of the geography of Eastern Asia, Chinese culture, American interests in the Pacific; avalanches in Switzerland to a study of that country; or the death of a great statesman to a biographical treatment of his life.

The optional topics listed in Section B should not be regarded as separate entities but should be correlated with work done in other parts of the course. In this section, particularly, a somewhat unorthodox treatment is encouraged. Teachers may also consider letting groups of three or four children together tackle one subject, while other groups do other topics.

In this course, teachers are given a wide range of topics, some of which allow of intensive treatment on a high level. Teachers should remember at all times that they have junior adolescents in their classes and that the range and treatment should be adapted accordingly.

SYLLABUS

Section A

(The number of periods suggested for each topic is indicated.)

First and Second Years

Theme: Our Country and its Links with the Outside World

- (1) Revision of the geography of South Africa. (12)
- (2) The people of South Africa:

The Bushmen and the Hottentots; the Bantu; the Afrikaners; the British Settlers; the German Settlers; the Cape Coloured people and the Cape Malays; the Indians. (90)
- (3) Communications: travel and transport in South Africa. (6)
- (4) Sea-routes and air-routes linking South Africa with the rest of the world. (5)
- (5) Our trade with the outside world. (20)
- (6) How we are governed. (25)
- (7) Our neighbours. (30)
- (8) Our associates in the Commonwealth of Nations. (20)

*Third Year**Theme: The World we Live In*

- (1) Geographical survey of the world. (18)
- (2) The Mediterranean lands and what we owe to early civilizations. (20)
- (3) Europe in the Middle Ages; a picture of social life then. (5)
- (4) Our expanding world. (15)
- (5) The rise of modern powers:
Great Britain; the United States of America; Germany; Russia; Japan. (45)
- (6) The two World Wars and movements towards peace. (10)
- (7) South Africa as an independent member of the Commonwealth of Nations. (15)
- (8) The conquest of nature by man. (12)

Section B: Optional Subjects

(Eighty-four teaching periods are allowed for this section in the second and third years.)

First and Second Years

- (1) More intensive or extensive treatment of subjects listed in Section A.
- (2) Lessons arising out of current events: historical, economic or cultural.
- (3) Daily life and cultural life of the people of South Africa during a particular period, e.g. Life in old Cape Town; Daily life of the Voortrekkers.
- (4) National, provincial and local emblems and mottos.
- (5) Missionaries to South Africa.
- (6) Slavery.
- (7) More intensive study of non-European culture in South Africa, e.g. Bushman paintings; Malay songs.
- (8) Bantu law, custom and music.
- (9) Drawing and reading of maps and diagrams.
- (10) Mountains or rivers and their effect on the life of man.
- (11) The story of ships and shipping.

- (12) Life in the temperate grasslands.
- (13) Any occupation not dealt with previously.
- (14) Biographical studies, e.g. Jan Hofmeyr; General J. B. M. Hertzog, General J. C. Smuts. (Teachers should ascertain what biographies have been studied in the primary school.)
- (15) The community, and the occupation of the people.
- (16) Any topic in Section A or Section B of the third-year course (for pupils not continuing with the course in the third year). (44)

Third Year

- (1) More intensive or extensive treatment of subjects listed in Section A.
- (2) Lessons arising out of current events: historical, economical, or cultural.
- (3) General study of world population: race-groups and distribution, and reasons for distribution.
- (4) Study of a specific industrial region, e.g., the Witwatersrand, Lancashire, Pennsylvania.
- (5) The forest regions of the world.
- (6) Transcontinental railways and the opening-up of the interior of continents.
- (7) Some great cities, e.g. London, Paris, Rome, New York, Calcutta, Shanghai.
- (8) Money and banking: how we pay for our imports.
- (9) Trade unions: their power and significance.
- (10) Social legislation: factory acts, public-health acts, national insurance, old-age pensions, workmen's compensation, prison reforms, free and compulsory education.
- (11) The influence of the newspaper, the film and the radio.
- (12) The emancipation of women.
- (13) Great musicians of the past centuries.
- (14) Modern art in South Africa: painting, architecture and sculpture.
- (15) Great personages of our age, e.g. F. D. Roosevelt, Churchill, Stalin, Albert Schweitzer, Marie Curie, Admiral Byrd, Lord Rutherford, Lord Nuffield.

Andrew Carnegie, Sun Yat Sen, Helen Keller, Beveridge, Nansen, Chaim Weizmann, Booker Washington, Sir Wilfred Grenfell, Elizabeth Fry. (40)

THE SYLLABUS:
DETAILED SCHEME FOR SECTION A

First and Second Year

Our Country and its Links with the Outside World

(1) *Geography of South Africa*

Revision of build, climate, natural-vegetation regions of South Africa and South West Africa as a preparation for the studies which follow. (12)

(2) *The People of South Africa*

The Bushmen and the Hottentots

Inhabitants of the Cape before the arrival of Europeans; description and mode of life; how the climate, the natural vegetation and animal-life helped them to live the life they led; Bushman paintings. (3)

The Bantu

Areas inhabited by them with special reference to the Transkei and Border areas; climate; type of vegetation; division into tribes under chiefs; mode of life; cattle as a form of wealth and basis of economic and cultural life; witch-doctors; lobola and status of women.

Clash on Border: failure of attempts at segregation (Lord Charles Somerset); failure of policy of control (Sir Harry Smith); Sir George Grey's Native policy; brief treatment of Zulus, Basutos and Bechuanas.

Native administration to-day: Governor-General; Native Affairs Department; Native Commissioners; Chiefs and headmen; the Bunga and District Councils; the Native Trust.

Urban locations and problems: mine compounds; importance of Native labour in the mines, in industries, and on the farms. (15)

The Afrikaners

The Dutch. Country of origin; its situation, build and climate; its social life; Dutch struggle for independence

and religious freedom; Dutch sea-power and the Dutch East India Company; Jan van Riebeeck and the settlement of the Cape.

The French Huguenots. Country of origin: its situation, climate and agricultural importance; social life; historical reasons for their migration to the Cape.

The area settled by the Dutch and the French (Cape Peninsula and Western Province); its climate favourable for introduction of wine and fruit farming.

The spread of the Afrikaners in the Cape; cattle-farmers in the interior; dispersal over the whole of South Africa (Great Trek); social and economic life of the people at the Cape and in the interior.

Gradual emergence of the Afrikaner nation; rise of Afrikaans; pioneers of Afrikaans; recognition of Afrikaans in schools, the Church and Parliament. (26)

The British

The country of their origin: situation, climate and factors making for its industrial and commercial importance.

Industrial Revolution in bare outline to show rise of the factory system with its early evils; social and economic life in England after the Napoleonic Wars; occupation of the Cape by Britain.

The coming and the settlement of the 1820 Settlers; the district to which they came; geography of the Eastern Cape; climate, natural vegetation; chief towns of Eastern Province to-day; Port Elizabeth with its wool trade, shoe-factories, motor-assembly plants, etc.

1820 Settlers beginning of a continuous stream of people from England, Scotland and Ireland; immigration after the Second World War. (26)

The Germans

The country of their origin in very broad outline only.

(a) German immigrants on Border after the Xhosa National Suicide; agricultural development of the Border; East London, King William's Town and German settlements such as Stutterheim.

(b) German settlers in Natal and on the Cape Flats,

- (c) The Germans in South West Africa; history of Settlement (Lüderitz, German annexation); difficulties with Hereros and Rehoboths; farming and mining in South West Africa. (6)

The Cape Coloured people and the Cape Malays

Their origin, development, economic importance and cultural influence. (7)

The Indians (chiefly in Natal)

Short story of the settlement of Natal; geography of Natal: its climate and vegetation; Durban and Pietermaritzburg; development of sugar industry and importation of the Indians; their country of origin; geographical survey in very broad outline only. (7)

(3) *Communications: Travel and Transport in South Africa*

- (a) Means of transport: animal, motor, rail, air and ships.
 (b) Storage: elevators, ice-chambers, refrigeration-trucks.
 (c) The post-office.
 (d) Our railway system: main lines and junctions; a national enterprise.
 (e) National road.
 (f) Transport and travel in the past: waggon, post-cart, horseback; old disused roads (if any) in the neighbourhood. (6)

(4) *Sea-routes and air-routes linking South Africa with the rest of the world*

Routes of Vasco da Gama and Diaz; Cornelius Houtman; Trans-African travel.

Sea-routes and air-routes (studied on the globe) linking South Africa with England, U.S.A., the Continent, India, Australia.

Effects of opening Suez Canal on Cape route. (5)

(5) *Our trade with the outside world*

Our chief exports: gold, diamonds, wool, maize, fruit and wine.

Our chief imports and the sources from which we obtain them. (If not already treated elsewhere, a very brief geo-

- (c) The Germans in South West Africa; history of Settlement (Lüderitz, German annexation); difficulties with Hereros and Rehoboths; farming and mining in South West Africa. (6)

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Effects of opening Suez Canal on Cape route. (5)

(5) *Our trade with the outside world*

Our chief exports: gold, diamonds, wool, maize, fruit and wine.

Our chief imports and the sources from which we obtain them. (If not already treated elsewhere, a very brief geo-

graphical survey of their country of origin: situation. climate in general.)

The following list is suggested from which a few commodities should be selected: rice, rubber, coffee, tea, cotton, silk, wheat (Australia); fish, timber (Baltic countries, North America, Burma, Australia); machinery (including agricultural machinery), paper, petrol, oil and paraffin, motor-cars, glass, tinned meat (Chicago, Argentine); cocoa. (20)

(6) *How we are governed*

Introductory studies should include a brief survey of the development of self-government in the Cape: the Dutch commanders and governors with the Council of Policy; the British governors ruling alone; the Council of Advice; Representative Government; Responsible Government. No details are required, but merely a clear understanding how the people gradually obtained a greater say in the government will be expected. Reference should also be made to the presidents of the Republics and the Volksraads.

The failure of the Grey and Carnarvon attempts should be mentioned as illustrating the difficulties of uniting South Africa.

After the Boer War, the co-existence of the four separate colonies; economic development, especially in mining and transport; reasons for need of closer Union; Union achieved at National Convention; South Africa Act.

How our laws are made.—Governor-General, Senate and House of Assembly (Cabinet) at Cape Town; Administrators and Provincial Councils.

How our laws are carried out.—The ministers, the civil service, with headquarters at Pretoria; function of main departments of the civil service.

What happens when a law is broken.—Magistrate, Supreme Court, Court of Appeal at Bloemfontein. Functions of attorneys and advocates.

How local government is carried on.—The provincial councils, municipal and divisional councils. (25)

(7) *Our neighbours*

Rhodesia, Bechuanaland Protectorate, Basutoland, Swaziland, Portuguese East Africa, Angola, the Belgian Congo, Kenya and Tanganyika.

In the study of each of these, attention should be paid to the following:

- (a) Their situation, climatic regions, products and industries and outstanding physical features only. (No details.)
- (b) A few important historical facts and interesting biographical stories, e.g. Rhodes and Lobengula, Khamu the Great, the South African forces in Tanganyika in the war of 1914-1918.
- (c) Our cultural and economic links with them, e.g. Afrikaners settlements in Angola and Tanganyika; Belgians from the Congo holidaying in the Union; students in our schools and universities. (30)

(8) *Our associates in the Commonwealth of Nations* (Not dealt with elsewhere in the course)

Canada, Australia, New Zealand, India, Pakistan, Ceylon, Ireland.

The treatment is similar to that suggested for "Our neighbours".

A few suggested topics are the Empire Games, the Springboks in New Zealand, South African diplomatic representatives, the French Canadians. (20)

Third Year

The World we Live In

(1) A survey of the natural regions of the world in broad outline only, with a view to helping pupils to understand the geographical aspects of subsequent studies. (18)

(2) How *early civilizations* grew up around the Mediterranean Sea.

(a) Outline-study of the geography of the Mediterranean regions.

(b) What we owe to the ancient world in religion, writing, agriculture and irrigation, science and medicine, art and architecture, literature and law; how the Roman Empire made possible the rise and spread of Christianity and of law and order. (20)

(3) *Europe in the Middle Ages*: a picture of social life then; the Roman Catholic Church and monasticism; feudalism and chivalry; the known world then. (5)

(4) *Our expanding world*

(a) Great discoveries not mentioned previously, e.g. voyages of Columbus, Drake, Magellan, Tasman.

- (b) Colonization and trading-companies: English East India Company, Dutch East India Company, Hudson Bay Company, Muscovy Company; brief survey of the countries with which they traded and the nature of their trade. (15)

(5) *The rise of modern powers*

Great Britain

Factors making it a great naval and commercial power; geographical extent of the British Empire in the nineteenth century, when it was the leading world power. (One suggested treatment: Great Britain at the time of the Jubilee of Queen Victoria.) (10)

United States of America

The independence of the American colonies (Washington); expansion; the rise of the U.S.A.; similarities in American and South African history, e.g. early settlement of the Dutch; expansion to the West (cf. Greak Trek); discovery of minerals; comparison of the life of the trekboer and western ranchers; slavery and the colour problem (Lincoln).

The U.S.A. as an industrial, agricultural, financial and military world-power to-day. (15)

Germany

Brief reference to the unification of Germany under Bismarck as introduction; growth of Germany as an industrial power; factors making Germany a military power; German colonization in Africa. (7)

Russia

The country and its people (Europe and Asia). The backwardness of Czarist Russia compared with other European powers, culturally and economically; defeat of Russia in Japanese War and the first Great War; revolution; the Bolsheviks; the rise of the U.S.S.R. as a world power.

The communist system (economic aspect); factors making U.S.S.R. an industrial, agricultural and military power (Ukraine, oil, minerals, manpower). (8)

Japan

The country and its people; the modernization of Japan; expansion: Korea, Formosa, Manchuria; defeat of Russia, 1905; Japan's position favourable for development as a commercial power; rise as an industrial power. (5)

(6) *The two World Wars and movements towards peace.* Economic and political rivalry; geographical extent of modern war: global war; modern armament; total war; economic aspects and consequences of wars; attempts to find new safeguards of peace: international arbitration, The Hague Court of Justice, League of Nations; United Nations Organization and its subsidiary organs; concept of international law and attempts to promote idea of "world citizenship". (10)

(7) *South Africa as an independent member of the Commonwealth of Nations.* Increasing economic importance of South Africa after Union and growing concept of nationhood; active participation in the first Great War; Smuts member of the Imperial War Cabinet; Union represented at peace conference; membership of League of Nations and significance of membership; Imperial conferences of 1926, 1931; Statute of Westminster; further development.

As a subsidiary study the later history of South-West Africa should be considered.

1919 South-West Africa a mandated territory under Union; migration from Union and Angola; economic development (railways and karakul, diamonds); present position in regard to United Nations Organization; representation in Union Parliament. (15)

(8) *The conquest of Nature by man.* How the rapid progress of science in the nineteenth and twentieth centuries has changed our world by helping man to overcome natural obstacles and by enabling him to utilize natural power. Two or more of the following themes could be chosen as units of study. (In addition to the scientific aspect, the social and economic aspects should be studied).

- (a) The work of modern engineers in reclaiming land from the sea, developing irrigation-schemes and constructing railways and modern highways.
- (b) The achievements of medical science in controlling epidemics and combating disease, especially tropical diseases.

(Education Gazette, 18 Sept. 1952)

Appendix A5

JUNIOR SECONDARY COURSE: SOCIAL STUDIES
(COMPOSITE COURSE): GEOGRAPHY

The following revised syllabus for the Geography Section in Social Studies (Composite Course) will come into effect from January 1964.

SYLLABUS

SECTION A

(The number of teaching-periods indicated for each section is intended merely as a guide to teachers.)

FIRST YEAR

1. *Physical Geography*

(i) Latitude and Longitude: Chief lines of latitude and their importance.

(ii) The movements of the Earth: Causes of day and night; the seasons. (These studies to be based on observation.)

2. *Climate*

A series of lessons should be given in which the teacher should endeavour to establish not only general climatic principles, but also to build up the conception of "natural region", through discussing the characteristics and location of the major climatic regions of the world.

(i) Temperature: The influence of latitude, altitude, distance from the ocean, ocean currents and winds on temperature, with reference to specific examples.

(ii) Air-pressure: The barometer as a weather prophet, the Trade winds and Westerlies, Monsoons.

(iii) Rainfall: The influence of wind, the direction of mountain ranges and ocean-currents on rainfall; the three main types of rainfall. (14)

3. *Major Natural Regions of the World*

General description of the major natural regions; Equatorial forests, tropical grasslands, hot deserts, Monsoon regions, sub-tropical eastern margins, Mediterranean regions, cool temperate oceanic regions, temperate grasslands, coniferous forests and tundra lands. With reference to each of these regions;

(i) the relation between the climate, natural vegetation, products and human occupations of each region should be discussed.

(ii) reference should be made to the countries and some of the important towns, sources of power and minerals of each region. (35)

Total (54)

SECOND YEAR

4. *Regional study of Africa in broad outline*

This should be regarded as an application of the principles already studied. (20)

5. *Regions south of the Zambezi and Kunene Rivers*

(i) The Republic of South Africa: Position, relief, climate, natural vegetation, soil erosion and water conservation, irrigation, afforestation; fruit farming, maize and wheat farming; the sugar industry, tobacco farming, sheep and cattle farming, fishing; minerals (gold, diamonds, coal, iron ore, manganese, chromium, copper, asbestos and limestone); the manufacturing industries; communications, important towns, harbours, trade and population.

(ii) A general survey of South West Africa, Southern Rhodesia, Mozambique and the Protectorates. (42)

Total (62)

THIRD YEAR

6. *Europe*

(i) A general survey of the position, relief, climate, natural vegetation, occupations and political divisions.

(ii) The following should receive special attention: British Isles, the Netherlands, France, West Germany and U.S.S.R. (Attention should be paid to farming, lumbering, fishing, mining, manufacturing industries and sources of power.)

(iii) The following should be done in broad outline only: Belgium, Italy, Iberian Peninsula, Greece, Switzerland, Norway, Sweden, Denmark. (50)

7. *A study of the World Map*

A knowledge of the situation of the most important towns and rivers on a world map in order to familiarize the pupil with the world as a whole. Areas to receive special attention on this map are: North-eastern U.S.A. and Eastern Canada,

Australia and New Zealand, Chile and Argentine, Antarctica and the islands off South Africa, i.e. Tristan da Cunha, Gough, Bouvet, Marion and St. Helena. (20)

8. *World Trade and Commerce*

The most important ocean-routes with their ports and trade; the air-routes to and from the Republic of South Africa. (10)

Total (80)

SECTION B

In the first year of the course no specific number of periods has been allowed for Section B, but such practical work as arises naturally from the syllabus should be undertaken. This may be individual work or group work or a class project.

Ten teaching periods are allowed in each of the second and third years of the course for this section.

Examples for topics under this section are:

Local Study

Teachers are referred to "Man and his Environment", an excellent local study issued by the Buffalo Catchment Association, King William's Town, and "The Cape Peninsula" edited by J. A. Mabbutt and to the publications of the Geographical Association of Great Britain which will be helpful for any type of environment.

South Africa

1. An irrigation scheme.
2. An experimental farm.
3. A public utility: Iscor, Escom, Sasol, etc.
4. A detailed study of an industry: gold, sugar, forestry, fishing, diamonds, wool, etc.
5. A seaport.

The World

1. The Mediterranean lands.
2. Ocean currents.
3. World population.
4. Any country not previously studied in detail.
5. Modern methods of transport.

(Education Gazette, 23 Jan. 1964)

JUNIOR SECONDARY COURSE: SYLLABUS IN
HISTORY-GEOGRAPHY (PREVIOUSLY SOCIAL
STUDIES)

The following syllabus in History-Geography for the Junior Secondary Course will be introduced as from 1st January, 1968.

The syllabus will be introduced simultaneously into Standard VI and Standard VII in 1968, and the first Junior Certificate Examination on this syllabus will be held in November 1969 (internal).

The subject, History-Geography, replaces the subject, Social Studies.

JUNIOR SECONDARY COURSE (STANDARDS VI, VII
AND VIII): GEOGRAPHY

A. INTRODUCTION

In a rapidly changing world school Geography must be adapted to the needs of a modern age and pupils must be given as much contact with reality as possible. Geography can help to give an understanding of the world around them and of the modern developments which affect their everyday lives at present, and which must inevitably become stronger influences in the years ahead.

The syllabus has been constructed to cater for the needs of two distinct groups of pupils—those who discontinue the study of Geography after Standard VI and those who continue to take it beyond that level. For this reason the Standard VI syllabus is fairly self-contained, but at the same time forms a useful foundation for the work to be done in the higher standards.

The Standard VI syllabus commences with Mapwork, the aim being to develop a familiarity with one of the geographer's main tools. A knowledge of the World Political and Physical Maps can be regarded as indispensable to the pupil who does not continue the subject beyond this level. This is followed by an introduction to the Solar System, but omitting altogether the proofs of the Earth's shape—something which is already perfectly obvious in this age of space exploration. A study of South Africa follows with special emphasis on a more detailed treatment of at least two out of ten specified regions.

This should constitute a syllabus which can be covered in a normal time allocation.

While it can be regarded as a continuation of the Standard VI work and a preparation for that of Standards IX and X, the syllabus for Standards VII and VIII should form a unit of its own. Commencing with Mapwork and Physical Geography in Standard VII, a section on Africa follows. The Standard VII course reflects the first of the completely new departures mentioned earlier, viz. the section on Rural and Urban Geography. Its inclusion is not only desirable but long overdue. The topic provides ample opportunity for simple field-work and project activity by the pupils.

Standard VIII commences with further development of the Physical Geography and Mapwork of Standards VI and VII. A regional study of Europe is compulsory. The second of the new items appears here, viz. the Geography of World Population. Since this is the most urgent problem facing mankind

to-day, pupils should be made aware of the fact that the world's population is likely to double by the end of this Century and of the problems this will inevitably pose.

B. AIMS

The aims in the teaching of Geography may be formulated as follows:

- (a) to stimulate the interest of the pupils in the geographical aspects of life that goes on around them;
- (b) to give them some understanding of life in unfamiliar places;
- (c) to build up some knowledge of geographical principles; and
- (d) to help the pupils to become fair-minded, intelligent citizens of their home area, their country and the world.

GEOGRAPHY

SYLLABUS

STANDARD VI

I. MAPWORK

A. Political Maps

1. Southern Africa (south of latitude 10°S)—all states and capitals.
2. Africa.
3. Europe.
4. Australasia.
Asia.
5. South America.
North America.
6. The World (also the globe).
7. Method of *fixing the position* of a place, i.e. by the intersection of lines of longitude and latitude.
From 2 to 6 only the most important states, and capitals of the most important countries. All this section is to be linked wherever possible with *newspapers* and *radio-news* geography, as must the rest of the year's work.

B. Physical Maps

The World (refer also to the globe). Stress the *position* of the main mountains, plains, rivers, lakes, seas and oceans.

(Since this mapwork has already been done in the higher primary standards, maps in Sections A and B do not have to be drawn, but must be read and where possible interpreted, and outline maps with details may be supplied.)

II. PHYSICAL GEOGRAPHY

The Solar System and the Earth

1. The place of the Earth in the Solar System.
2. The Solar System in general (very simply).
3. The place of the Solar System in our galaxy (very simply).
4. *The Earth in particular*
 - (i) Shape and size (no proofs).
 - (ii) Movements of the Earth (simply).
 - (a) Rotation and chief results (day and night; very simple understanding of time differences).
 - (b) Revolution and constant inclination of the Earth's axis and chief results (seasons; length of day and night; equinoxes and solstices—very simply).
Practical work: Keeping of records, e.g., times of sunrise and sunset.

III. REPUBLIC OF SOUTH AFRICA

1. Political and physical map.
2. Relief and drainage.
3. Climate
 - (i) General impression of January and July temperature maps using colours where possible.
 - (ii) General impression of average annual rainfall maps using colours where possible. Also pay attention to seasonal distribution, type of rain, drought and water conservation.
4. Very simple natural vegetation map.
5. Soil erosion and conservation in South Africa.
6. Simplified population map and simplified explanation of reasons for distribution of population. (Use diagrams to show the racial composition thereof.)

7. A study of the main economic activities of the Republic, especially the production of maize, wheat, sugar, fruit and wool; the mining of gold, diamonds and coal; the fishing industry and manufacturing industries. The factors influencing these activities.
8. A study of at least TWO of the following, one preferably a local study.
 Highveld (with particular reference to industries and mines).
 Coastal Belt of Natal.
 S.W. Cape Mediterranean Region.
 Transvaal Lowveld.
 Natal Midlands.
 Transvaal Middleveld.
 Border/Eastern Province Area.
 Karoo.
 Kalahari.

This study is to be undertaken, with the aid of maps using the following headings:

- (i) Position
- (ii) Relief and drainage.
- (iii) Climate.
- (iv) Natural Vegetation.
- (v) Economically important human activities and transport.
- (vi) Distribution of population and chief towns.
- (vii) Trade (chief exports and imports).

STANDARD VII

I. MAPWORK

Basic Mapwork (Reading and interpretation only).

Using the 1:50,000 *South African topographic map* of your *OWN LOCAL AREA* (or of the nearest obtainable area—list of all sheets published available from the Government Printer) study the basic elements of a map, viz.

1. Direction (using compass, watch and sun).
2. Scale (e.g. size of school grounds, distances to local landmarks, etc.).
3. Conventional signs (only the most important which appear on the relevant map).
4. Representation of height above sea-level by means of contours.

II. PHYSICAL GEOGRAPHY

Climate

1. Difference between weather and climate.
2. Temperature—factors which influence it.
3. Pressure and Winds
 - (i) Factors which influence pressure.
 - (ii) World pressure belts—general principles.
 - (iii) The Planetary Wind System.
4. Precipitation
 - (i) Main forms—rain, hail, snow, frost and dew.
 - (ii) Factors which influence rainfall.
 - (iii) Simple explanation of types of rainfall—convective, cyclonic and relief.
5. Practical Work
 - (i) Keeping records of observations of at least three of the following: temperature, pressure, rainfall, wind directions and cloudiness.
 - (ii) Simple concept of isotherms, isobars and isohyets.
 - (iii) Reading of temperature and rainfall maps.
 - (iv) Simple introduction to weather maps.

III. CHIEF NATURAL REGIONS OF THE WORLD

A study of the following:

1. Equatorial Rain Forest Region.
2. Savanna Region.
3. Monsoon Region.
4. Temperate Grassland Region.
5. Warm Temperate East Coast Region (Sub-Tropical East Coast Region).
6. Arid Regions.
7. Mediterranean Region.
8. Cool Temperate Oceanic West Coast Region.
9. Coniferous Region.
10. Tundra and Ice Cap Regions.

These regions are to be dealt with under the following headings:

Position and distribution.

The *relationship* between position, climate, natural vegetation, animal life (where applicable) and human activities dependent on the natural environment such as agriculture, forestry and fishing.

IV. AFRICA

1. Position and political divisions.
2. Relief and drainage.

3. Climates (maps and simple explanation).
4. Natural Vegetation map.
5. Distribution of population.

V. GEOGRAPHY OF RURAL AND URBAN SETTLEMENT IN THE
REPUBLIC OF SOUTH AFRICA AND SOUTH WEST AFRICA

- A. *Rural Settlement*—farm settlement and land use.
Study *ONE* of the following:
- A Maize Farm, for example, in the Highveld.
 - A Sheep Farm, for example, in the Karoo or South West Africa.
 - A Wine Farm, for example, in the Western Province.
 - A Sugar Estate, for example, in Natal.
 - A Citrus Farm, for example, in the Lowveld or Sundays Valley.
 - A Wheat Farm, for example, in the Eastern Free State or Boland.
 - A Tobacco Farm, for example, in the Transvaal Middleveld or Little Karoo.
 - A Cattle Farm, for example, in the Bushveld or South West Africa.

OR

- B. *Urban Settlement*
1. Reasons for the development of urban settlements and the depopulation of the platteland.
 2. Characteristics of an important urban settlement:
 - (a) Residential zones:
 - (i) European
 - (ii) Non-European
 - (b) Central Business District.
 - (c) Industrial Zone.
 - (d) Market gardening and dairying zone.
 3. Functions of urban settlements:
 - (a) Marketing.
 - (b) Manufacturing.
 - (c) Social.
 - (d) Others of importance.
 4. The role of modern transport in urban growth.

STANDARD VIII

- I. More detailed study of MAPWORK (refer to 1:50,000 sheets used in Standard VII).
1. Contours.
 2. Simple landforms represented by contours.

3. Representation of relief: Recognition of landforms on 1:50,000 maps.

II. PHYSICAL GEOGRAPHY

Simplified Geomorphology

1. Differences between weathering and erosion (very elementary).
2. Chief agents of erosion (very elementary—without theories).
 - (i) Water
 - (ii) Wind
 - (iii) Ice
 - (iv) Sea
3. Transportation and Deposition.
Use South African examples wherever possible, especially local ones.

III. EUROPE

1. Position and political divisions.
2. Relief and drainage.
3. Climates (maps and simple explanations).
4. Natural vegetation map.
5. Distribution of population.
6. A geographical study of at least *THREE* of the following:
 - Ruhr Industrial area.
 - Major Coalfields of the U.K.
 - Farming in the Netherlands, including land reclamation.
 - Switzerland or Norway.
 - Po-Valley.
 - Paris Basin.
 - Donbas Region.
7. A geographical study of a city, e.g. London, Paris, Berlin, etc.

IV. THE GEOGRAPHY OF WORLD POPULATION

1. Factors controlling population growth:
 - (i) Wars.
 - (ii) Famines.
 - (iii) Epidemic diseases, etc.
2. The World Population map—general pattern of distribution.
3. Factors affecting settlement:
 - (i) Situation.
 - (ii) Topographical features.
 - (iii) Climate.
 - (iv) Soils
 - (v) Water supplies.
 - (vi) Chief natural resources—minerals etc.
 - (vii) Human factors.
4. The use of modern technology to overcome limiting factors in settlement, e.g. long distance transport, irrigation and disease control.

(Education Gazette, 13 July 1967)

The Examination

Allocation of marks:

History	150
Geography	150

Total 300

SENIOR SECONDARY COURSE

It is announced for general information that the requirements and syllabuses for the Senior Secondary Course published below have been finally approved and will come into force from 1st January 1956.

Only the most important requirements are published below. The other general requirements will be published at a later date.

The syllabus in Greek will be published as soon as it has been approved.

The first examination on these syllabuses will be held in November/December 1957.

GEOGRAPHY

Introduction

In the junior secondary course all pupils follow a three years' course in general science, and at least two years of either the composite or the integrated syllabuses in social studies. The teacher of geography in the senior course should be acquainted with the background of scientific principles and of historical and geographical knowledge which may be expected from the junior course. At the senior stage the nature and the scope of social studies change. Boys and girls are more mature in their intellectual powers; they are ready to embark upon the full study of geography, and can profit from a study which combines the austere discipline of a science with a rich humanistic appeal.

Aims

1. In the senior course the approach to the teaching of geography will be more scientific than it was in the primary or junior secondary courses. This approach gives a coherence

which was lacking in the less advanced stages where emphasis was laid more on description. In a study of the general principles of geography the danger must, however, be avoided of splitting the subject into "part-geographies" such as, for example, the geography of land forms, including physical history and portions of geology; the geography of climate, including much that is within the domain of meteorology. The various kinds of distribution (relief, climate, vegetation, population, etc.) are regarded as the data of the subject; geography is concerned with the interrelation of these distributions.

2. Geography is primarily one of the humanities; hence emphasis is still laid on the essentially human aspects of geography and a close affinity with modern history and elementary economics is implied. The syllabus attempts to provide the pupil with sufficient knowledge to enable him to consider social and economic problems with a grasp of the geographical factors involved. The pupil will be taught to understand the economic interdependence of communities, and the co-operation of effort by which the world's trade is carried on. Care will be taken to ensure that he has a complete grasp of the fact that economic progress and success depend mainly on two factors—man's physical environment and his response to that environment.

3. Finally, the geography taught during the senior course will enable the pupils to understand such geographical references as occur in their general reading. It will equip them to appreciate natural features of landscape, to read maps and to use intelligently globes, reference books and other geographical material. It should lead them to a sympathetic understanding of other peoples, and, generally, to a development of their interest in the world about them.

GENERAL REMARKS

1. *Allocation of time for the syllabus*

Five teaching periods per week over the two years of the course are allowed. With a school year estimated at 36 weeks, 360 periods, or 225 hours, are available for the teacher to cover the syllabus.

2. *Some aids to the teaching*

(a) *A geography room:*

The classroom is reasonably well suited for lessons. On the other hand there are occasions when a larger room equipped for the use of visual aids and for map

studies is necessary. A room with cabinets for specimens, cupboards and racks for maps, wallboards, and drawing-tables is regarded by geography teachers in the same way as the laboratory is by the science teacher. Whenever the organisation of the school permits it is recommended that all geography lessons be given in a room set aside for this purpose.

(b) *The library:*

It is desirable that each high school should have a considerable number of books of geographical relevance. These should include:

- (i) Standard reference books such as the Official Year Books of the Union of South Africa and Southern Rhodesia; the Union-Castle handbook for South and East Africa; the Statesman's Year Book; the reports on trade published by the Commonwealth Economic Committee;
- (ii) some advanced standard atlases;
- (iii) readable text-books for use by staff and interested senior pupils;
- (iv) books of travel, adventure or discovery, including biographies of explorers;
- (v) periodicals of geographical interest.

(c) *Visual aids:*

The sound projector, the strip-film, and the epidiascope each has its particular value for lesson illustration. Diagrammatic charts and pictures, such as those obtainable from the British Ministry of Information, excellently portray the life of people in many parts of the world.

3. *Visits to places of geographical interest*

Museums, factories, docks, fruit-packing centres, etc., will all have a special interest. The system of planning holiday trips to seaports, to the interior, or round the coast is recommended. At these visits studies of the immediate locality, or of a selected industry in that area, such as wool, pineapples, citrus, leather, grapes, calico, may be assigned as "problem studies". Pupils will compare conditions in countries which compete with the local industry in world markets.

4. *Method of approach to territorial studies*

One of the most perplexing problems of method is that of determining how the teaching of general principles should be related to territorial studies. Should principles be taught first and illustrated from regional work; or should territorial studies first be made and principles derived from them? At the senior course stage it is not inappropriate to introduce the study of principles in their own right. On the other hand a prolonged division of the syllabus into two separate sections or number of sub-sections is to be deprecated. The coherence of the subject as a whole should not be destroyed by being split into "part-geographies". The value of constant application of principles and discussion of principles as a form of revision of the regional and economic studies is emphasised.

Another problem in method is the manner in which the territories mentioned in the syllabus are to be studied. Three different approaches may be distinguished:

(a) *The logical approach:*

This is the method found in most text-books. When, for example, the geography of Algeria is being dealt with, mention is made of position and size of the country, then relief, climate, vegetation, mineral resources, distribution of population and trade are followed in that order. This approach is logical and pupils readily acquire the technique. If, however, country after country is examined in the same way the method becomes dull and monotonous.

(b) *The problem approach:*

The study of an area may begin by posing a problem, e.g. How has India come to have such an important position in world affairs? Problems of this nature help to develop the capacity for independent thought and research. The topic quoted calls for research into recent development in the area, and an explanation of density of population, which is the central theme of human geography.

(c) *The map approach:*

The pupil begins by studying the population map of the territory. After noting areas of high and low density, he examines a series of other maps: the orographical map, various climate maps and the mineral

map. He then tries to find whether any of these has close relation to the population map. This is an analytical method, as opposed to the synthetic method upon which the text-book is usually based.

Naturally the selected approach will depend upon the territory which is being studied. The three methods mentioned may be interrelated for a particular study. They are not exhaustive. The study of the Nile Basin might well be approached historically, with both ancient and modern history as a background to the "problem approach".

THE SYLLABUS

The globe should be used for studies of sailing routes and air routes. Pupils should know something of the difficulty in representing the world on a plane surface, and of the limitations and errors inherent in some of the projections most commonly found in school atlases. Map studies should include the studies of scale, calculation of distances, contours, the interpretation of isotherms, isobars and isohyets. Pupils should have thorough training in the drawing of bold, clear sketch maps. Exercises requiring the filling in of details on outline maps, the drawing of line and bar graphs, "isotype" and dot maps to illustrate products or population, may also be given.

SECTION A: GENERAL GEOGRAPHY

1. *The earth as a planet*

Revision of the movements of the earth. Latitude; longitude; time.

2. *Climate*

(a) *Temperature*

Seasonal and diurnal variations in temperature; the effect of latitude, altitude, land and sea, winds and ocean currents.

(b) *Circulation of the atmosphere*

The relation of wind to pressure; Ferrel's Law; the main wind systems and their seasonal changes.

(c) *Precipitation*

The causes of rain, snow and hail; cyclonic, convectional and relief rainfall; regional and seasonal distribution of precipitation.

(d) Practical work

The use of the following meteorological instruments: mercury and aneroid barometers; rain-gauge; wind vane; maximum and minimum thermometers; wet and dry bulb thermometers. The meaning of relative humidity. The keeping of meteorological records; the construction of climatic graphs; the interpretation of climatic graphs and maps.

3. *Main natural regions of the world*

Climate and general weather conditions characteristic of each region. World distribution of vegetation types and the chief products considered in terms of their climatic requirements.

4. *Oceans*

The chief ocean currents and their relation to prevailing winds and configuration of coasts; their relative temperatures and their climatic significance. Elementary facts about tides, without discussion of the theories of their origin.

5. *The earth's crust**(a) Classification of rocks*

Igneous, sedimentary and metamorphic.

(b) Crustal movements

Folds, faults, earthquakes, volcanic action.

(c) Surface changes

Weathering; denudation, transportation and deposition by running water, glaciers and wind.

(d) Practical work

Representation of relief; reading of large-scale relief maps and drawing of sections from such maps; drawing of contour maps to illustrate simple land forms, e.g. volcanic cone, rift valley, kopple, poort escarpment, river and glacial valleys, etc.

SECTION B: REGIONAL AND ECONOMIC GEOGRAPHY

A broad survey of the natural and political divisions of each continent. This should include the main facts of relief, climate and vegetation, products, the nature and distribution of population and the distribution of sources of power. Within each continent certain countries, regions and topics are chosen for special treatment either in detail or in broad outline. Where reference is made to studies in broad outline the main facts only will be required, as is outlined in the broad survey of the continents.

1. *Africa*(a) *Southern Africa (South of the Kunene and Zambesi Rivers)*

Structure in relation to (a) relief; (b) occurrence and importance of the leading mineral products. Climate and its effect upon the distribution of (a) natural vegetation; (b) water resources; (c) types of farming, chief crops and kinds of stock.

A study of (a) mining; (b) manufacturing; (c) fishing; (d) forestry, as influenced by raw material supply, labour, power, transport and markets. Distribution of European, Native and other non-European population; the chief towns and ports and the factors, including communications, favouring and retarding their development; overseas trade.

(b) *The Nile Basin; the Atlas Region, particularly Algeria; West Africa, particularly Nigeria; East Africa, particularly Tanganyika and Kenya.*2. *Europe*

The British Isles, France, Belgium, Holland, Germany, Scandinavia, Italy and the European territory of the U.S.S.R. in some detail. Special attention should be paid to the industrial development and the localisation of industries in relation to supplies of raw materials, power, suitable labour, transport, and to home and export markets for manufactures in those regions which are economically the most important. Intensive farming as a response to the needs of dense population.

3. *Asia*(a) *India and Pakistan, Japan and China, particularly Central Japan and the Yangtse Basin in some detail with special reference to the distribution of the main crops, irrigation and manufacturing industries.*(b) *Ceylon, Indonesia, Malaya in broad outline.*4. *Australasia*

Australia and New Zealand with special reference to farming and mining industries.

5. *North America*

The United States and Canada in some detail with special reference to the prairies; the north-eastern manufacturing region; the cotton belt; California; forest exploitation in Eastern Canada; the fisheries of Newfoundland, British Columbia and Alaska; the iron and steel industries of Pennsylvania and the Great Lakes region.

6. *South America*

Brazil and Argentina with special reference to south-eastern Brazil and the pampas; and Chili.

7. *World trade*

The main currents of world trade in staple foodstuffs, in important industrial raw materials and in manufactured goods. The physical and economic conditions determining—

(a) the main routes—by sea, rail and inland waterways—by which these commodities are transported;

(b) the sites and development of the chief ports serving this commerce. The main airways of the world.

THE EXAMINATION

Twelve questions will be set in a three-hour paper, two questions to be answered from Section A of the syllabus and four from Section B.

Section A

Four questions to be set of which any two may be answered 100 marks

Section B

Eight questions to be set of which any four may be answered. Candidates will be required to answer questions involving maps 200 marks

(Education Gazette, 3 Nov. 1955)

Appendix A8

SENIOR SECONDARY COURSE: REVISED GEOGRAPHY SYLLABUS

The following syllabus in Geography for the Senior Secondary Course will be introduced as from 1st January, 1965.

The syllabus will be taken into use in Standard IX in 1965 and the first Senior Certificate Examination on this syllabus will be held in 1966.

SENIOR SECONDARY COURSE: GEOGRAPHY

SECTION A

PHYSICAL AND PRACTICAL GEOGRAPHY

1. THE EARTH AS A PLANET

(a) *The Earth as part of the Solar System:*

The two important movements of the earth: revolution and rotation; shape and size of the orbit, inclination of the earth's axis, varying declination of the sun, the cause of the seasons, experimental proofs of rotation; cause of day and night; the relative positions of the sun, earth and moon at solar and lunar eclipses; elementary facts in connection with tides without an explanation of the advanced theories as to their origin.

(b) *The Earth:*

Spherical shape of the earth with proofs; size of the earth; certain measurements, e.g. length of the equator, length of a meridian, equatorial diameter, polar diameter, surface area.

(c) *The Oceans:*

The chief ocean currents: names, direction and relative temperatures.

(d) *Longitude:*

The concept of longitude, longitude and time, mean local time, standard time, time zones, International Date Line, calculation of Longitude from time differences and *vice versa*.

(e) *Latitude:*

The concept of latitude, determination of noon altitude of the sun making use of the shadow method, sextant and theodolite (only treating the *principle* and not the construction of these instruments); the calculation of latitude if the declination of the sun and the noon altitude are given.

2. CLIMATE

(a) *Temperature:*

The following processes: solar radiation, earth radiation, conduction. The vertical decrease in temperature and temperature inversion (also the drying of air).

The following causes and effects of temperature due to vertical air movement:

- (i) Convection.
- (ii) Topographical elevation.
- (iii) Frontal elevation.

The influence of vertical air-movement (ascending and descending air) on temperature. Isotherms. Seasonal and daily temperature range.

Attention must be paid to the underlying relationship of the phenomena mentioned.

(b) *Atmospheric Pressure and Wind:*

Normal atmospheric pressure, pressure units, vertical and horizontal pressure differences. Isobars. The relation of temperature and pressure to wind. Ferrel's Law, the main wind systems and their seasonal changes: Trade-winds, Antitrade-winds (including temperate cyclones and anti-cyclones) and Monsoon winds. The following local winds: the South African Berg winds, the Föhn and Chinook, the Mistral, the Sirocco and Harmattan.

Storm conditions: Tropical cyclones ("Hurricanes", typhoons, cyclones), Tornadoes (often called "hurricanes" in South Africa).

(c) *Humidity, condensation and precipitation:*

Relative humidity, dew point temperature, simple cloud types (cirrus, stratus, cumulus, nimbostratus and cumulonimbus); fog (radiation fog and advection fog), dew and frost. The causes of rain, snow, sleet and hail. Convection, relief and cyclonic rains. Isohyets, regional and seasonal distribution and the effectiveness of precipitation. The influences of ocean currents on rain.

(d) *Practical work:*

The use of the following meteorological instruments:

mercury and aneroid barometers and barograph; rain gauge and self-recording rain gauge; wind-vane; anemometer; maximum and minimum thermometers and thermograph, hygrometer (i.e. wet and dry bulb thermometers) and hygrograph.

The keeping of meteorological records: the construction of climatic graphs; the interpretation of climatic data, graphs and maps.

3. THE EARTH'S CRUST

(a) *Rocks which compose the Lithosphere:*

Igneous, sedimentary and metamorphic.

(b) *Lithospheric forces:*

Horizontal and vertical. (With attention to the consequent land forms as mentioned in (d).

Mountain building (folding, shifting), vulcanism.

(c) *Surface forces:*

(With attention to the consequent land forms as mentioned in (d)).

Erosion; erosion and deposition by running water, moving ice, wind and the oceans.

(d) *Land forms:*

Plains:

River graded plains, including peneplains, and alluvial plains (flood plains, natural leveés, ox-bow lakes).

Ice-scoured plains (ice-scoured lakes, rock moutonnées); ice debris plains (Terminal moraines, drumlins, eskers);

Sandy deserts (barchans, seifs).

Hills:

Mature river-dissected hill topography; mesas and buttes, cuervas.

Plateaus:

Raised plateaus and canyons; lava plateaus; intermontane plateaus.

Mountain lands:

Fold mountains; block mountains; volcanic mountains; Alpine mountain lands.

Coastal types:

Submerged coasts (Rias and fjords); Emerged coasts.

4. CARTOGRAPHY

(a) *Scales:*

Word scales, representative fractions and linear scales.

The conversion of a word scale into a representative fraction (e.g. 1 inch = 1 mile is the same as 1:63,360); enlargement and reduction by means of squares; determining area by means of squares and triangles.

(b) *A very elementary survey of the properties and uses (not the constructions) of the following map projections:*

Mercator's World Map, Bonne's Projection, the Stereographic Projection and the Interrupted Sanson-Flamsteed Projection. Note: preservation of shape; preservation of area; preservation of scale; preservations of bearings, the appearance of the lines of latitude and longitude (straight, curved, arcs).

(c) *The representation of relief:*

Scale; the drawing of contour maps to represent simple land forms, e.g. volcanic cone, koppie, poort (gorge), escarpment, river and glacial valley, the drawing of cross sections and the calculation of vertical exaggeration.

(d) *Distribution and density maps:*

Dot maps; colour tinting; line shading. The concept of isopleths briefly.

SECTION B

SURVEY OF THE EARTH BY NATURAL REGIONS

In the following natural regions emphasize climate, natural vegetation, population distribution and the main agricultural industries which relate to the natural conditions.

1. Equatorial forests.
2. Savanna (Tropical Summer Rainfall) Regions (Tropical Monsoon Regions included).
3. Arid and Semi-Arid Regions.
4. Mediterranean Type Regions. (Warm Temperate West Coast Regions).
5. Warm temperate or Subtropical East Coast Regions.
6. Temperate Grasslands.
7. Cool temperate Western Margins. (West European Type).
8. Cool temperate Eastern Margins.
9. Northern Coniferous Forests.
10. Tundra and Ice-cap Regions.

SECTION C

REGIONAL GEOGRAPHY

1. AFRICA

(a) *Africa:* The situation, shape, size, structure, climate and vegetation of Africa. The political division of the continent; the main surrounding islands.

The Nile Basin and the Suez Canal; Algeria; Nigeria and Ghana; the Congo Basin; Kenya and Tanganyika and Uganda; Northern and Southern Rhodesia; Angola and Mozambique.

Schemes such as the Gezira Scheme, Katanga-Northern Rhodesia Copper Belt, the Kariba Hydro-electric Scheme, the Volta River Project and the Owen Falls Scheme must receive attention.

(b) *South Africa*: The Republic of South Africa, South West Africa and the Protectorates.

Situation in respect of latitude, ocean currents, and rest of the world.

Relief.

Climate and its effect on *water supplies.*

Natural vegetation.

Population: Population figures and composition according to races, distribution and density.

Types of agriculture.

Fishing and Forestry.

Mining and Manufacturing industries as affected by the supply of raw materials (i.e. in the latter case), labour, power, transport and communications, home and foreign markets.

2. EUROPE

(a) Situation; influence of Gulf Stream on climate; the climate and natural vegetation; the topography and drainage; coastline. The political division of the continent.

(b) The British Isles; France; Belgium; the Netherlands; West Germany; Norway and Sweden and Denmark; European U.S.S.R.; Italy; Spain; Czechoslovakia; Yugoslavia.

Special attention should be paid to the industrial development and the establishment of factories as affected by the supply of raw materials, power, skilled labour, transport (note, in particular, river and canal transport in Europe, especially the Rhine and its canal systems), and to home and export markets for manufactures in those regions which are economically the most important. Fishing Industry. Intensive farming to meet the needs of dense populations.

3. NORTH AMERICA

(a) Situation, shape, size, structure, climate and vegetation. The political division of the continent as far south as the Panama Canal.

(b) U.S.A.; Canada; Mexico and the main West Indian islands.

Special attention should be paid to the industrial development and the establishment of factories as affected by the supply of raw materials, sources of power, skilled labour, transport, and to home and foreign markets for manufacturers in those regions which are economically the most important. Attention should also be paid to the fishing, forestry and mining industries and to communications.

4. ASIA

(a) Situation, shape, size, structure, climate and vegetation.

The political division of the continent.

(b) India and Pakistan; China; Japan; Indonesia; Malaya.

Special attention should be paid to the industrial development and the establishment of factories as affected by the supply of raw materials, power, skilled labour, transport and to home and foreign markets for manufacturers in those regions which are economically the most important. The Fishing Industry. Intensive farming to meet the needs of dense populations.

5. SOUTH AMERICA AND AUSTRALASIA

(a) Situation, shape, size, structure, climate and vegetation.

The political divisions.

(b) Brazil; Argentina; Chile; Australia; New Zealand.

(c) A study should be made of the primary products of these countries with their influence on export trade. The difficulties of transport and communications and the development of industries should be emphasized.

THE EXAMINATION

The questions will consist of subsections of the essay type; shorter questions, short questions and questions on maps. Not more than 30 marks will be allocated to each subsection of a question. In all questions of the essay type pupils must be prepared not only to give correct facts but also to draw conclusions and give the cause and effect of the facts.

Thirteen questions will be set in a three-hour paper. SIX questions must be answered:

Two from Section A.

One from Section B.

One or two from Section C (1).

The remaining *one or two* questions from Sections C (2), (3), (4) and (5).

Section A: *Four* questions will be set of which any *two* must be answered. (100 marks).

Section B: *Two* questions will be set of which *one* must be answered. (50 marks).

Section C (1): *Three* questions will be set of which at least *one* and not more than *two* must be answered. (50 or 100 marks).

Sections C (2-5): *Four* questions, each with an alternative, will be set, of which at least *one* and not more than *two* must be answered. (50 or 100 marks).

Total: 300 marks.

(It may be expected of candidates to answer only one question from Section C (1) and two questions from Section C (2-5), or two questions from Section C (1) and one question from Section C (2-5)).

(Education, Gazette, 17 Sept. 1964)

Appendix A9

SENIOR SECONDARY COURSE: REVISED SYLLABUS
IN GEOGRAPHY

The following syllabus in Geography for the Senior Secondary Course will be introduced as from 1st January, 1969.

The syllabus will be introduced into Std. IX in 1969, and the first Senior Certificate Examination on this syllabus will be held in November, 1970.

SENIOR SECONDARY COURSE: GEOGRAPHY

SECTION A

PHYSICAL AND PRACTICAL GEOGRAPHY

1. THE EARTH AS A PLANET

(a) *The Earth as part of the Solar System:*

The two most important movements of the earth: revolution and rotation; shape and size of the orbit; inclination of the earth's axis; varying declination of the sun, the causes of the seasons; experimental proofs of rotation; causes of day and night; the relative positions of the sun, earth and moon at solar and lunar eclipses; elementary facts in connection with tides without an explanation of the advanced theories as to their origin.

(b) *The Earth:*

Spherical shape of the earth with proofs; size of the earth; certain measurements, e.g. length of the equator, length of a meridian, equatorial diameter, polar diameter, surface area.

(c) *The Oceans:*

The chief ocean currents: names, causes, direction and relative temperatures.

(d) *Longitude:*

The concept of longitude and meridians; longitude and time; mean local time; standard time; time zones; the International Date Line; calculation of longitude from time differences and vice versa.

(e) *Latitude:*

The concept of latitude and parallels; determination of noon altitude of the sun making use of the shadow method, sextant and theodolite (only treating the prin-

and thermograph; mercury and aneroid barometers and barograph; wind-vane and anemometer; hygrometer (i.e. wet and dry bulb thermometers) and hygrograph; rain gauge and self-recording rain gauge.

The keeping of meteorological records: the representation of climatic data; the interpretation of climatic data, graphs and maps. (Metric measurements should be used in this practical work.)

3. THE EARTH'S CRUST AND LAND FORMS

(a) *The Earth's Crust:*

The Lithosphere—sial and sima. Igneous, sedimentary and metamorphic rocks.

(b) *Internal Processes and their effects:*

Isostasy; continental drift. Vulcanism; folding and faulting.

(c) *External Processes (weathering, erosion and deposition) and their effects:*

(i) Weathering of Rocks.

(ii) River action in humid areas. Valley development—the land forms typical of youth, maturity and old age. Alluvial fans and deltas.

(iii) Desert landscapes. River action in arid areas. Wind erosion; wind deposition, including barchans and seifs.

(iv) Valley and Continental Glaciers (ice sheets). Glacial valleys; ice-scoured plains and glacial drift plains.

(v) Limestone and dolomite areas; Caverns; karst topography.

(vi) Coastal types: sea erosion and deposition; coast lines of submergence (rias and fjords) and coast lines of emergence.

ciple and not the construction of these instruments); the calculation of latitude if the declination of the sun and the noon altitude are given.

2. CLIMATE

(a) *Temperature:*

The following processes: solar radiation, earth radiation, conduction.

Factors influencing temperature, especially latitude, altitude and relief, distance from sea, ocean currents and winds.

Isotherms. Seasonal and daily temperature ranges.

(Attention must be paid to the underlying relationship of the phenomena mentioned.)

(b) *Atmospheric Pressure and Wind:*

Normal atmospheric pressure; pressure units. Vertical and horizontal pressure differences. Isobars. The relation of temperature and pressure to wind. Ferrel's Law; the main wind systems and their seasonal changes: Trade-winds, westerlies (including temperate cyclones and anti-cyclones) and Monsoon winds. The following local winds: the South African Berg winds, the Föhn and Chinook, the Mistral, the Sirocco and Harmattan. Land and Sea Breezes. Storm conditions: Tropical cyclones ("hurricanes", typhoons, cyclones). Tornadoes (often called "hurricanes" in South Africa).

(c) *Humidity, condensation and precipitation:*

Relative humidity, dew point. Simple cloud types (cirrus, stratus, cumulus, nimbostratus and cumulonimbus); fog (radiation fog and advection fog), dew and frost. The causes of rain, snow, sleet and hail. Convection, relief and cyclonic (frontal) rains. Isohyets, regional and seasonal distribution and the effectiveness of precipitation. The influences of ocean currents on rain.

(d) *Practical work:*

The use of the following meteorological instruments: Maximum thermometer and minimum thermometer

4. CARTOGRAPHY

(a) *Scales:*

Word scales, representative fractions and linear scales. The conversion of a word scale into a representative fraction (e.g. 1 inch = 1 mile is the same as 1:63,360); enlargement and reduction by means of squares; determining area by means of squares and triangles.

(b) *Map projections:*

A very elementary survey of the properties and uses (not the constructions) of the following map projections: Mercator's World Map, Bonne's Projection, the Stereographic Projection and the Interrupted Sanson-Flamsteed Projection. Note: preservation of shape; preservation of area; preservation of scale; preservations of bearings; the appearance of the lines of latitude and longitude (straight, curved, arcs). (4 (b) not to be examined).

(c) *The representation of relief and the simple interpretation of topographical maps:*

Scale; the drawing of contour maps to represent simple and separate land forms, e.g. volcanic cone, koppie, poort, escarpment, river and glacial valley, the drawing of cross sections and the calculation of vertical exaggeration. The simple interpretation of topographical maps (including the use of conventional symbols).

(d) *Distribution and density maps:*

Dot maps; colour tinting; shading. The concept of isopleths briefly.

SECTION B

SURVEY OF THE EARTH BY NATURAL REGIONS

In the following natural regions emphasize world distribution, climate, natural vegetation and the main farming and forestry industries which relate to the natural conditions.

1. Equatorial Regions.
2. Savanna (Tropical Summer Rainfall Regions).
3. Tropical Monsoon Regions.
4. Arid and Semi-Arid Regions.
5. Mediterranean Type Regions.
6. Warm temperate or Subtropical East Coast Regions.
7. Temperate Grasslands.
8. Cool temperate Western Margins (West European Type).
9. Cool temperate Eastern Margins.
10. Northern Coniferous Forests.
11. Tundra and Ice-cap Regions.

SECTION C

REGIONAL GEOGRAPHY

I. AFRICA

(a) *Africa:*

The situation, shape, size, structure, climate and vegetation of Africa. The political division of the continent. The Nile Basin and the Suez Canal; Algeria; Nigeria; the Congo Basin; Kenya, Tanzania and Uganda; Zambia; Rhodesia; Angola and Mozambique.

Schemes and regions such as the Gezira Scheme, Katanga-Zambia Copper Belt, the Kariba Hydro-electric Scheme, the Volta River Project and the Owen Falls Scheme must receive attention.

(b) *South Africa:*

The Republic of South Africa, South West Africa, Lesotho, Botswana and Swaziland.

Situation in respect of latitude, ocean currents, and the rest of the world.

Relief.

Climate.

Natural vegetation.

Population: Population figures and composition according to races, distribution and density; major cities.

Types of farming.

Soil and Water conservation.

Fishing.

Forestry.

Mining.

Manufacturing industries as affected by the supply of raw materials, labour, water, power, transport and communications, home and foreign markets.

Note 1: A general study of the following continents must include situation, political divisions, relief and drainage, climate and natural vegetation.

Note 2: In respect of the particular countries mentioned below special attention should be paid to economically important human activities. This, in most instances, will include a study of industrial and agricultural development and the establishment of factories as affected by the supply of raw materials, power, labour, transport, home and foreign markets.

2. EUROPE

The British Isles; France; Belgium; the Netherlands; West Germany; U.S.S.R.; Italy.

3. NORTH AMERICA

U.S.A.; Canada.

4. ASIA

India; Pakistan; China; Japan; Indonesia.

5. SOUTH AMERICA AND AUSTRALASIA

Brazil; Argentina; Chile; Australia; New Zealand.

THE EXAMINATION

The questions will consist of subsections. These may be the essay type, shorter questions, short questions and questions on maps. Not more than 30 marks will be allocated to

any subsection of a question. In all questions of the essay type pupils must be prepared not only to give correct facts but also to draw conclusions and give the cause and effect of the facts.

A three-hour paper will be set. SIX questions must be answered:

Two from Section A.

One from Section B.

One or two from Section C (1) of which one question (with alternatives) on South African Geography will be compulsory.

The remaining *two* questions or *one* question from Sections C (2), (3), (4) and (5).

Section A: *Four* questions will be set of which any *two* must be answered. (100 marks)

Section B: *Two* questions will be set of which *one* must be answered. (50 marks)

Section C (1): *Three* questions will be set of which at least *one* and not more than *two* must be answered. (50 or 100 marks)

Section C (2-5): *Four* questions, one on each subsection, each with an alternative, will be set, of which at least *one* and not more than *two* must be answered. (50 or 100 marks)

Total: 300 marks

(It may be expected of candidates to answer only one question from Section C (1) and two questions from Section C (2-5), or two questions from Section C (1) and one question from Section C (2-5).)

(Education Gazette, 3 Nov. 1966)

SYLLABUS

STANDARD 8

- 0. General Methodology
 - 0.1 Introduction to map analysis
 - 0.2 Introduction to analysis of photographs
 - 0.3 Preparation for fieldwork
 - 0.4 Diagrammatic representation of statistics
- 1.0 Physical Geography
 - 1.1 Climatology
 - 1.1.1 The seasons, solstices and equinoxes
 - 1.1.2 The atmosphere: composition and structure
 - 1.1.3 Temperature: heating of the air
 - horizontal variations
 - vertical variations
 - 1.1.4 Humidity: relative humidity, dew point temperature, simple cloud types
 - 1.1.5 Precipitation types (Hydrometeors): rain, hail, snow, dew, frost
 - 1.1.6 Practical work: use of meteorological instruments and records; drawing isolines and climatic diagrams, interpretation of climatic maps and diagrams
 - 1.2 Geomorphology
 - 1.2.1 The earth's crust and composition
 - 1.2.2 Rock types: igneous, sedimentary and metamorphic
 - 1.2.3 Weathering and soils
 - 1.2.4 Glacial action: continental and valley
 - 1.2.5 Marine action: emergent and submergent coastlines
 - 1.2.6 Practical work: recognition of simple rock types, fieldwork, map and photo analysis to illustrate specific landform types.
- 2. Human Geography
 - 2.1 Economic geography
 - 2.1.1 Resources: non-renewable
 - renewable
 - world distribution of coal, petroleum, iron ore, rice, maize, wheat
 - 2.1.2 Utilization of resources and economic activities
 - 2.1.2.1 Primary activities: agriculture and forestry: subsistence, arable, pastoral, irrigation, plantation
 - mining: quarrying, open cast, shaft, basic economics of exploitation

- 2.1.2.2 Secondary activities: industry, heavy and light, location of industry (one case study to be made)
- 2.1.2.3 Tertiary activities: service industries (to include power) transportation and communications networks trade, finance and banking
- 2.1.3 Land utilization: the integrated economic landscape
- 2.1.4 Practical work: Land use mapping, construction and interpretation of statistical diagrams (graphs, bar diagrams, flow charts, sector (pie) diagrams)
3. Regional Geography
- 3.1 Regions based on resources and economic activities
- 3.1.1 (i) primary resource regions
 agricultural -
 subsistence: Pygmies (hunter) and Bedouin (nomads)
 arable: Prairies of Canada and Deccan of India
 pastoral: Pampas of Argentina and New Zealand
 irrigation: Nile valley and California
 plantation: Malaysia (rubber) and U.S. (cotton)
 mining -
 Canadian North and Copperbelt (Zambia/Congo)
- 3.1.2 (ii) present-day secondary activities
 Switzerland
 Ruhr and midlands of England
 Ukraine
 North eastern U.S. (incl. New England)
- 3.1.3 Practical work: map analysis, project case studies

1. Physical geography
 - 1.1 Climatology
 - 1.1.1 Atmospheric pressure: definition and representation
 - 1.1.2 Relationship between pressure and wind
 - 1.1.3 General circulation of the atmosphere
 - 1.1.3.1 Primary: vertical section (tri-cellular arrangement) sub-tropical and polar highs, polar front I.T.C.Z.
 - 1.1.3.2 Secondary: lows and westerly waves, tropical easterlies and waves therein, monsoons
 - 1.1.3.3 Tertiary: Land and sea breezes, katabatic flow, Chinook and Föhn, Mistral
 - 1.1.4 Weather:
 - causes of uplift, convergence (direct and indirect, frictional, slope (relief), frontal, convectional)
 - thermal stability and instability
 - 1.1.5 Practical work: interpretation of climatic maps
 - 1.2 Oceanography
 - 1.2.1 Relationship between atmospheric and oceanic circulations
 - 1.2.2 Main ocean currents and their effects
 - 1.2.3 Basic causes of tides
 - 1.3 Geomorphology
 - 1.3.1 River action
 - 1.3.1.1 Fluvial processes
 - 1.3.1.2 Drainage basins, drainage patterns and networks
 - 1.3.1.3 River profiles
 - 1.3.1.4 Landforms typical of upper, middle and lower tracts
 - 1.3.2 Arid landscapes
 - 1.3.2.1 Effects of wind and water
 - 1.3.2.2 Typical landforms
 - 1.3.3 Karst landscapes
 - 1.3.3.1 The solution process
 - 1.3.3.2 Typical landforms
 - 1.3.4 Practical work:
 - profiles, map and photo interpretation of landforms, appropriate fieldwork
 - 1.4 Biogeography
 - 1.4.1 Major vegetation types: recognition and distribution
 - 1.4.2 Relationship between climate and vegetation
2. Human Geography
 - 2.1 Population geography
 - 2.1.1 World population distribution and densities
 - 2.1.2 Major ethnic groups: Caucasoid, Mongoloid, Negroid
 - 2.1.3 Effect of culture on landscape

- 2.1.4 Population structure: birth and death rates, population pyramids
- 2.1.5 Population mobility, problems of immigration and emigration, rural depopulation
- 2.1.6 The population explosion and associated problems
- 2.1.6.1 Distribution of food, finite natural resources
- 2.1.7 The green revolution
- 2.1.8 Practical work:
 - Statistical diagrams and maps, construction and interpretation

- 2.2 The regional concept
 - 2.2.1 Types of regions - formal
 - functional
 - natural

- 3. Regional Geography
 - 3.1 Man's adaption to contrasted environments
 - 3.1.1 Problems to be overcome in connection with:
 - 3.1.1.1 (a) population pressure: Netherlands
Latin America
Java
China
India and Pakistan
(Netherlands and TWO others to be considered)
 - 3.1.1.2 (b) development in hostile environments
 - (i) cold - Alaska or Siberia
 - (ii) arid - Middle East with specific reference to Israel
 - (iii) humid - Amazon basin and Guinea coast
 - 3.1.1.3 (c) poor resource base
 - (i) with advanced technology - Japan
 - (ii) with less advanced technology - East Africa and Malawi
 - 3.1.2 Practical work:
 - map and photo interpretation
 - 3.2 Project: Topic to be chosen by teacher

1. Physical Geography
 - 1.1 Climatology
 - 1.1.1 Models: geostrophic flow
thunderstorms (incl. tornadoes)
mid-latitude cyclone
tropical cyclone
 - 1.1.2 Climatic explanation -
 - 1.1.2.1 regional scale:
Western Europe
Central Africa
desert areas
 - 1.1.2.2 local scale:
valley climates
air pollution
city climates
 - 1.1.3 Practical work:
Elementary analysis of weather maps with special
reference to South Africa
 - 1.2 Geomorphology
 - 1.2.1 Structure and lithology
 - 1.2.2 Slopes and slope elements
 - 1.2.3 Internal processes: crustal mobility, isostasy,
continental drift, fold and
block mountains, rifting, earth-
quakes and volcanic activity
 - 1.2.4 Concepts:
Dynamic equilibrium, Grade, Davis' cycle of
landscape evolution
 - 1.2.5 Practical work: map and photo analysis of specific
landforms
 - 1.3 Ecology
 - 1.3.1 Ecosystems
 - 1.3.2 Conservation and environment despoilation (case
study)
2. Human Geography
 - 2.1 Urban geography
 - 2.1.1 Rural settlement:
 - 2.1.1.1 types
 - 2.1.1.2 factors of location
 - 2.1.2 Urban settlement:
 - 2.1.2.1 origin
 - 2.1.2.2 factors of location
 - 2.1.2.3 patterns and processes of urban growth, form and
function
 - 2.1.2.4 urban structure and land use
 - 2.1.2.5 the role of the central business district
 - 2.1.2.6 models of growth

- 2.1.2.7 city-hinterland relationships
- 2.1.2.8 urban hierarchies and central place theory
- 2.1.2.9 megalopolis (conurbation)
- 2.1.2.10 urban problems
- 2.1.3 Metropolitan regions
- 2.2 Economic geography
 - 2.2.1 nodes, networks and surfaces
 - 2.2.2 core periphery concept
 - 2.2.3 economic islands
- 2.3 Practical work:
Urban land use mapping, interpretation of urban maps and photographs, transect studies, areas of influence
- 3. Regional Geography
 - 3.1 Southern Africa
 - 3.1.1 Physiography
 - 3.1.2 Climate and weather
 - 3.1.3 Population
 - 3.1.4 Resources - important mineral resources water
 - 3.2 South Africa
 - 3.2.1 Economic activities
 - 3.2.1.1 Primary: agriculture - contrast maize and wheat production
 - comparison of the fruit-farming of the S.W. Cape with those of Transvaal Lowveld
 - sugar and its role in world sugar trade
 - the decline of wool farming
 - trends in beef farming
 - forestry - regional potential
 - fishing - the finite nature of the resource
 - mining - contribution to national economy
 - gold, iron ore, copper, coal, diamonds
 - 3.2.1.2 Secondary: major development regions -
 - Pretoria - Witwatersrand - Vereeniging
 - Durban - Pinetown
 - South Western Cape
 - Port Elizabeth - Uitenhage
 - other development regions -
 - Border industries
 - Homelands

3.2.1.3 Tertiary: the urban system as a whole - Durban,
Cape Town and Johannesburg
communications
international trade
power as a major service industry

3.2.1.4 Some problems of development:

industrial decentralization
the future of the gold mining industry
rural depopulation
limited local markets
drought

3.2.1.5 Gross national product

3.3 South West Africa	}	problems associated with regional economic development
3.4 Botswana, Lesotho, Swaziland		
3.5 Rhodesia		

3.6 Economic cooperation and trade in Southern Africa

4. Map interpretation

Integrated map and photo analysis of specific areas
covered by the 1:50 000 map sheets of South Africa

5. PROJECTS: Two to be completed, topics to be chosen
by the teacher.

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EXPLANATORY NOTES

STANDARD 8

0. General methodology
 - 0.1 Revision and new work to cover: scales, representation of relief, grid references, compass work, to bearings, contouring, drawing of sections, map projections (properties and use not construction),
 - 0.4 fieldwork reporting. Much of the new material can be taught in the context of the courses to follow. It is not envisaged that this general methodology should be too detailed or long (+ 3 - 4 wks.)
1. Physical geography
 - 1.1.3 Solar radiation, earth radiation, convection and conduction. Factors influencing temperature. Lapse rates.
 - 1.1.4 Clouds: cirriform, stratiform, cumuliform and types thereof
 - 1.1.5 Barometers, rain gauge, thermometers, anemometers, hygrometers
 - 1.2.3 Zonal soil types in their simplest form and outline
 - 1.2.4 Aggradational and degradational features
 - 1.2.5 ditto
 - 1.2.6 Recognition of contour forms associated with specific features
2. Human geography
 - 2.1.1 Non-renewable minerals (including petroleum)
Definition of renewable types -
 physical: water, soil, vegetation, animal
 human and economic: labour, agriculture, capital

Only major regions of occurrence of resources to be considered

This section on resources is introductory and must be done briefly
 - 2.1.2 Specific regions should be used wherever possible to illustrate general principles. These may or may not be taken from the regional section to follow.
 - 2.1.2.1 Basic economics of exploitation to include accessibility, bulk transportation and processing.
3. Regional geography

- 3.1 It must be stressed that in all these regional studies only those components of the environment and landscape which are relevant to the topic under consideration should be included.

STANDARD 9

1. Physical geography

1.1.1 Isobars, pressure gradients

1.1.2 Flow above ground (i.e. not at ground level) should be considered, i.e. flow parallel to isobars. Oblique flow across isobars owing to frictional effects is best considered under convergence (see 1.1.4 of Syllabus).

1.1.3.2 Tropical easterlies formerly known as Trade Winds

1.1.3.3 Berg wind to be considered in Standard 10 under South Africa

1.1.4 Point out that these different types often act together or against one another.

1.2.1 Effect of configuration of ocean basins to be included.

1.3.1.1 Mechanisms of erosion, transportation and deposition

1.3.1.4 The concept of youth, maturity and old age being equated with the upper, middle and lower tracts should not be stressed.

1.3.3.1 Differences between limestone and dolomite area can be noted

1.3.4 Colour, tone, size, form, shadow, pattern and texture of the photographic image as aids to interpretation.

2. Human geography

2.1 Wherever possible actual examples should be used to illustrate generalizations.

2.1.3 Stages of community development and their manifestations.

2.1.7 Increase in yields by use of hybrid good types

2.1.8 To show pyramids, densities and distributions.

1. Physical geography

- 1.1.2.1 Western Europe - synoptic approach to be emphasized.
Central Africa - I.T.C.Z. and its movements, thunderstorms and humidity. Desert areas - emphasize high pressure cells, subsiding air and inversions.
- 1.1.2.2 Valley climates - emphasize aspect, heating and cooling, local winds and inversions, frost and fog. Air pollution effect of climate. City climates - contrast city and rural ground surfaces and effects on run off, radiation and temperature; characteristics of urban climates - increased fogs, rainfall, temperature, surface heat islands.
- 1.2.2 Crest, free face, talus, pediment.
- 1.2.4 The Davisian cycle to be taught critically as a theory and not as accepted fact; other theories of landscape evolution may be mentioned but should not be considered in detail.
- 1.3.1 Define interrelationships of climate, soil, vegetation and land use, factors affecting equilibrium.

2. Human geography

- 2.1.2.3 Of city as a whole
- 2.1.2.4 Zones within cities
- 2.1.2.6 Concentric, sectoral and multiple nuclei
- 2.1.2.7 Spheres of influence, entrepôts
- 2.1.2.10 Congestion, centralization, pollution, transportation, blight (urban decay), green belts.
- 2.2 In the section on economic geography it is important that the work in human geography over standards 8, 9, and 10 is drawn together to demonstrate the overall systems approach.
- 2.2.1 Stress interrelationships between urban centres, communications and economic activities
- 2.3 Specific examples should be used wherever possible to illustrate general principles.

3. Regional geography

The approach in the entire regional course must be one of problem-orientation and explanation. Description alone will be unacceptable.

- 3.1.1 To include physiographic regions, drainage basins, and river systems.

- 3.1.3 Density and distribution, composition, growth and movement
- 3.1.4 General discussion of important resources. Distribution, conservation and use of water.
4. Map Interpretation

It is essential to realize that this map interpretation must of necessity cover all aspects of geography learnt by pupils at Secondary level.

EXAMINATION - HIGHER LEVEL

1. Standards 8 and 9 will be examined internally at the end of each year.
2. The final public examination will be set on the Standard 10 syllabus.
3. The examination will consist of ONE 3¼ hour question paper. (It is imperative to recognize that geography has a unique problem in the examining of large scale topographic maps. Even the most skilled professional geographers cannot interpret these maps without spending some time in examining them. For this reason it is absolutely essential that pupils be given an extra 15 minutes for this task. Unless this point is conceded it will be necessary to ask for an additional paper to meet this need.)
4. The question paper will be divided into four sections:
 - Section A: Map work and photo interpretation
 - Section B: Physical Geography
 - Section C: Human Geography
 - Section D: Regional Geography
5. Eight questions will be set. FIVE questions must be answered.
 - Section A: One question which is compulsory will be set (70)
 - Section B: Two questions will be set. One question must be answered. (70)
 - Section C: Two questions will be set. One question must be answered. (70)
 - Section D: Three questions will be set. One question must be answered. (70)

The Fifth question may be chosen from either sections B, C, or D. (70)

(350)

The apparently restricted choice is caused primarily by the fact that the testing is now only done on the final year's work.

CONCLUDING REMARKS

1. Comparing the former syllabus with the new proposals, it is apparent that the breadth of the old syllabus has been diminished to allow for increased depth of study.
2. The former overwhelming emphasis on descriptive regional geography has been replaced by a more systematic approach in which interrelationships, problem-solving and explanation are stressed.
3. Practical work has been introduced as an integral part of geographical method.
4. The syllabus has been designed to produce an increasing component of conceptual work from standard 8 to standard 10. By becoming more concerned with ideas, self-study methods and initiative, it is felt that pupils will be equipping themselves for further study and their future occupations.

Appendix A 11

JUNIOR SECONDARY COURSE: SYLLABUS FOR GEOGRAPHY

The following syllabus for Geography for the Junior Secondary Course will be introduced as from 1st January, 1973.

The syllabus will be introduced in Standard 5 in 1973 and simultaneously in Standard 6 and Standard 7 in 1974.

JUNIOR SECONDARY COURSE: SYLLABUS FOR GEOGRAPHY

INTRODUCTION

Knowledge of Geography is imperative for that person who wishes to hold his own in a changing community and have an intelligent concept of newspaper reports, radio broadcasts and daily events. Hence the emphasis in the syllabus is on newspaper and radio-news geography throughout the three-year course for the purpose of acquainting the pupils with reality. In the teaching of Geography, particular attention should be paid to newspaper headlines, political developments, international trade, the population explosion and other suchlike matters. This approach necessitates the constant use of atlases and maps.

Despite the accent on the rapidly changing world, the orderliness and regularity of nature as exemplified in the solar system, in the movements of the earth, in the succession of the seasons and in the relatively slow processes of weathering and erosion, should also be stressed in order to impress on the pupil the wonder of Creation.

The pupil who has followed this three-year course should be able to think and reason "geographically" and have at his disposal an adequate basic knowledge and insight for future study of the subject in Standards 8, 9 and 10.

Throughout the syllabus MAN, with his God-given powers, must be the focal point, and the inter-action of man and his environment should be emphasised.

Pupils are expected to become familiar with maps. They should understand the essentials of political and physical maps of the world, relate news items to them and learn to know the South Africa 1:50 000 set of their own area.

The subject-matter is conducive to development of the abilities and aptitudes of pupils. Sufficient opportunities should be given for self-activity, independent study and pupil participation. To encourage pupils to collect and classify facts, provision has been made in all three standards for independent study of topics of geographical interest. This is one method whereby pupils can discover the inter-relationships of geographical phenomena.

It will be noticed that the amount of mapwork in all standards has been slightly increased to ensure that this aspect of the syllabus will form an adequate foundation for the more advanced mapwork included in the new senior secondary geography syllabus.

THE SYLLABUS

STANDARD 5

1. MAP-READING

- 1.1 Use of the compass (eight cardinal points only).
- 1.2 Elementary explanation of longitude and latitude. (Elementary map-reading from an atlas and a drawing of maps in conjunction with the various sections of the syllabus. The use of the altitude key in relief maps and of the scale line to determine distances. The use of the compass should be linked with map-work.)

2. THE WORLD

Physical and Political

A brief study of:

- 2.1 location of the *chief* physical features (mountains, plains and rivers) of each continent;
- 2.2 the more important countries or states and their chief cities;
- 2.3 the following concepts:
The West, The East, The Near East, The Middle East, The Old World, The New World, etc.

3. COMMUNICATIONS

A brief survey of the chief means of communication. Pupils should be led to realise the importance of

these means of communication in their own country and how they facilitate contact with the rest of the world. Special attention should be given to water, air and land transport media, as also to telecommunications.

4. SELECTED REGIONS

(Section 4.1 is compulsory. At least ONE other region must be chosen from 4.2 to 4.5. It is suggested that either the systematic or thematic approach be used here.)

4.1 EUROPE (compulsory)

4.1.1 Great Britain and the Netherlands:

4.1.1.1 Position.

4.1.1.2 Main human activities.

4.1.1.3 Links with R.S.A.

4.1.2 A journey along the Rhine.

4.2 SOUTH AMERICA

The Amazon Basin with special reference to the effect of an equatorial environment on human settlement.

4.3 AUSTRALIA

A sheep farm in S.E. Australia and world trade in wool.

4.4 ASIA

4.4.1 Japan: Farming and fishing.

OR

4.4.2 The petroleum industry of the Persian Gulf. (Refer also to the distribution of the world's major oil fields.)

4.5 NORTH AMERICA

A journey along the St Lawrence Seaway and the Great Lakes.

5. POPULATION

A very brief survey of the factors affecting the distribution of population in:

5.1 the thickly populated countries of the West;

5.2 the countries of the Orient, especially China;

6

- 5.3 the countries with scattered settlement;
- 5.4 the countries with nomadic population.

6. NEWSPAPER GEOGRAPHY

The pupils' attention should be drawn to important items of current affairs from the press, the radio and films. Acquaint them with terms in common use, such as NATO, Afro-Asian Bloc, etc., as they occur in the news. (A map of the world should be used for this purpose.)

7. TOPICS FOR INDEPENDENT STUDY

It is suggested that at least one theme be undertaken annually, either in groups or by individuals. The following serve as examples:

- 7.1 The Antarctic.
- 7.2 The exploration of space.
- 7.3 The future utilisation of natural resources of the sea.
- 7.4 The pollution of air and water, and the disposal of waste products.
- 7.5 Irrigation in South Africa.
- 7.6 Pipe lines and their function.

THE EXAMINATION

1. Total marks: 100.
2. A *year mark* totalling 50 marks will be allocated. This composite mark will comprise marks for mapwork and practical work, cumulative marks and if the school so desires, marks for topics for independent study.
3. Time limit for final examination: 1½ hours.
4. 100 marks will be allocated to the final examination. This allocation will consist of:
 - (a) 20 marks for mapwork;
 - (b) 50 marks for short questions, and
 - (c) 30 marks for paragraph-type answers. (Where possible, answers should be illustrated by means of diagrams, sketch-maps, etc.)

7.

5. The 100 marks for the final examination should be reduced to 50, and the year mark added to this to give a total of 100.
6. General remarks:
 - (a) In the examination, consideration should be given to the aims of the syllabus.
 - (b) In the examinations and tests the short questions should consist of a variety of types (e.g. multiple choice, Ballard-type, direct, etc.).

STANDARD 6

1. THE WORLD

A brief revision of the following:

1.1 *Political maps*

1.1.1 Southern Africa.

1.1.2 Africa.

1.1.3 Europe.

1.1.4 Australasia and Asia.

1.1.5 South America and North America.

1.1.6 The world.

This section is to be linked, wherever possible, with newspaper and radio-news geography.

1.2 *Physical maps*

The world—more important mountains, plains, rivers, lakes, seas and oceans.

2. MAPWORK

The basic elements of a map should be studied by using the 1:50 000 topographic sheet of the pupils' own local area (or of the nearest obtainable area). The following require attention:

- 2.1 Direction and bearing (using compass, watch and sun).
- 2.2 Scale (e.g. size of school grounds, distance to local landmarks, etc.). Use all three types of scales.
- 2.3 Conventional signs (only the most important which appear on the relevant map).
- 2.4 Representation of height above sea-level by means of contours. Recognition of simple land forms.

- 2.5 Method of determining the position of a place by means of lines of longitude and latitude.

N.B.: The 1:50 000 topographic sheets are obtainable from: The Publication Section,
Government Printer,
PRETORIA.

3. ASTRONOMICAL AND MATHEMATICAL GEOGRAPHY

3.1 *The Solar System:*

- 3.1.1 The place of the solar system in the galaxy.
3.1.2 The solar system in general (elementary).
3.1.3 The place of the earth in the solar system (elementary).

3.2 *The Earth:*

- 3.2.1 Shape and size (no proofs).
3.2.2 The movements of the earth:
3.2.2.1 Rotation and chief results (day and night).
3.2.2.2 Revolution with constant inclination of the earth's axis, and the chief results (seasons, length of day and night, equinoxes and solstices—very elementary).
3.2.3 Longitude and time:
3.2.3.1 Basic relationship and simple calculations.
3.2.3.2 Main time-zones.

4. CLIMATOLOGY

- 4.1 Difference between weather and climate.
4.2 Temperature and factors influencing it.
4.3 Air pressure and winds:
4.3.1 Factors which influence pressure.
4.3.2 World pressure zones—general principles.
4.3.3 Wind systems.
4.4 Precipitation:
4.4.1 Condensation as a process—simple cloud types.
4.4.2 Main types of precipitation—rain, hail, snow; forms of condensation—frost and dew.
4.4.3 Factors which influence rainfall.

- 4.4.4 Simple explanation of types of rainfall—conventional, cyclonic and orographic.
- 4.5 Practical work:
- 4.5.1 Weather observations of temperature, pressure, rainfall, cloud types, wind directions and cloudiness. Keeping of weather records.
- 4.5.2 Simple concept of isotherms (actual), isobars (actual) and isohyets.
- 4.5.3 Reading of temperature maps and rainfall maps.
- 4.5.4 Simple introduction to weather maps (obtainable from the Weather Bureau).

5. MAJOR NATURAL REGIONS OF THE WORLD

(This section may either be taught formally or integrated with regional studies.)

The concept of the natural region and the study of the following:

- 5.1 Equatorial rain forest region.
 - 5.2 Savannah region.
 - 5.3 Temperate grassland region.
 - 5.4 Sub-tropical East Coast region (warm temperate East Coast region).
 - 5.5 Mediterranean region.
 - 5.6 Arid regions.
- (These regions may be treated in broad outline under the following headings:
- (i) Position and distribution.
 - (ii) The relationship between position, climate, natural vegetation, and the resulting economic activities.)

6. SOUTH AFRICA

6.1 REPUBLIC OF SOUTH AFRICA

- 6.1.1 Political and physical map.
- 6.1.2 Relief and drainage.
- 6.1.3 Climate:
- 6.1.3.1 Elementary concept of January and July temperature maps, using colours where possible.

- 6.1.3.2 Elementary concept of mean annual rainfall maps, using colours where possible. Emphasise seasonal distribution, type of rain, drought and water conservation.
- 6.1.4 Natural vegetation map.
- 6.1.5 Population map and elementary explanation of distribution pattern (use diagrams to show the racial composition).
- 6.1.6 Maps to represent the distribution of the chief farming and mining products. Diagrammatic representation of the R.S.A. contribution to the world production of gold, diamonds, wool and maize.
- 6.1.7 A geographical study of at least TWO of the following:
 - 6.1.7.1 Highveld (with particular reference to industries and mining).
 - 6.1.7.2 Coastal Belt of Natal.
 - 6.1.7.3 S.W. Cape Mediterranean region.
 - 6.1.7.4 Transvaal Lowveld.
 - 6.1.7.5 Natal Midlands.
 - 6.1.7.6 Transvaal Middleveld.
 - 6.1.7.7 Border/Eastern Cape.
 - 6.1.7.8 Karoo.
 - 6.1.7.9 Kalahari.
 - 6.1.7.10 Transkei or some other Bantu Homeland.
- 6.2 SOUTH WEST AFRICA
 - A brief geographical study.
- 7. SOUTHERN CONTINENTS
 - SOUTH AMERICA AND AUSTRALIA
 - 7.1 SOUTH AMERICA
 - 7.1.1 A geographical study of at least one of the following:
 - 7.1.1.1 The Pampas.
 - 7.1.1.2 Chile.
 - 7.1.1.3 South East Brazil.
 - 7.2 AUSTRALASIA
 - 7.2.1 A geographical study of at least one of the following

- 7.2.1.1 New Zealand
 - 7.2.1.2 Western Australia
 - 7.2.1.3 South East Australia.
8. TOPICS FOR INDEPENDENT STUDY
(Refer to directive in Standard 5 syllabus.)
Consult Standard 7 syllabus for examples of topics.
9. NEWSPAPER GEOGRAPHY
Consult the introduction.

THE EXAMINATION

The same pattern as prescribed for Standard 7 is to be followed.

STANDARD 7

- 1. MAPWORK
 - 1.1 Introduction to aerial photographs and elementary interpretation of 1:50 000 sheets.
 - 1.2 Drawing of cross sections from contour maps.
 - 1.3 Records of practical fieldwork. (See 6—Settlement Geography.)
 - 1.4 Map projections (principles only):
 - 1.4.1 Cylindrical
 - 1.4.2 Conical
 - 1.4.3 Polar
 } With reference to area, direction and shape distortion.
- 2. ASTRONOMICAL AND MATHEMATICAL GEOGRAPHY
 - 2.1 Latitude and noon altitude of the sun.
 - 2.2 The moon phases and eclipses.
 - 2.3 Tides—simple explanation.
- 3. GEOMORPHOLOGY
 - 3.1 Difference between weathering and erosion (very elementary).
 - 3.2 Chief agents of erosion (elementary—without theories):

- 3.2.1 Water
 - 3.2.2 Wind
 - 3.2.3 Ice
 - 3.2.4 Sea
- } Refer to the resulting landforms.
(Use South African examples
wherever possible).

3.3 Transportation and deposition.

4. MAJOR NATURAL REGIONS

A continuation of Standard 6 work. (This section may be taught formally or integrated with regional studies.)

A study of the following:

- 4.1 Monsoon region.
- 4.2 Cool temperature West Coast region.
- 4.3 Coniferous region.
- 4.4 Tundra and Ice Cap regions.

(These regions may be treated in broad outline under the following headings:

- (i) Position and distribution.
- (ii) The relationship between position, climate natural vegetation and the resulting economic activities.)

5. REGIONAL GEOGRAPHY

5.1 AFRICA

5.1.1 A geographical study (with special reference to population, natural resources and economic links with the Republic of South Africa) of at least ONE of the following:

- 5.1.1.1 Botswana.
- 5.1.1.2 Lesotho.
- 5.1.1.3 Swaziland.

5.1.2 A geographical study of at least ONE of the following:

- 5.1.2.1 The Nile Basin.
- 5.1.2.2 Kenya, Uganda, Tanzania.
- 5.1.2.3 Nigeria.
- 5.1.2.4 Malawi.
- 5.1.2.5 Zambia.
- 5.1.2.6 Rhodesia.
- 5.1.2.7 Mozambique and Angola.

TWO OF THE FOLLOWING CONTINENTS:

5.2 EUROPE

- 5.2.1 A geographical study of at least ONE of the following:
- 5.2.1.1 Ruhr industrial area.
 - 5.2.1.2 Major coalfields of the U.K.
 - 5.2.1.3 Switzerland.
 - 5.2.1.4 Norway.
 - 5.2.1.5 Po Valley.
 - 5.2.1.6 Paris Basin.
 - 5.2.1.7 Donbas region.

5.3 NORTH AMERICA

- 5.3.1 A geographical study of at least ONE of the following:
- 5.3.1.1 Lumbering or mining in Canada.
 - 5.3.1.2 Fruit farming in California.
 - 5.3.1.3 Wheat farming in the Prairies of the U.S.A. and Canada.
 - 5.3.1.4 The Maize belt of the U.S.A.
 - 5.3.1.5 The Cotton belt of the U.S.A.
 - 5.3.1.6 The iron and steel industry of North East U.S.A. (with special reference to the motor car industry).

5.4 ASIA

- 5.4.1 A geographical study of at least ONE of the following:
- 5.4.1.1 The Indus Basin.
 - 5.4.1.2 The Ganges Basin.
 - 5.4.1.3 The Yangtze Basin.
 - 5.4.1.4 The Hwang-Ho Basin.
 - 5.4.1.5 The industries of Japan.

6. SETTLEMENT GEOGRAPHY

(Use South African examples. At least ONE field excursion should be undertaken.)

- 6.1 RURAL SETTLEMENT (land use)
ONE OR MORE of the following:
 - 6.1.1 A maize farm.
 - 6.1.2 A sheep farm.
 - 6.1.3 A wine farm.
 - 6.1.4 A sugar estate.
 - 6.1.5 A citrus farm.
 - 6.1.6 A wheat farm.
 - 6.1.7 A tobacco farm.
 - 6.1.8 A cattle farm.
 - 6.1.9 Typical rural industries such as quarries, saw mills, etc.
 - 6.1.10 Intensive farming on small holdings, nurseries, market gardens, etc.
- 6.2 URBAN SETTLEMENT
 - 6.2.1 Reasons for the development of urban settlements and the depopulation of the rural areas.
 - 6.2.2 The study of an important urban settlement, with reference to:
 - 6.2.2.1 residential zones:
 - 6.2.2.1.1 for Whites;
 - 6.2.2.1.2 for Non-Whites;
 - 6.2.2.2 central business area (elementary);
 - 6.2.2.3 industrial zone.
 - 6.2.3 Functions of urban settlements:
 - 6.2.3.1 marketing;
 - 6.2.3.2 manufacturing;
 - 6.2.3.3 social;
 - 6.2.3.4 others of importance.
 - 6.2.4 The role of modern transport in urban development.
- 7. TOPICS FOR INDEPENDENT STUDY
(Refer to directive in Standard 5 syllabus).
ONE of the following:
 - 7.1 Space exploration.
 - 7.2 Weather forecasting.
 - 7.3 Modern means of communication.
 - 7.4 Ocean transport.
 - 7.5 Air transport.

- 7.6 Trans-continental railways.
- 7.7 Fishing in South African and South West African waters.
- 7.8 Whaling in the Southern Ocean.
- 7.9 An important irrigation/hydro-electric project in Africa, for example, the Orange River Project.
8. NEWSPAPER GEOGRAPHY
Consult introduction to this syllabus.
9. PRACTICAL WORK
Weather observations to be continued as in Standard 6 (paragraph 4.5).

THE EXAMINATION

General

- (a) When examining candidates the aims of the syllabus must constantly be borne in mind.
- (b) In the examinations and tests the short questions should consist of a variety of types (e.g. multiple choice, Ballard-type, direct, etc.).

THE FINAL EXAMINATION

- (a) One question paper with a time limit of 1½ hours must be set.
- (b) 150 marks are allocated to this paper. This allocation will consist of:
- (i) 30 marks for mapwork;
 - (ii) 30 marks for short questions, and
 - (iii) 90 marks for essay- and paragraph-type questions.
- (Where possible, answers should be illustrated by means of sketch-maps and diagrams.) 5 questions should be set of which 3 must be answered.

THE YEAR MARK

A maximum of 50 marks is allocated to practical work (e.g. workbooks, mapwork, and/or study topics which reflect the year's work).

THE TOTAL MARK

The mark obtained in the final examination (out of 150) is reduced to a total out of 100. The year mark (out of 50) is added to this mark to determine the final mark (out of 150).

(Education Gazette, 8 March 1973)

Appendix A 12

**SENIOR SECONDARY COURSE: SYLLABUS FOR
GEOGRAPHY (HIGHER GRADE)**

The following syllabus for Geography (Higher Grade) for the Senior Secondary Course will be introduced as from 1st January, 1974.

The syllabus will be introduced in Standard 8 in 1974, and the first Senior Certificate Examination on this syllabus will be held in November/December, 1976.

**SENIOR SECONDARY COURSE: SYLLABUS FOR
GEOGRAPHY (HIGHER GRADE)**

Standard 8

- 0. General geographical techniques
- 0.1 Introduction to map analysis.
- 0.2 Introduction to analysis of photographs.
- 0.3 Preparation for fieldwork.
- 0.4 Diagrammatic representation of statistics.
- 1. Physical Geography
 - 1.1 Climatology:
 - 1.1.1 The seasons, solstices and equinoxes.
 - 1.1.2 The atmosphere: composition and structure.
 - 1.1.3 Temperature:
 - (i) Heating of the atmosphere by solar and terrestrial radiation and convection.
 - (ii) Factors causing horizontal variations in temperature.
 - (iii) Lapse rates of temperature.
 - 1.1.4 Moisture in the atmosphere:
 - (i) Relative humidity, dewpoint temperature.
 - (ii) Simple cloud classification and recognition (cirriform, stratiform, cumuliform and their respective types).
 - 1.1.5 Precipitation: rain, hail, snow.
Condensation: dew, frost.
 - 1.1.6 *Practical work*: use of barometers, rain gauges, thermometers, anemometers and hygrometers; weather records; drawing isolines and simple *climatic maps* and diagrams and their interpretation.

- 1.2 Geomorphology:
 - 1.2.1 Definitions: internal and external forces.
 - 1.2.2 The earth's crust: composition and structure (sial, sima, moho).
 - 1.2.3 Rock types: origin, characteristics and significance of igneous, sedimentary and metamorphic types.
 - 1.2.4 Internal forces and resultant landforms: continental drift; warping, faulting and folding; volcanism and earthquakes; mobile belts (areas of crustal instability) and shield areas.
 - 1.2.5 Weathering (processes and features).
 - 1.2.6 *Practical work*: identification of simple rock types; contour sketches and use of topographic maps and photographs to illustrate specific landform types of 1.2.4; drawing of topographic profiles; at least one field excursion should be undertaken.
- 2. Human Geography
 - 2.1 Population Geography:
 - 2.1.1 Population distribution and density:
 - (a) First order areas: S.E. Asia, Europe, Indian sub-continent, Eastern North America.
 - (b) Second order areas: Indonesian/Philippine Archipelago, Nile Valley, Central America, S.E. Australia, Guinea Coast, California.
 - 2.1.2 Population characteristics: birth and death rates, age structure and population pyramids; sex balance; rural/urban ratios.
 - 2.1.3 Population movements:
 - (a) Spontaneous movement: within political units (eg. rural depopulation) and across political boundaries (immigration and emigration and their effects); migrant labour.
 - (b) Induced movement (e.g. effects of slavery in former times, ancient and modern pogroms).
 - 2.1.4 Factors influencing the rapid growth of world population since the Industrial Revolution: improved farming methods and assured food supplies, improved health, reduced infant mortality rates, increased longevity.

- 2.1.5 The population explosion:
- (a) Growth rates, past and present.
 - (b) Associated problems: food supplies (the "green revolution" associated with the development of hybrid seed types and new forms of food production), living space; destruction of limited natural resources; disposal of waste.
- 2.1.6 *Practical work*: statistical diagrams and maps to show pyramids, densities and distribution patterns—their construction and interpretation.
3. Regional Geography
- 3.1 A general regional study of ONE or more from each of the categories listed below, with special reference to population problems: (The approach can be systematic or thematic.)
- (a) Technologically advanced countries:
 - (i) Australia,
 - (ii) Italy,
 - (iii) Canada,
 - (iv) Japan,
 - (v) Netherlands.
 - (b) Technologically less advanced countries:
 - (i) Brazil,
 - (ii) Egypt,
 - (iii) India, Pakistan and Bangla Desh,
 - (iv) Indonesia,
 - (v) Botswana, Lesotho and Swaziland.
- It is suggested that these studies should emphasise problems and contrasts within each country. Comparisons between the countries chosen in (a) and (b) should be stressed.
- 3.2 Assignments:
- Two individual research assignments must be undertaken during the year. THESE MUST BE CHOSEN FROM COUNTRIES NOT STUDIED IN 3.1 ABOVE.

Standard 9

- 1. Physical Geography
- 1.1 Climatology:

- 1.1.1 Atmospheric pressure: definition and representation as isobars at M.S.L. and contours of constant pressure surfaces; pressure gradients.
- 1.1.2 Relationships between pressure and wind (stress air-flow parallel to the isobars and direction of movement). Oblique flow at a small angle across isobars in the friction layer is best considered under 1.1.4 (i).
- 1.1.3 General circulation of the atmosphere:
 - (i) Primary circulation: meridional (N-S) section (tri-cellular arrangement); sub-tropical and polar highs, polar front, I.T.C.Z.
 - (ii) Secondary circulation: lows (depressions) and westerly waves (the life cycle of a depression is not to be included here); tropical easterlies (formerly trades) and accompanying waves; monsoons.
 - (iii) Tertiary circulation: land and sea breezes, katabatic flow, Chinook, Föhn and Berg winds, Mistral.
- 1.1.4 Weather processes:
 - (i) Causes of uplift: types of convergence, i.e. direct and indirect, frictional, slope (relief), frontal and convectional.
 - (ii) Thermal stability and instability.
 - (iii) Convergence and instability as the cause of precipitation.
- 1.1.5 *Practical work*: interpretation of mean pressure, temperature and rainfall maps; introduction to synoptic charts (airflow patterns from pressure distributions).
- 1.2 Oceanography:
 - 1.2.1 Relationship between atmospheric and oceanic circulations: important ocean currents and their effects.
 - 1.2.2 Basic causes and significance of tides.
- 1.3 Geomorphology:
 - 1.3.1 Fluvial action: fluvial processes and landforms typical of fluvial erosion and deposition.

- 1.3.2 Marine action and resultant landforms; coastal types and their significance.
- 1.3.3 Wind action and resultant landforms OR solution processes and resultant landforms (karst geomorphology).
- 1.3.4 Glacial action and resultant landforms.
- 1.3.5 *Practical work*: the identification, interpretation and sketching of relevant landforms from different scale topographic maps and photographs; at least one field excursion should be undertaken.
- 2. Human Geography
 - 2.1 Economic Geography:
 - 2.1.1 Definitions: renewable and non-renewable resources, primary, secondary and tertiary economic activities.
 - 2.1.2 Primary activities:
 - (a) Farming: commercial and subsistence, including
 - (i) mention of basic types: arable, pastoral, irrigation and plantation;
 - (ii) study of world production of at least one of the following: rice, maize, wheat.
 - (b) Mining:
 - (i) basic economics of exploitation;
 - (ii) study of world production of at least one of the following: coal, petroleum, iron ore.
 - 2.1.3 Secondary activities:
 - (a) Light and heavy industry.
 - (b) Factors favouring location of industry (to include sample study of South African iron and steel industry).
 - 2.1.4 Tertiary activities: Service industries, electricity, transportation and trade.
 - 2.1.5 Stages of economic development:
 - (i) Traditional society (subsistence or weak agricultural economy).
 - (ii) Pre-industrial societies (basically agricultural economy).
 - (iii) Take-off stage (commencement of self-generating development).

- (iv) Industrial societies (more workers in industrial sector than in any other; few in agriculture).
- (v) Post-industrial societies (more workers in tertiary services than in industry).

3. Regional Geography

3.1 A general regional study of ONE or more from each of the categories listed below, with special reference to regional economic development:

(a) Technologically advanced countries:

- (i) France,
- (ii) United Kingdom,
- (iii) U.S.S.R.,
- (iv) U.S.A.,
- (v) Western Germany (Federal Republic of Germany).

(b) Technologically less advanced countries:

- (i) Chile,
- (ii) China,
- (iii) Kenya, Tanzania and Uganda,
- (iv) Nigeria,
- (v) Mocambique and Angola.

The studies *must* emphasise problems and contrasts within each country. Comparisons between the countries chosen in (a) and (b) must be stressed.

3.2 Assignments:

Two individual research assignments must be undertaken during the year. THESE MUST BE CHOSEN FROM COUNTRIES NOT STUDIED IN 3.1 ABOVE.

Standard 10

1. Physical Geography

1.1 Climatology:

1.1.1 Some atmospheric models:

- (i) Geostrophic flow.
- (ii) The thunderstorm (including tornadoes).
- (iii) The growth and decay of the mid-latitude cyclone and the weather associated with it.

- (iv) Tropical cyclones.
- 1.1.2 Explanation of climatic conditions :
 - (i) on a regional scale :
 - (a) Western Europe (travelling disturbances);
 - (b) Equatorial Africa (ITCZ and its movements, easterly waves and thunderstorms);
 - (c) Southern Africa (travelling disturbances and effect of anticyclonic circulations);
 - (ii) on a local scale :
 - (a) valley climates (effect of aspect, heating and cooling, local winds and temperature inversions, frost and fog);
 - (b) city climates (contrast between city and rural surroundings, temperature and radiation differences, characteristics of urban climates—increased fogs, air pollution, rainfall, heat islands).
- 1.1.3 *Practical work*: weather maps, with special reference to South Africa.
- 1.2 Geomorphology :
 - 1.2.1 Drainage basins, drainage patterns, river capture; river profiles and grade.
 - 1.2.2 Topography associated with horizontal and inclined strata (mesas, buttes, cuestas), massive igneous rocks (tors and domes).
 - 1.2.3 Slopes and slope forms (crest, free-face, talus slope and pediment).
 - 1.2.4 Evolution of landscapes :
 - (i) Peneplanation and pediplanation.
 - (ii) Concept of dynamic equilibrium.
 - 1.2.5 Soils :
 - (i) Simple zonal types.
 - (ii) Soil-forming processes (interaction between parent material, climate and vegetation).
 - (iii) Soil erosion and soil conservation (leading to ecosystem and environmental balance).

- 1.2.6 *Practical work*: the identification and interpretation of relevant landforms from topographic maps of different scales; at least one field excursion should be undertaken; the measurement of simple profiles by means of a suitable level; simple landscape interpretation.
2. Human Geography
- 2.1 Settlement Geography:
- 2.1.1 Rural settlement:
- (a) Types—nucleated (including sub-types) and dispersed.
- (b) Factors influencing location and form.
- 2.1.2 Urban settlement:
- (a) Factors influencing location and form.
- (b) Urban morphology and land use zones.
- (c) Models of urban structure (concentric, sector and multiple nuclei).
- (d) Distribution of urban centres:
- (i) spheres of influence;
- (ii) urban hierarchies and simple central place theory.
- (e) Urban expansion (sprawl, ribbon development, conurbation and metropolitan regions).
- (f) Urban problems (congestion, centralisation, blight—urban decay, pollution and environmental despoilation).
- 2.1.3 *Practical work*:
- (i) Interpretation of settlement types and patterns through topographical map analysis.
- (ii) Urban land use mapping, interpretation of urban maps and photographs, transect studies.
3. Regional Geography
- 3.1 Republic of South Africa:
- 3.1.1 Physical background:
- (a) Physiography.
- (b) Climate (see 1.1.2 (c)).
- (c) Natural vegetation.

- 3.1.2 Water resources and some general resource problems:
- (a) Distribution, conservation and use of water resources.
 - (b) Conservation of resources, environmental depopulation (including pollution and soil erosion), effects of drought.
- 3.1.3 Human background:
- (a) Population: density and distribution, composition, growth and movement (including rural depopulation).
 - (b) Bantu Homelands.
- 3.1.4 Economic activities:
- 3.1.4.1 Definition of Gross Domestic Product (value of all goods and services produced inside a country).
- 3.1.4.2 Contributions to South African Gross Domestic Product:
- (a) by primary activities:
 - (i) farming: maize, wheat, sugar, fruit, beef and dairy farming, forestry (main areas and factors influencing production must be considered);
 - (ii) mining: gold, diamonds, coal; copper, iron ore (main areas and factors influencing production must be considered);
 - (b) by secondary activities in general;

(In this connection a study of the major industrial regions must be made, viz.
 Southern Transvaal (Pretoria—Witwatersrand—Vereeniging/Sasolburg),
 Durban—Pinetown,
 South Western Cape,
 Port Elizabeth—Uitenhage.
 When studying these regions the factors influencing the location and development of manufacturing industries must be considered. Attention should also be given to problems of industrial decentralisation, border industries and new growth areas.)

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(c) by tertiary activities in general.

(In this connection the following must be considered:

- (i) Communications (stress the interrelationships between urban centres, communications and economic activities);
- (ii) electricity as a major service industry;
- (iii) international trade.)

3.1.5 Urbanisation:

Detailed study of one major port (Durban, Cape Town or Port Elizabeth) and one large inland centre (Johannesburg, Pretoria or Bloemfontein), with special reference to site, situation, sphere of influence, form and function.

3.2 A regional study of South West Africa:

In dealing with this section, problems associated with regional economic development must be noted.

4. Map interpretation

Integrated map and photo analysis of specific areas covered by the 1:50 000 map sheets of South Africa.

5. Research assignments: two to be completed; topics to be chosen by the teacher.

THE EXAMINATION

1. Standards 8 and 9 will be examined internally at the end of each year.

2. The final external examination will be set on the Standard 10 syllabus, but candidates will be expected to draw on their overall knowledge of geography in answering Paper I (map work and photo interpretation).

3. The examination will consist of TWO papers:

Paper I—1 hour

Paper II—3 hours

4. Paper I

One compulsory question on map and photo interpretation will be set.

(60)

Paper II

The paper will be divided into 3 sections.

Seven questions will be set, *four* must be answered.

Section A. Physical Geography. Two questions will be set. One question will be systematic, the other may be of the composite variety drawing on Regional and/or Human Geography. *One* question must be answered. (60)

Section B. Human Geography. Two questions will be set. One question will be systematic, the other may be of the composite variety drawing on Physical and/or Regional Geography. *One* question must be answered. (60)

Section C. Regional Geography. Three questions will be set. *One* question must be answered. (60)

The fourth question may be chosen from Section A, B or C. (60)

(300)

5. The questions may consist of sub-sections. These may be of the essay type, shorter questions, short questions and questions on maps.
6. Candidates will be rewarded for annotated diagrams, sketch maps, etc. to illustrate examination answers where applicable.

(Education Gazette, 12 April 1973)

Appendix A 13

SENIOR SECONDARY COURSE: SYLLABUS FOR
GEOGRAPHY (STANDARD GRADE)

The following syllabus for Geography (Standard Grade) for the Senior Secondary Course will be introduced as from 1st January, 1974.

The syllabus will be introduced in Standard 8 in 1974, and the first Senior Certificate Examination on this syllabus will be held in November/December, 1976.

SENIOR SECONDARY COURSE: SYLLABUS FOR
GEOGRAPHY (STANDARD GRADE)

For the standard grade course the approach must be more direct, and self-activity methods should be used under more direct supervision by the teacher. Differentiation will be achieved primarily through the examination where the type of questions set will be more straightforward.

Although many of the topics to be studied are common to both grades, the standard grade pupils will not be expected to study these in the same depth.

Standard 8

- 0. General geographical techniques
 - 0.1 Introduction to map analysis.
 - 0.2 Introduction to analysis of photographs.
 - 0.3 Preparation for fieldwork.
 - 0.4 Diagrammatic representation of statistics.
- I. Physical Geography
 - 1.1 Climatology:
 - 1.1.1 The seasons, solstices and equinoxes.
 - 1.1.2 The atmosphere: composition and structure.
 - 1.1.3 Temperature:
 - (i) Heating of the air.
 - (ii) Horizontal variations.
 - (iii) Vertical variations.
 - 1.1.4 Moisture in the atmosphere:
 - (i) Relative humidity, dewpoint temperature.
 - (ii) Simple cloud types.

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- 1.1.5 Precipitation: rain, hail, snow.
Condensation: dew, frost.
- 1.1.6 *Practical work*: use of barometers, rain gauges, thermometers, anemometers and hygrometers; weather records; drawing isolines and simple *climatic maps* and diagrams and their interpretation.
- 1.2 Geomorphology:
 - 1.2.1 Definitions: internal and external forces.
 - 1.2.2 The earth's crust: composition and structure (sial, sima).
 - 1.2.3 Rock types: origin, characteristics.
 - 1.2.4 Internal forces and resultant landforms: continental drift; warping, faulting and folding; vulcanism and earthquakes.
 - 1.2.5 Weathering (processes and features).
 - 1.2.6 *Practical work*: identification of simple rock types; contour sketches and use of topographic maps and photographs to illustrate specific landform types of 1.2.4; at least one field excursion should be undertaken.
- 2. Human Geography
 - 2.1 Population Geography:
 - 2.1.1 Population distribution and density:
 - (a) First order areas: S.E. Asia, Europe, Indian subcontinent, Eastern North America.
 - (b) Second order areas: Indonesian/Philippine Archipelago, Nile Valley, Central America, S.E. Australia, Guinea Coast, California.
 - 2.1.2 Population movements:
 - (a) Spontaneous movement: within political units (e.g. rural depopulation) and across political boundaries (immigration and emigration and their effects); migrant labour.
 - (b) Induced movement (e.g. effects of slavery in former times, ancient and modern pogroms).
 - 2.1.3 The population explosion:
 - (a) Growth rates, past and present.
 - (b) Associated problems: food supplies (the "green revolution" associated with the development of

hybrid seed types and new forms of food production): living space, destruction of limited natural resources; disposal of waste.

2.1.4 *Practical work*: statistical diagrams and maps to show densities and distribution patterns—their construction and interpretation.

3. Regional Geography

3.1 A general regional study of ONE or more from each of the categories listed below, with special reference to population problems: (The approach can be systematic or thematic.)

(a) Technologically advanced countries:

- (i) Australia,
- (ii) Italy,
- (iii) Canada,
- (iv) Japan,
- (v) Netherlands.

(b) Technologically less advanced countries:

- (i) Brazil,
- (ii) Egypt,
- (iii) India, Pakistan and Bangla Desh,
- (iv) Indonesia,
- (v) Botswana, Lesotho and Swaziland.

It is suggested that the studies should emphasise problems and contrasts within each country. Comparisons between the countries chosen in (a) and (b) should be stressed.

3.2 Assignments:

One individual research assignment must be undertaken during the year. THIS MUST BE CHOSEN FROM COUNTRIES NOT STUDIED IN 3.1 ABOVE.

Standard 9

1. Physical Geography

1.1 Climatology:

1.1.1 Atmospheric pressure: definition and representation.

1.1.2 Relationship between pressure and wind.

- 1.1.3 General circulation of the atmosphere.
- (i) Primary circulation: sub-tropical and polar highs, polar front, inter-tropical convergence zone (I.T.C.Z.).
 - (ii) Secondary circulation: lows (depressions) (the life cycle of a depression is not to be included here); tropical easterlies (formerly trades); monsoons.
 - (iii) Tertiary circulation: land and sea breezes, katabatic flow, Föhn and Berg winds, Mistral.
- 1.1.4 Weather processes:
- (i) Causes of uplift.
 - (ii) Thermal stability and instability (definitions only).
 - (iii) Simple explanation of precipitation.
- 1.1.5 *Practical work*: interpretation of mean pressure, temperature and rainfall maps; introduction to synoptic charts (airflow patterns from pressure distributions).
- 1.2 Oceanography:
- 1.2.1 Important ocean currents and their effects.
- 1.2.2 Significance of tides.
- 1.3 Geomorphology:
- 1.3.1 Fluvial action: landforms typical of fluvial erosion and deposition.
- 1.3.2 Marine action and resultant landforms; coastal types and their significance.
- 1.3.3 Wind action and resultant landforms OR karst landforms.
- 1.3.4 Glacial action and resultant landforms.
- 1.3.5 *Practical work*: the identification, interpretation and sketching of relevant landforms from different scale topographic maps and photographs; at least one field excursion should be undertaken.
2. Human Geography
- 2.1 Economic Geography
- Definitions: renewable and non-renewable resources, primary, secondary and tertiary economic activities.

- 5.3 the countries with scattered settlement;
- 5.4 the countries with nomadic population.

6. NEWSPAPER GEOGRAPHY

The pupils' attention should be drawn to important items of current affairs from the press, the radio and films. Acquaint them with terms in common use, such as NATO, Afro-Asian Bloc, etc., as they occur in the news. (A map of the world should be used for this purpose.)

7. TOPICS FOR INDEPENDENT STUDY

It is suggested that at least one theme be undertaken annually, either in groups or by individuals. The following serve as examples:

- 7.1 The Antarctic.
- 7.2 The exploration of space.
- 7.3 The future utilisation of natural resources of the sea.
- 7.4 The pollution of air and water, and the disposal of waste products.
- 7.5 Irrigation in South Africa.
- 7.6 Pipe lines and their function.

THE EXAMINATION

1. Total marks: 100.
2. A *year mark* totalling 50 marks will be allocated. This composite mark will comprise marks for mapwork and practical work, cumulative marks and if the school so desires, marks for topics for independent study.
3. Time limit for final examination: 1½ hours.
4. 100 marks will be allocated to the final examination. This allocation will consist of:
 - (a) 20 marks for mapwork;
 - (b) 50 marks for short questions, and
 - (c) 30 marks for paragraph-type answers. (Where possible, answers should be illustrated by means of diagrams, sketch-maps, etc.)

3.2 Assignments:

One individual research assignment must be undertaken during the year. THIS MUST BE CHOSEN FROM COUNTRIES NOT STUDIED IN 3.1 ABOVE.

Standard 10

1. Physical Geography
 - 1.1 Climatology:
 - 1.1.1 The development of:
 - (i) thunderstorms;
 - (ii) mid-latitude cyclones;
 - (iii) tropical cyclones.
 - 1.1.2 Explanation of climatic conditions:
 - (i) on a regional scale:
 - (a) Western Europe;
 - (b) Southern Africa;
 - (ii) on a local scale:
 - (a) valley climates;
 - (b) city climates.
 - 1.1.3 *Practical work*: elementary weather maps, with special reference to South Africa.
 - 1.2 Geomorphology:
 - 1.2.1 Drainage basins, drainage patterns, river capture.
 - 1.2.2 Topography associated with horizontal and inclined strata (mesas, buttes, cuestas), massive igneous rocks (tors and domes).
 - 1.2.3 Slopes and slope forms (crest, free-face, talus slope and pediment).
 - 1.2.4 Soils:
 - (i) Simple zonal types.
 - (ii) Soil-forming processes (interaction between parent material, climate and vegetation).
 - (iii) Soil erosion and soil conservation.
 - 1.2.5 *Practical work*: the identification and interpretation of relevant landforms from topographic maps of different scales; at least one field excursion should be undertaken; the measurement of simple profiles by means of a suitable level; simple landscape interpretation.

- 2. Human Geography
 - 2.1 Settlement Geography:
 - 2.1.1 Rural settlement:
 - (a) Types—nucleated and dispersed.
 - (b) Factors influencing location and form.
 - 2.1.2 Urban settlement:
 - (a) Factors influencing location and form.
 - (b) Urban morphology and land use zones.
 - (c) Urban expansion (sprawl, ribbon development).
 - (d) Conurbation and metropolitan regions.
 - (e) Urban problems (congestion, centralisation, blight—urban decay, pollution and environmental despoilation).
 - 2.1.3 *Practical work*: interpretation of settlement types.
 - 3. Regional Geography
 - 3.1 Republic of South Africa:
 - 3.1.1 Physical Background
 - (a) Physiography.
 - (b) Climate (see 1.1.2 (c)).
 - (c) Natural vegetation.
 - 3.1.2 Water resources and some general resource problems:
 - (a) Distribution, conservation and use of water resources.
 - (b) Conservation of resources, environmental despoilation (including pollution and soil erosion).
 - 3.1.3 Human background:
 - (a) Population: density and distribution, composition, growth and movement.
 - (b) Bantu Homelands.
effects of drought.
 - 3.1.4 Economic activities:
 - 3.1.4.1 Definition of Gross Domestic Product (value of all goods and services produced inside a country).
 - 3.1.4.2 Contributions to South African economy:
 - (a) by primary activities:
 - (i) farming: maize, wheat, sugar, fruit, beef and dairy farming, forestry (main areas and factors influencing production must be considered).

(ii) mining: gold, diamonds, coal, copper, iron ore (main areas and factors influencing production must be considered);

(b) by secondary activities in general;
 (In this connection a study of the major industrial regions must be made, viz.
 Southern Transvaal (Pretoria—Witwatersrand—Vereeniging/Sasolburg),
 Durban—Pinetown,
 South Western Cape,
 Port Elizabeth—Uitenhage.

When studying these regions the factors influencing the location and development of manufacturing industries must be considered. Attention should also be given to problems of industrial decentralisation, border industries and new growth areas.)

(c) by tertiary activities in general.

(In this connection the following must be considered:

(i) Communications (stress the interrelationships between urban centres, communications and Economic activities).

(ii) electricity as a major service industry.)

3.2 A regional study of South West Africa:

In dealing with this section, problems associated with regional economic development must be noted.

4. Map interpretation

Integrated map and photo analysis of specific areas covered by the 1:50 000 map sheets of South Africa.

THE EXAMINATION

1. Standards 8 and 9 will be examined internally at the end of each year.
2. The final external examination will be set on the Standard 10 syllabus, but candidates will be expected to draw on their overall knowledge of geography in answering Paper I (map work and photo interpretation).

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3. The examination will consist of TWO papers :
 Paper I ... 1 hour
 Paper II ... 2½ hours
4. Paper I
 One compulsory question on map and photo interpretation will be set. (60)
 Paper II
 The paper will be divided into 3 sections.
Eight questions will be set, *four* must be answered.
Section A. Physical Geography. Two questions will be set. One question will be systematic, the other may be of the composite variety drawing on Regional and/or Human Geography. *One* question must be answered. (60)
Section B. Human Geography. Two questions will be set. One question will be systematic, the other may be of the composite variety drawing on Physical and/or Regional Geography. *One* question must be answered. (60)
Section C. Regional Geography. Four questions will be set. *One* question must be answered. (60)
 The fourth question may be chosen from Section A, B or C. (60)
 (300)
5. The questions may consist of sub-sections. These may be of the essay-type, shorter questions, short questions and questions on maps.
6. Candidates will be rewarded for annotated diagrams, sketch maps, etc. to illustrate examination answers where applicable.
7. *Note: As true differentiation will largely depend on the nature of the examination, it should be noted that questions should be more direct and simpler than those set in the Higher Grade.*

(Education Gazette, 12 April 1973.)

PROVINSIALE ADMINISTRASIE
VAN DIE KAAP DIE GOEIE HOOP



PROVINCIAL ADMINISTRATION
OF THE CAPE OF GOOD HOPE

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February 1980

TO ALL SCHOOLS OFFERING GEOGRAPHY HG AND SG,
CHIEF INSPECTORS, REGIONAL CHIEF INSPECTORS
AND INSPECTORS OF EDUCATION

SENIOR SECONDARY COURSE: GEOGRAPHY HG AND SG: AMENDMENTS TO
SYLLABUSES

The attention of Principals is drawn to the fact that the syllabuses
for Geography HG and SG have been amended as follows:
(These amendments take immediate effect.)

1. STD 8 H.G.
 - 1.1 Section 1.2.6 on page 3
'at least one field excursion' must be replaced by:
well planned and meaningful fieldwork must be undertaken.
 - 1.2 Section 3.2 on page 4 should be changed to read:
 - 3.2 Assignments
 - 3.2.1 Two short individual assignments to broaden the study
of work covered by the syllabus, at least one of which
should be on regional geography.
 - 3.2.2 Well-planned and relevant fieldwork, integrated with
Physical, Human or Regional geography is a syllabus
requirement. A study based on fieldwork may be
presented as one of the two assignments.
2. STD 8 S.G.
 - 2.1 Section 1.2.6 on page 3
'at least one field excursion should be undertaken' must be
replaced by:

well/....

well planned and meaningful fieldwork must be undertaken.

2.2 Section 3.2 on page 4 should be changed to read:

3.2 Assignments

3.2.1 Two short individual assignments to broaden the study of work covered by the syllabus, at least one of which should be on regional geography.

3.2.2 Well-planned and relevant fieldwork, integrated with Physical, Human or Regional geography is a syllabus requirement. A study based on fieldwork may be presented as one of the two assignments.

2.3 Section 0 should be integrated with other work and should not be seen as a separate topic.

3. STD 9 H.G.

3.1 Section 1.3.5 on page 6

'at least one field excursion should be undertaken' must be replaced by:

well planned and meaningful fieldwork must be undertaken.

3.2 Section 3.2 on page 7 should be changed to read:

3.2 Assignments

3.2.1 Two short individual assignments to broaden the study of work covered by the syllabus, at least one of which should be on regional geography.

3.2.2 Well-planned and relevant fieldwork, integrated with Physical, Human or Regional geography is a syllabus requirement. A study based on fieldwork may be presented as one of the two assignments.

4. STD 9 S.G.

4.1 Section 1.3.5 on page

'at least one field excursion should be undertaken' must be replaced by:

well planned and meaningful fieldwork must be undertaken.

- 4.2 Section 3.2 on page 7 should be changed to read:
- 3.2 Assignments
- 3.2.1 Two short individual assignments to broaden the study of work covered by the syllabus, at least one of which should be on regional geography.
- 3.2.2 Well-planned and relevant fieldwork, integrated with Physical, Human or Regional geography is a syllabus requirement. A study based on fieldwork may be presented as one of the two assignments.
5. STD 10 H.G.
- 5.1 Section 1.1.2 on page 8 should be changed as follows:
- 1.1.2 Climatic explanation
- (i) on a regional scale:
- (a) Equatorial Africa (I.T.C.Z. and its movements and thunderstorms).
- (b) Southern Africa (travelling disturbances and effect of anti-cyclonic circulations).
- (Thus Western Europe and easterly waves have been omitted. Part (ii) remains unchanged.)
- 5.2 Section 1.2.1 on page 8
- 'river profiles and grade.' should be changed to read:
- river profiles and the concept of grade.
- 5.3 Section 1.2.5 on page 8 should be changed as follows:
- 1.2.5 Soils:
- (i) Soil forming factors (interaction between parent material, climate, vegetation, time and relief).
- (ii) Soil erosion and conservation (leading to the concept of ecosystems and environmental balance).
- (Thus simple zonal types have been omitted and the soil forming factors have been clarified.)
- 5.4 Section 1.2.6 on page 9
- The words 'at least one field excursion should be undertaken,' should be deleted. (See point 5.15)

- 5.5 Section 2.1.2 on page 9, point (a) should be changed to read as follows:
- (a) Factors influencing the site, situation and functions of urban settlements.
- Point (d)(ii) should be changed to read as follows:
- (ii) urban hierarchies and simple central place theory (K-values will not be examined).
- 5.6 Section 2.1.3 on page 9, point (i) should be changed to read as follows:
- (i) Interpretation of settlement types and morphology through topographical map analysis.
- 5.7 Section 3.1 on page 9.
- This heading should be changed to read:
- 3.1 Republic of South Africa and Independent Black States within its borders, excluding Lesotho.
- (This has been done to avoid any political embarrassment.)
- 5.8 Section 3.1.1 on page 9, the heading should be changed as follows:
- 3.1.1 Physical background: (briefly)
- 5.9 Section 3.1.3(b) on page 10 should be changed to read:
- (b) Black Areas (Independent States and Homelands).
- 5.10 Section 3.1.4.1 on page 10 should be changed to read:
- Definition of Gross Domestic Product (value of all final goods and services produced within the borders of a country in the course of a financial year).
- 5.11 Section 3.1.4.2(a) on page 10 should be changed as follows:
- 3.1.4.2 Contributions to the South African Gross Domestic Product:
- (a) By primary activities:
 - (i) The contribution of the agricultural sector in general. In addition, TWO of the following agricultural products must be studied: mealies, wheat, sugar, fruit, beef, dairy products, wool, forestry products. (Emphasis should be placed on the distribution, and on the physical, human and economic factors

which influence the production of the commodities which are chosen.)

- (ii) The contribution of the mining sector in general. In addition TWO of the following must be studied: gold, diamonds, coal, copper, iron ore. (Emphasis should be placed on the distribution, and on the physical, human and economic factors which influence the production of the commodities which are chosen.)

- 5.12 Section 3.1.4.2(b) on page 10. The last sentence should be changed as follows:
Attention should also be given to urbanization, problems of industrial decentralisation, border industries and new growth areas.
- 5.13 Section 3.1.5 on page 11
The entire section on Urbanization should be deleted.
- 5.14 Section 3.2 on page 11 should be changed as follows:
3.2 South West Africa
In dealing with this section ONLY regional economic development and problems associated therewith must be noted.
- 5.15 Section 5 on page 11 should be changed as follows:
5.0 Supplementary work
5.1 Research assignments: Two to be completed, topics to be approved by the teacher.
5.2 Well-planned and meaningful fieldwork should be undertaken whenever possible.
6. STD 10 S.G.
- 6.1 Section 1.1.2 on page 7
Point (i)(a) Western Europe should be deleted.
- 6.2 Section 1.2.4 on page 7 should be changed as follows:
1.2.4 Soils:
(i) Soil forming factors (interaction between parent material, climate, vegetation, time and relief).

(ii) Soil erosion and conservation.

- 6.3 Section 1.2.5 on page 7
The words 'at least one field excursion should be undertaken,' should be deleted. (See point 6.12).
- 6.4 Section 2.1.2 on page 8, point (a) should be changed to read as follows:
(a) Factors influencing the site, situation and functions of urban settlements.
- 6.5 Section 2.1.3 on page 8 should be changed to read as follows:
2.1.3 Practical work: Identification of settlement types and morphology.
- 6.6 Section 3.1 on page 8, the heading should be changed to read:
3.1 Republic of South Africa and Independent Black States within its borders, excluding Lesotho.
- 6.7 Section 3.1.1 on page 8, the heading should be changed to read:
3.1.1 Physical background: (briefly)
- 6.8 Section 3.1.3(b) on page 8 should be changed to read:
(b) Black Areas (Independent States and Homelands).
- 6.9 Section 3.1.4.1 on page 8 should be changed to read:
Definition of Gross Domestic Product (value of all final goods and services produced within the borders of a country in the course of a financial year).
- 6.10 Section 3.1.4.2(a) on page 8 should be changed as follows:
3.1.4.2 Contributions to the South African Gross Domestic Product:
(a) By primary activities
(i) The contribution of the agricultural sector in general. In addition, ONE of the following agricultural products must be studied: mealies, wheat, sugar, fruit, beef, dairy products, wool, forestry products. (Emphasis should be placed on the distribution, and on the physical, human and economic factors which influence the production of the commodities which are chosen.)

(ii) The contribution of the mining sector in general. In addition ONE of the following must be studied: gold, diamonds, coal, copper, iron ore. (Emphasis should be placed on the distribution, and on the physical, human and economic factors which influence the production of the commodities which are chosen.)

6.11 Section 3.2 on page 9 should be changed as follows:

3.2 South West Africa

In dealing with this section ONLY regional economic development and problems associated there with must be noted.

6.12 A point 5.0 should be added to page 9 as follows:

5.0 Well-planned and meaningful fieldwork should be undertaken whenever possible.

6.13 The Examination

Section 3 on page 10 should be changed as follows:

Paper II --- 3 hours

(Paper II becomes 3 hours instead of $2\frac{1}{2}$ hours).

NOTE for 1980 and 1981

In 1980 only Maize, Sugar, Dairy Products, Forestry Products under section 3.1.4.2(a)(i) "The contribution of the agricultural sector", and Coal, Copper, Iron Ore under section 3.1.4.2(a)(ii) "The contribution of the mining sector", will be examined in detail.

In 1981 only Wheat, Fruit, Beef, Wool under section 3.1.4.2(a)(i) "The contribution of the agricultural sector" and Gold, Diamonds, Coal under section 3.1.4.2(a)(ii) "The contribution of the mining sector" will be examined in detail.

(With permission of the Cape Education
Department)


DIRECTOR OF EDUCATION

VOORGESTELDE WYSIGINGS VAN DIE KERNSILLABUSSE VIR
AARDRYKSKUNDE - STS. 5 - 10

STANDERD 5.

Bladsy	PARAGRAAF NO. VAN BESTAANDE KERNSILLABUS	WYSIGING	NUWE PAR. NO
p.1.	1.	Onveranderd	2.
	1.1	Onveranderd	2.1
	1.2	Onveranderd	2.2
	2.	Onveranderd	3.
	2.1	Die ligging van die belang- rikste bergreekse, riviere en vlaktes van elke konti- nent.	3.1
	2.2	Die belangrikste lande of state met hulle vernaamste stede (klem op atlaswerk en nie op memorisering nie).	3.2
	2.3	'n Eenvoudige begrip van terme soos byvoorbeeld: die Weste, die Ooste, die Midde- Ooste, die Verre-Ooste, die Ou Wêreld, die Nuwe Wêreld, ens.	3.3
	-	Die wêreld (aardbol) as geheel, rigting-, afstand en oppervlakteverhoudings tussen kontinente en state.	3.4
	3.	Onveranderd	4.
	4.	Onveranderd	5.
	4.1	Onveranderd	5.1
	4.1.1	Groot Brittanje en Neder- land - elk ten opsigte van die volgende:	5.1.1
	4.1.1.1	Onveranderd	5.1.1.1
	4.1.1.2	Strukture	5.1.1.2
	-	Klimaat	5.1.1.3
	-	Bevolking en stede Belangrikste menslike bedry- wighede byvoorbeeld landbou, veeteelt, bosbou (indien van toepassing), vissery, mynbou, fabrieke, verkeer.	5.1.1.4

p.2.	4.1.1.3	Skakels met Suid-Afrika	5.1.1.6
	4.1.2	'n Reis langs die Ryn (verpligtend)	5.1.2
	4.2	Onveranderd	5.2
	4.3	Onveranderd	5.3
	4.4	Onveranderd	5.4
	4.4.1	Boerdery en vissery in Japan	5.4.1
	4.4.2	Geskrap	-
	4.5	Onveranderd	5.5
	5.	Onveranderd	6.
	5.1	Die digbevolkte lande: Die lande van die Weste	6.1 6.1.1
	5.2	Die lande van die Ooste, veral China	6.1.2
	5.3	Die lande met verspreide nedersettings	6.2
	5.4	Lande met 'n nomadiese bevolking	6.3
	7.	Selfstandige Studietemas	1.
	7.1-7.6	Kort studietemas moet selfstandig deur die loop van die jaar gedoen word op die werk wat in die sillabus voorkom soos byvoorbeeld die Suezkanaal, lugvervoer, Trans-Siberiese spoorlyn, telekommunikasies, die Amasonerivier, ens.	1.1
	6.	Aandag moet gegee word aan AKTUELE SAKE om sodoende die leerlinge se vermoë te ontwikkel om aardrykskundige toestande wat hierdie sake beïnvloed het akkuraat voor te stel.	1.2

STANDERD 6.

Bladsy	PARAGRAAF NO. VAN BESTAANDE KERNSILLABUS	WYSIGING	NUWE PAR NO
p.4.	1.	Geskrap	-
	2.	KAARTWERK	2.
		'n Studie van die basiese kenmerke van 'n kaart, gebruik die 1:50 000 Suid-Afrikaanse topografiese kaartvel van u tuisgebied (of naaste bekombare gebied). Die basiese konsepte van die volgende aspekte moet voorgestel word en moet die agtergrond vorm waarop in die volgende jare voortgebou kan word.	
	2.1	Onveranderd	2.1
	2.2	Onveranderd	2.2
	2.3	Konvensionele tekens (alleenlik die belangrikstes) wat kulturele verskynsels voorstel soos aangedui op die 1:50 000 topografiese kaartvel van u tuisgebied. (Klem moet val op die gebruik en nie die memorisering van die sleutel nie).	
	2.4	Hoogtevoorstelling bo seëspieël deur middel van kontoerlyne. ('n Studie van individuele landvorme is nie nodig nie).	2.4
	2.5	Onveranderd	2.5
	-	FOTO'S	3.
		Die verwantskap tussen ordnêre foto's en skuinslugfoto's - die herkenning van alledaagse voorwerpe op sulke foto's	
p.5.	3.	Onveranderd	4.
	3.1	Onveranderd	4.1
	3.1.1	Die begrip van die Heelal en van die sterrekonstellasies, kennisname van die uitgestrektheid daarvan; die plek van die Sonnestelsel in die Melkweg en die aarde se posisie in die Sonnestelsel.	4.1.1

3.1.2 en	Die sonnestelsel in breë trek-	4.1.2
3.1.3	ke - kennisname van die verskil-	
	lende lande van die Sonnestelsel	
	en die feit dat die aarde een van	
	die planete is.	
-	Die Maan - sy grootte en posi-	4.1.3
	sie in verhouding tot die aarde.	
3.2	Onveranderd	4.2
3.2.1	Onveranderd	4.2.1
3.2.2	Onveranderd	4.2.2
3.2.2.1	Aswenteling en belangrikste ge-	4.2.2.1
	volge soos dag en nag; tydsver-	
	skille (slegs begrip).	
3.2.2.2	Verander slegs die deel tussen	4.2.2.2
	hakies:	
	(seisoene, lengte van dag en nag	
	(berekenings nie nodig nie) dag-	
	en nageweninge en sonstilstande).	
3.2.3	Onveranderd	4.2.3
3.2.3.1	Verhouding tussen lengtegraad	4.2.3.1
	en tyd met eenvoudige berekeninge.	
3.2.3.2	Hooftydsones van Noord-Amerika,	4.2.3.2
	Suid-Afrika, Europa en Australië.	
-	Die Maan (kortliks)	4.3
-	Skyngestaltes van die Maan	4.3.1
-	Maansverduistering	4.3.2
-	Basiese oorsake en belangrikheid	4.3.3
	van getye.	
4.	KLIMATOLOGIE (Elementêr)	5.
4.1	Onveranderd	5.1
4.2	Temperatuur en sommige van die	5.2
	faktore wat dit beïnvloed byvoor-	
	beeld breedteligging, hoogte, see-	
	strome, afstand vanaf die see,	
	winde.	
4.3	Onveranderd	5.3
4.3.1	Sommige faktore wat lugdruk beïn-	
	vloed: temperatuur, hoogte bo	
	seevlak.	
4.3.2	Voorkoms van hoog- en laagdruk-	5.3.2
	sisteme en hul gepaardgaande wind-	
	bewegings (regs om en links om	
	bewegings). Hierdie afdeling moet	
	verband hou met die sinoptiese	
	weerkaarte.	

	4.3.3	Geskrap	-
p.6.	4.4	Onveranderd	5.4
	4.4.1	Kondensasie as 'n proses- cirrus-, stratus- en cumulus- wolke	5.4.1
	4.4.2	Onveranderd	5.4.2
	4.4.3	Geskrap	-
	4.4.4	Geskrap	-
	4.5	Onveranderd	5.5
	4.5.1	Die byhou van weervervalae deur praktiese waarneming en meting van temperatuur, lugdruk, reënval, wolktipes, bewolktheid en wind- rigting, deur die loop van die jaar. (Ingewikkelde instrumente en berekenings is nie nodig nie).	5.5.1
	4.5.2	Onveranderd	5.5.2
	4.5.3	Onveranderd	5.5.3
	4.5.4	'n Elementêre inleiding tot si- noptiese weerkaarte (temperatuur, wolkdekking tipe neerslag, hoog- druk- en laagdrukselle, windrig- ting en spoed en 'n kennisname van fronte - geen tegniese verklarings nie).	5.5.4
	-	Gebruik van eenvoudige tegnieke van grafiese voorstellings by- voorbeeld sirkels, kolomme, reg- hoeke, ens. (Hulle moet gebruik word oral waar hulle van toe- passing is).	5.5.5
	5.	Geskrap	-
	5.1 tot 5.6	Geskrap	-
p.7.	6.	Suid-Afrika (Suidwes-Afrika- Namibië vir Suidwes-Afrika- Namibië)	6.
	6.1	Geskrap	-
	6.1.1	Onveranderd	6.1
	6.1.2	Onveranderd	6.2
	6.1.3	Klimaatstreke	6.3
	6.1.3.1	Van Suid-Afrika	6.3.1

6.1.3.2	Ligging van soortgelyke streke in ander dele van die wêreld.	6.3.2
6.1.4	Kaart van die natuurlike plantegroei-streke	6.4
-	Van Suid-Afrika	6.4.1
-	Ligging van soortgelyke streke in ander dele van die wêreld. (Verwantskap tussen plante en klimaat moet in hierdie afdeling beklemtoon word).	6.4.2
6.1.5	Onveranderd	6.5
6.1.6	Onveranderd	6.6
6.1.7	'n Geografiese studie van minstens TWEE van die volgende, waarvan EEN die tuisgebied is:	6.7
p.8. 6.1.7.1 tot 6.1.7.9	Onveranderd	6.7.1 tot 6.7.9
-	Suidwes-Afrika (enige streek)	6.7.10
6.1.7.10	Swart Nasionale State (of enige onafhanklike staat wat eers 'n Swart Nasionale Staat was).	6.7.11
6.2	Geskrap	-
7.	Suidelike kontinente	7.
7.1	Onveranderd	7.1
7.1.1.1 tot 7.1.1.3	Onveranderd	7.1.1 tot 7.1.3
7.2	Australië en Nieu-Seeeland 'n Studie van minstens Een van die volgende:	7.2
7.2.1.2	Suidwes-Australië	7.2.1
7.2.1.3	Suidoos-Australië	7.2.2
8.	Selfstandige studietemas Kort studietemas moet selfstandig deur die loop van die jaar gedoen word op die werk wat in die sillabus voorkom soos byvoorbeeld lede van die sonnestelsel, weervoorspellings, 'n tweede regionale studie, skyngestaltes van die maan, wolktipes, ens.	1.
9.	Aandag moet gegee word aan AKTUELE SAKE om sodoende die leerlinge se vermoë te ontwikkel om aardrykskundige toestande wat hierdie sake beïnvloed het akkuraat voor te stel.	1.2

p.9.	1.	Onveranderd	2.
	1.1	Voortsetting van skuinsfoto's met 'n inleiding tot vertikale lugfoto's en 'n eenvoudige vertolking van 1:50 000 Suid-Afrikaanse topografiese kaartvelle.	2.1
	1.2	Geskrap	-
	1.3	Verslae van praktiese veldwerk. Hierdie deel behoort behandel te word saam met Afdeling 5, Nedsittingsaardrykskunde en met Afdeling 3, Geomorfologie.	2.2
	1.4	Geskrap	-
	1.4.1 tot 1.4.3	Geskrap	-
	2.	Geskrap	-
	2.1 tot 2.3	Geskrap	-
	3.	Geomorfologie (Suid-Afrikaanse voorbeelde moet waar moontlik gebruik word)	3.
	3.1	Basiese struktuur van die aarde (elementêr)	3.1
	3.2	Hoof landvorme van die aarde - Berge, valleie, vlaktes, plato's	3.2
	3.3	Faktore wat landvorme beïnvloed (Verandering met verloop van tyd moet beklemtoon word)	3.3
		Interne kragte	3.3.1
		Eksterne kragte	3.3.2
	4.	Streekaardrykskunde 'n Geografiese studie van elkeen van die volgende Hoof Natuurstreke. (EEN van die streke soos aangedui onder elk van die streke moet gekies word om as 'n gevalstudie behandel te word).	4.
p.10.	4.1 tot 4.4	Tropiese reënwoude Nigerië (Suid) of Zaire	4.1
		Moesonstreek INDUS OF GANGES	4.2
		Koel gematigde weskusstreek Verenigde Koninkryk of Paryskom	4.3
		Naaldwoudstreek Kanada of Swede	4.4

p. 11.	5.	Geskrap	-
	5.1 tot 5.4	Geskrap	-
p. 12	6.	Onveranderd	5.
	-	Die verskil tussen plattelandse en stedelike gebiede	5.1
	6.2.1	Redes vir die ontwikkeling van stedelike gebiede en die ontvol- king van die platteland.	5.2
	6.1	Plattelandse nedersettings	5.3
		Die konsep van plattelandse nedersettings (Slegs hoofkenmerke)	5.3.1
	6.1.1 tot 6.1.10	Kern Verspreid ('n Gevalstudie van 'n spesifieke plaas kan gebruik word om die hoof- kenmerke te verduidelik, byvoorbeeld 'n skaapplaas (verspreid) of gekon- sentreerde kleinhoewes (kern) Funksies van 'n plattelandse ne- dersetting. Grondgebruik by 'n plattelandse nedersetting.	5.3.1.1 5.3.1.2
	6.2	Stedelike nedersettings	5.4
	6.2.2	Die konsep van 'n stedelike ne- dersetting (Slegs hoofkenmerke)	5.4.1
		Grondgebruik by stedelike neder- settings	5.4.2
	6.2.2.2	Sentrale sakegebied	5.4.2.1
	6.2.2.1	Woongebiede	5.4.2.2
	6.2.2.3	Nywerheidsgebiede	5.4.2.3
	6.2.3	Funksies van stedelike neder- settings	5.4.3
p. 13.	6.2.3.1	Onveranderd	5.4.3.1
	6.2.3.2	Onveranderd	5.4.3.2
	6.2.3.3	Onveranderd	5.4.3.3
	6.2.3.4	Onveranderd	5.4.3.4
	6.2.4	Onveranderd	5.4.4
	7.	Selfstandige studietemas	1.
		Kort studietemas moet selfstandig deur die loop van die jaar gedoen word op die werk wat in die sil- labus voorkom byvoorbeeld vulka- nisme, aardbewings, dele van die streekstudies, paslike veldwerk- verslae, ens.	1.1

3. Aandag moet gegee word aan AKTUELE 1.2
SAKE om sodoende die leerlinge se
vermoë te ontwikkel om aardrykskun-
dige toestande wat hierdie sake
beïnvloed het akkuraat voor te stel.
Die begrippe "omgewingsbewaring" en
"omgewingsbewustheid" behoort aandag
te geniet.

KERNSILLABUSSE VIR AARDRYKSKUNDE STANDERD 8 - HOËR GRAAD

Bladsy	PAR. NO. VAN BESTAANDE SILLABUS	WYSIGING	PAR. NO. VAN KON
p. 1.	0.	Onveranderd	2.
	0.1	Die lees en ontleding van kaarte	2.1
	-	Algemene agtergrond	2.1.1
	-	1:50 000 topografiese kaarte van Suid-Afrika	2.1.2
	0.2	Lees en ontleding van foto's	2.2
	-	Algemene agtergrond	2.2.1
	-	Die gebruike van die skuins- foto en vertikale lugfoto (insluitend die randgewens)	2.2.2
	0.3	Onveranderd	2.3
	-	Veldwerk net vir waarneming van fisiese (insluitend geo- logiese) en kulturele kenmerke	2.3.1
	-	Veldwerk vir bepaalde opme- tings en kaarttekenwerk	2.3.2
	-	Die gebruik van die kompas in die veld.	2.3.3
	-	Die samestelling van 'n veld- werkboek	2.3.4
	-	Praktiese werk: Veldwerk- oefening	2.3.5
	0.4	Onveranderd	2.4
		Integreer hierdie afdeling se werk by al die afdelings van die sillabus waar dit van toepassing is	
	-	Doel gebruik en waarde	2.4.1
	-	Diagrammatiese voorstelling van temperatuur, reëval, be- volking, ens. deur middel van krommes, kolomme, reghoek, sir- kelsektors, stippels, kleur, beelddiagramme, isolyne, ens.	2.4.2
	1.	Onveranderd	3.
	1.1	Onveranderd	3.1
	1.1.1	Geskrap	-
	1.1.2	Die atmosfeer	3.1.1
	-	Samestelling	3.1.1.1
	-	Struktuur (atmosferiese lae)	3.1.1.2

1.1.3	Temperatuur	3.1.2
	In die onderrig van die volgende afdelings (temperatuur en neerslag) moet die praktiese gebruik van sinoptiese weerkaarte, toepaslike metinginstrumente (soos termometers, reënmeter, ens.) en oefeninge soos die intrek van isolyne, beklemtoon word.	
(i)	Atmosferiese temperatuur - insolasie, radiasie, geleiding, konveksie.	3.1.2.1
(ii)	Faktore wat horisontale variasie in temperatuur beïnvloed: Breedteligging, land- en waterverspreiding, reliëf, winde, seestrome, kleur van grond, bewolktheid, reënval.	3.1.2.2
(iii)	Vertikale temperatuurwisseling (vertikale afname in temperatuur, temperatuurinversie en lugdreining; invloed van vertikale luginbeweging).	3.1.2.3
1.1.4	Vog in die atmosfeer	3.1.3
-	Verband tussen temperatuur en vogtigheid	3.1.3.1
(i)	Werklike en betreklike vogtigheid (definisie)	3.1.3.2
-	Doupunttemperatuur (definisie)	3.1.3.3
(ii)	Onveranderd	3.1.3.4
1.1.5	Neerslag: reën, hael, sneeu, dou en ryp (Praktiese waarneming van elk en wanneer moontlik).	3.1.3.5
1.1.6	Geskrap	-
n.2. 1.2	Onveranderd	3.2
1.2.1	Eksterne kragte (verwering en erosie) - Hersiening	3.2.1
1.2.2 tot 1.2.6	Geskrap en vervang deur:	-
-	Stroomwerking: stroomwerkingsprosesse en landvorme kenmerkend van stroomerosie en -afsetting.	3.2.2
-	Oplossingsprosesse en landvorme wat daaruit ontstaan (Karstgeomorfologie)	3.2.3
-	Seewerking en landvorme wat daaruit ontstaan, kustipes en hul betekenis.	3.2.4

-		Gletsjerwerking en landvorme wat daaruit ontstaan.	
		of	
		Windwerking en landvorme wat daaruit ontstaan.	
2.		Onveranderd	4.
2.1		Bevolkingsaardrykskunde ('n oorsigtelike studie).	4.1
2.1.2		Die voorstelling van bevolkingskenmerke soos geboorte- en sterftesyfers, ouderdoms- en geslagstrukture, stedelike en plattelandse verhoudings en verspreidingspatrone moet waar van toepassing, aandag geniet. (Berekeninge word nie vereis nie).	
2.1.1		Faktore wat die verspreiding en digtheid van bevolking beïnvloed.	4.1.1
	(a)	Ekumene gebiede (digbevolk)	4.1.1.1
	(b)	Nie-ekumene gebiede (ylbevolk)	4.1.1.2
2.1.3		Bevolkingsbewegings Kennisname van faktore wat bevolkingsbewegings laat ontstaan, byvoorbeeld ontvolking van die platteland, immigrasie en emigrasie, trekarbeid, vlugtelinge, ens.	
p.3.	2.1.4 en 2.1.5	Die bevolkingsontploffing	4.1.3
-		Faktore wat die vinnige groei van die wêreldbevolking sedert die Industriële Revolusie beïnvloed het: verbeterde boerdrytegnieke en versekerde voedselvoorrade, verbeterde gesondheid, 'n krimpende kindsterftesyfer, stygende lewensverwagting (sluit demografiese oorgang in)	4.1.3.1
-		Verwante probleme en moontlike oplossings: voedselvoorrade (die "groenrevolusie" wat volg op die gebruik van bastersade en nuwe metodes van voedselproduksie) lewensruimte, die vernietiging van beperkte natuurlike hulpbronne, die verwydering van afvalstowwe.	4.1.3.2
2.1.6		Geskrap	-

3. Onveranderd 5.
- 3.1 'n Vergelykende studie van tegnologies ontwikkelde en tegnologies ontwikkelende lande met spesiale verwysing na die bevolkingsprobleme.
- Hierdie studie moet:
- klem lê op die kenmerke van sulke lande (i)
 - gebaseer word op die vergelyking van verskeie lande of streke om sodoende 'n globale indruk te kry (ii)
 - die konsepte van uniforme (homogene) en nodale (funksionele) streke ontwikkel. (iii)
- 3.2 Inleiding 1.
- Kaartwerk 1.1
 - Waar moontlik moet kaart- en foto-ontleding van spesifieke gebiede van die 1:50 000 topografiese kaartvelle van Suid-Afrika geïntegreer word by verwante dele van die sillabus.
 - Aanvullende werk 1.2
 - Twee kort individuele take moet onderneem word gebaseer op werk wat verband hou met die voorskrifte van die sillabus. 1.2.1
 - Goedbeplande en doelgerigte veldwerk moet waar moontlik onderneem word. 1.2.2

STANDERD 8 - STANDAARDGRAAD

BLADSY	PARAGRAAF NO.	WYSIGING	NUWE PAR.NO
VAN BESTAANDE			
KERNSILLABUS			
p. 1	0.	Onveranderd	2.
	0.1	Die lees en ontleding van kaarte	2.1
		- Algemene agtergrond	2.1.1
		- 1:50 000 topografiese kaarte van Afrika	2.1.2
	0.2	Lees en ontleding van foto's	2.2
		- Algemene agtergrond	2.2.1
		- Die gebruik van die skuinsfoto en vertikale lugfoto (insluitend die randgegewens)	2.2.2
	0.3	Onveranderd	2.3
		- Veldwerk net vir waarneming van fisiese (insluitend geologiese) en kulturele kenmerke.	2.3.1
		- Veldwerk vir bepaalde opmetings en kaarttekenwerk	2.3.2
		- Die gebruik van die kompas in die veld	2.3.3
		- Die samestelling van 'n veldwerkboek	2.3.4
		- Praktiese werk: Veldwerkkoefening	2.3.5
	0.4	Onveranderd	2.4
		Integreer hierdie afdeling se werk by al die afdelings van die sillabus waar dit van toepassing is.	
		- Doel, gebruik en waarde	2.4.1
		- Diagrammatiese voorstelling van temperatuur, reënval, bevolking, ens. deur middel van krommes, kolomme, reghoek, sirkelsektors, stippels, kleur, beelddiagramme, isolyne, ens.	2.4.2
	1.	Onveranderd	3.
	1.1	Klimaatkunde	3.1
	1.1.1	Geskrap	-

1.1.2	Die atmosfeer	3.1.1
	- Samestelling	3.1.1.1
	- Struktuur (atmosferiese lae)	3.1.1.2
1.1.3	Temperatuur	3.1.2
	In die onderrig van die volgende afdelings (temperatuur en neerslag) moet die praktiese gebruik van sinoptiese weerkaarte, toepaslike metingsinstrumente (soos termometers, reënmeteers, ens.) en oefeninge soos die intrek van isolyne, beklemtoon word.	
(i)	Atmosferiese temperatuur - insolasie, radiasie, geleiding, konveksie.	3.1.2.1
(ii)	Faktore wat horisontale variasie in temperatuur beïnvloed: Breedtegraadligging, land- en waterverspreiding, reliëf, winde, seestrome, kleur van grond, bewolktheid, reënval.	3.1.2.2
(iii)	Vertikale temperatuurwisseling (vertikale afname in temperatuur, temperatuurinversie en lugdreinerings; invloed van vertikale lugbeweging).	3.1.2.3
1.1.4	Vog in die atmosfeer	3.1.3
	- Verband tussen temperatuur en vogtigheid	3.1.3.1
(i)	Werklike en betreklike vogtigheid (definisie)	3.1.3.2
	- Doupunttemperatuur (definisie)	
(ii)	'n Eenvoudige wolkklassifikasie en uitkenning (cirrusvormig, stratusvormig, cumulusvormig en hul onderskeie tipes)	3.1.3.4
1.1.5	Neerslag: reën, hael, sneeu, dou en ryp. (praktiese waarneming van elk en wanneer moontlik)	3.1.3.5
1.1.6	Geskrap	-
p.2.		
1.2	Onveranderd	3.2
1.2.1	Eksterne kragte (verwering en erosie)- Hersiening	3.2.1
1.2.2	Geskrap en vervang deur:	
tot		
1.2.6	- Stroomwerking: stroomwerkingsprosesse en landvorme kenmerkend van stroomerosie en -afsetting	3.2.2
	- Oplossingsprosesse en landvorme wat daaruit ontstaan (Karst-geomorfologie)	3.2.3

- Seewerking en landvorme wat daaruit ontstaan, kustipes en hul betekenis 3.2.4
 - Gletserwerking en landvorme wat daaruit ontstaan of Windwerking en landvorme wat daaruit ontstaan. 3.2.5
2. Onveranderd 4.
- 2.1 Bevolkingsaardrykskunde ('n oorsigtelike studie) 4.1
Die voorstelling van bevolkingskenmerke soos geboorte- en sterftesyfers, ouderdoms- en geslagstrukture, stedelike en plattelandse verhoudings en verspreidingspatrone moet waar van toepassing, aandag geniet. (Berekeninge word nie vereis nie).
- 2.1.1 Faktore wat die verspreiding en digtheid van die bevolking beïnvloed 4.1.1
- (a) Ekumene gebiede (digbevolk) 4.1.1.1
 - (b) Nie-ekumene gebiede (ylbevolk) 4.1.1.2
- 2.1.2 Bevolkingsbewegings 4.1.2
Kennisname van faktore wat bevolkingsbewegings laat ontstaan, byvoorbeeld ontvolking van die platteland, immigrasie en emigrasie, trekarbeid, vlugtelinge, ens.
- 2.1.3 Bevolkingsontploffing 4.1.3
- (a) Faktore wat die vinnige groei van die wêreldbevolking sedert die Industriële revolusie beïnvloed het: verbeterde boerderytegnieke en verskerde voedselvoorrade, verbeterde gesondheid, 'n krimpende kindersterftesyfer, stygende lewensverwagting (sluit demografiese oorgang in). 4.1.3.1
 - (b) Verwante probleme en moontlike oplossings: Voedselvoorrade (die "groenrewolusie" wat volg op die gebruik van bastersade en nuwe metode; van voedselproduksie) lewensruimte, die vernietiging van beperkte natuurlike hulpbronne, die verwydering van afvalstowwe. 4.1.3.2
- 2.1.4 Geskrap -
- p.3. 3. Onveranderd 5.
- 3.1 'n Vergelykende studie van tegnologies ontwikkelde en tegnologies ontwikkelende lande met spesiale verwysing na die bevolkingsprobleme. Hierdie studie moet:

- klem lê op die kenmerke van sulke lande (i)
- gebaseer word op die vergelyking van verskeie lande of streke om sodoende 'n globale indruk te kry (ii)
- die konsepte van uniforme (homogene) en nodale (funksionele) streke ontwikkel (iii)

- 3.2 Inleiding 1.
- Kaartwerk 1.1
Waar moontlik moet kaart- en foto-ontleding van spesifieke gebiede van die 1:50 000 topografiese kaartvelle van Suid-Afrika geïntegreer word by verwante dele van die sillabus.
 - Aanvullende werk 1.2
 - EEN kort individuele taak moet onderneem word gebaseer op die werk wat verband hou met die voorskrifte van die sillabus. 1.2.1
 - Goedbeplande en doelgerigte veldwerk moet waar moontlik onderneem word. 1.2.2

STANDERD 9. STANDAARDGRAAD

BLADSY	PARAGRAAF NO. VAN BESTAANDE KERNSILLABUS	WYSIGING	NUWE PAR. NO
p.4.	1.	Fisiese aardrykskunde	2.
	1.1	Klimaatkunde In die onderrig van afdelings 2.1.1 en 2.1.2 moet die praktiese gebruik van sinoptiese weerkaarte, paslike metinginstrumente (soos barometers, anemometers, ens.) en oefeninge soos die intrek van isolyne, beklemtoon word.	2.1
	1.1.1	Atmosferiese druk: definisie en voorstelling van isobare op gemiddelde seevlak en kontoere van konstante drukoppervlaktes (byvoorbeeld die 850 mb drukoppervlakte op die sinoptiese weerkaarte), drukgraadiente.	2.1.1
	1.1.2	Onveranderd	2.1.2
	1.1.3	Algemene sirkulasie van die atmosfeer (Alleenlik die algemene patrone en nie die prosesse nie)	2.1.3
	(i)	Primêre sirkulasie: Meridionale (N-S) deursnit (die drieseirangskikking - Hadley-, Ferrel- en Poolsele), subtropiese en polêre hoogdrucke, polêre front, I.T.K.S. (Intertropiese konvergensiesone).	2.1.3.1
	(ii)	Sekondêre sirkulasie: - Laagdrucke (depressies) - Tropiese oostewinde - Moezons	2.1.3.2 (i) (ii) (iii)
	(iii)	Tersiêre sirkulasies: - Land- en seebries - Plaaslike winde: Chinook, Föhn Bergwind en Mistral.	2.1.3.3 (i) (ii)
	1.1.4	Weerprosesse	2.1.4
	(i)	Oorsake van styging: konvergensietipes, met ander woorde direkte (kop aan kop) en indirekte (skuins) ontmoeting van lugmassas, wrywing, helling (reliëf), frontaal en konveksie.	2.1.4.1
	(ii)	Termiese stabiliteit en onstabiliiteit (soos dit in verband staan met vertikale luginbeweging) - slegs definisies.	2.1.4.2

(iii)	Eenvoudige verduideliking van neerslag (verwys na onstabiliteit)	2.1.4.3
1.1.5	Geskrap	-
1.2	) Geskrap	-
1.2.1 tot		
1.2.2		
1.3	Geomorfologie Aandag moet gegee word aan die herkenning van eenvoudige gesteentetipes, teken en interpretasie van deursnitte en die gebruik en interpretasie van topografiese kaarte en lugfoto's. Goedbeplande en doelgerigte veldwerk moet onderneem word.	2.2
1.3.1 tot 1.3.5	Geskrap en vervang deur die volgende:-	
	- Struktuur van die aarde	2.2.1
	- Die aardkors: samestelling en struktuur (sial, sima, moho)	2.2.2
	- Gesteentetipes: oorsprong, kenmerke en betekenis van stollings-, sedimentêre en metamorfiese tipes met voorbeelde.	2.2.3
	- Interne kragte en landvorme wat daaruit volg:	2.2.4
	- Isostasie	(i)
	- Kontinentdrywing en plaattektonika	(ii)
	- Kromming, verskuiwing en plooiing	(iii)
	- Aardbewings	(iv)
	- Vulkanisme	(v)
p.5 2.	Onveranderd	3.
2.1	Onveranderd	3.1
2.1.1	Onveranderd	3.1.1
2.1.2	Onveranderd	3.1.2
(a)	Onveranderd	3.1.2.1
(i)	die basiese tipes: akkerbou (droë-landverbouing, besproeiing, tuinbou, plantasiebou, ens.), veeboerdery (ekstensief, suiwel, gemengde boerdery, ens.)	(i)
(ii)	'n Studie van die Suid-Afrikaanse produksie van ten minste EEN van mielies, koring, suiker, vrugte, vleisbeeste, suiwel of wolproduksie gesien in verhouding tot die wêreldopbrengs.	(ii)

(b)	Mynbou	3.1.2.2
	- Die basiese ekonomie van ontginning	(i)
	- 'n Studie van die Suid-Afrikaanse produksie van minstens EEN van goud, diamante, steenkool, ystererts, koper gesien in verhouding tot die wêreld-opbrengs. (In hierdie afdeling moet aandag gegee word aan die belangrikheid van sekere geologiese sisteme).	(ii)
2.1.3	Onveranderd	3.1.3
(a)	Onveranderd	3.1.3.1
(b)	Faktore wat die plasing van nywerhede begunstig:	3.1.3.2
	- In die algemeen.	(a)
	- Spesifiek toegepas op 'n studie van een van die Suid-Afrikaanse swaar-nywerheidsoorte.	(b)
2.1.4	Tersiêre aktiwiteite	3.1.4
	- Diensnywerhede, elektrisiteit, vervoer en handel.	3.1.4.1
	- Vervoer en elektrisiteit in Suid-Afrika.	3.1.4.2
	- Ekonomiese ontwikkeling	3.1.5
	- Die begrip van stadiums van ekonomiese ontwikkeling. (Dit kan aan die hand van modelle van ekonomiese ontwikkeling gedoen word).	3.1.5.1
	- 'n Toepassing van die konsep op Suid-Afrika.	3.1.5.2
3.	Streekaardrykskunde	4.
3.1	'n Vergelykende studie van tegnologies ontwikkelde en tegnologies ontwikkelende lande met spesiale verwysing na hulle ekonomiese ontwikkeling.	
	Hierdie studies moet:	
	- klem lê op die kenmerke van sulke lande	(i)
	- gebaseer word op die vergelyking van verskeie lande of streke om sodoende 'n globale indruk te kry.	(ii)
	- die konsepte van uniforme (homogene) en nodale (funksionele streke ontwikkel.	(iii)
p.6 3.2	Inleiding	1.
-	Kaartwerk	1.1
	Waar moontlik moet kaart- en foto-ontleding en vertolking van spesifieke streke	

waarvan die 1:50 000 topografiese kaartvulle van Suid-Afrika beskikbaar is, geïntegreer word by toepaslike dele van die sillabus.

- Kwantitatiewe tegnieke 1.2
Kwantitatiewe tegnieke soos gemiddeldes, afwykings, eenvoudige korrelasies, strooidiagramme, regressielyne en waarskynlikheid moet waar geskik en van toepassing, gebruik word. Om te verstaan wat die verskillende tegnieke weerspieël moet beklemtoon word. Berekeninge en konstruksies word nie gevra nie.
- Aanvullende werk 1.3
- EEN kort individuele taak moet onderneem word, gebaseer op die werk wat verband hou met die voorskrifte van die sillabus. 1.3.1
- Goedbeplande en doelgerigte veldwerk moet waar moontlik onderneem word. 1.3.2

STANDERD 9 - HOËR GRAAD

BLADSY	PARAGRAAF NO. VAN BESTAANDE KERNSILLABUS	WYSIGING	NUWE PAR. NO
p.4	1.	Fisiese aardrykskunde	2.
	1.1	Klimaatkunde In die onderrig van afdelings 2.1.1 en 2.1.2 moet die praktiese gebruik van sinoptiese weerkaarte, paslike meetinstrumente (soos barometers, anemometers, ens.) en oefeninge soos die intrek van isolyne, beklemtoon word.	2.1
	1.1.1	Atmosferiese druk: definisie en voorstelling van isobare op gemiddelde seevlak en kontoere van konstante drukoppervlaktes (byvoorbeeld die 850 mb drukoppervlakte op die sinoptiese weerkaarte), drukgradiënte.	2.1.1
	1.1.2	Verband tussen lugdruk en wind en geostrofiese vloei (die lug vloei feitlik parallel aan die isobare).	2.1.2
	1.1.3	Algemene sirkulasie van die atmosfeer (Alleenlik die algemene patrone en nie die prosesse nie).	2.1.3
	(i)	Primêre sirkulasie: Meridionale (N-S) deursnit (die drieselrangskikking - Hadley- Ferrel- en Poolsele) subtropiese en polêre hoogdrukke, polêre front, I.T.K.S. (Intertropiese konvergensiesone).	2.1.2.3
	(ii)	Sekondêre sirkulasie:	2.1.3.2
	-	Laagdrukke (depressies) en golfbeweging in die westewindgordel.	(i)
	-	Tropiese oostewinde en gepaardgaande golfbewegings	(ii)
	-	Moesons	(iii)
	-	Ekwatoriaal-Afrika (I.T.K.S. - sy bewegings en donderstorms)	(iv)
	(iii)	Tersiêre sirkulasie:	2.1.3.3
	-	Land- en seebries	(i)
	-	Plaaslike winde: Chinook, Föhn, Bergwind en Mistral.	(ii)
	1.1.4	Weerprosesse	2.1.4

	(i)	Oorsake van styging: konvergensie- tipes, met ander woorde direkte (kop aan kop) en indirekte (skuins) ont- moeting van lugmassas, wrywing, helling (reliëf), frontaal en konveksie.	2.1.4.1
	(ii)	Termiese stabiliteit en onstabili- teit (soos dit in verband staan met vertikale luginbeweging); Droë en Nat Adiabatese Temperatuurver- valsyfers.	2.1.4.2
	(iii)	Onveranderd	2.1.4.3
	1.1.5	Geskrap	-
	1.2	Geskrap	-
	1.2.1-	Geskrap	-
	1.2.2		
	1.3	Geomorfologie Aandag moet gegee word aan die herkenning van eenvoudige gesteente- tipes, teken en interpretasie van deursnitte van topografiese kaarte en lugfoto's. Goedbeplande en doelgerigte veldwerk moet onderneem word.	2.2
	1.3.1	Geskrap en vervang deur die vol- tot	
p.5	1.3.5	Struktuur van die aarde	2.2.1
	-	Die aardkors: samestelling en struktuur (sial, sima, moho)	2.2.2
	-	Gesteentetipes: oorsprong, ken- merke en betekenis van stollings-, sedimentêre en metamorfiese tipes met voorbeelde.	2.2.3
	-	Interne kragte en landvorme wat daaruit volg:	2.2.4
		Isostasie (i)	
		Kontinentdrywing en plaattek- tonika (ii)	
		Kromming, verskuiwing en plooiing (iii)	
		Aardbewings (iv)	
		Vulkanisme (v)	
	2.	Onveranderd	3.
	2.1	Onveranderd	3.1
	2.1.1	Onveranderd	3.1.1
	2.1.2	Onveranderd	3.1.2
	(a)	Boerdery: kommersiële en bestaans. Moet insluit:	3.1.2.1

- (i) die basiese tipes: akkerbou (droë-landverbouing, besproeiing, tuinbou, plantasiebou, ens.) veeboerdery (ekstensief, suiwel, gemengde boerdery, ens.) (i)
- (ii) 'n Studie van die Suid-Afrikaanse produksie van ten minste EEN van mielies, koring, suiker, vrugte en EEN van vleisbeeste, suiwel of wolproduksie gesien in verhouding tot die wêreldopbrengs. (ii)
- Die probleem van die verspreiding van hiërargieë in die werklikheid waarin werklike verspreidings dikwels ernstig verdraai is in vergelyking met die model. (v)
- Demonstreer hierdie ten opsigte van Suid-Afrika.
- Grondgebruiksones 3.1.2.4
- Modelle van stedelike struktuur (konsentriese, sektor en veelvuldige kerne). 3.1.2.5
- Stedelike morfologie 3.1.2.6
- Stedelike probleme en moontlike oplossings 3.1.2.7
- 2.1.3 Geskrap -
- p.9 3. Streekaardrykskunde 4.
- Die begrippe van ekosisteme en omgewingsewewig behoort in hierdie afdeling aandag te geniet.
- 3.1 Die Republiek van Suid-Afrika en die Swart State binne sy grense uitgesonderd Lesotho. 4.1
- 3.1.1 en 3.1.2 Die probleem van reënval en waterhulpbronne. 4.1.1
- Die probleem van gronde en die gebruik daarvan. 4.1.2
- Die probleem van temperatuur, plaes en siektes. 4.1.3
- Die probleem van reliëf en kommunikasies. 4.1.4
- Die probleem van omgewingsvernietiging en besoedeling. 4.1.5

3.1.3	Die verskeidenheid mense in Suid-Afrika.	4.1.6
	(a) Bevolking: digtheid en verspreiding, samestelling, groei en beweging (insluitend landelike ontvolking).	4.1.6.1
	(b) Swart Gebiede (onafhanklike en Nasionale State).	4.1.6.2
3.1.4	Die Suid-Afrikaanse Ekonomie.	4.1.7
3.1.4.1	Definisie van Bruto Binnelandse Produk (die waarde van alle finale goedere en dienste binne die landsgrense geproduseer in die bestek van 'n finansiële jaar).	4.1.7.1
3.1.4.2	Bydrae tot die Suid-Afrikaanse ekonomie deur:	4.1.7.2
	(a) Primêre aktiwiteite (i)	
	Algemene agtergrond en ontwikkeling van boerdery en mynbou in Suid-Afrika met klem op die faktore wat hulle ontwikkeling begunstig of benadeel.	
	(b) Sekondêre aktiwiteite in die al-gemeen. In die behandeling hiervan moet 'n studie van die hoof nywerheidsstreke gemaak word. Die faktore wat die plasing en ontwikkeling van fabrieksnywerhede beïnvloed moet aandag geniet en aandag moet ook aan verstedeliking, probleme van nywerheidsdesentralisasie, grensnywerhede en nuwe groeipunte gegee word.	(ii)
	PWV-kompleks (Pretoria-Witwatersrand-Vereeniging en Sasolburg)	(a)
	Durban - Pinetown	(b)
	Suidwes-Kaapland	(c)
	Port Elizabeth - Uitenhage	(d)
p.10	(c) Tersiêre aktiwiteite in die al-gemeen	(iii)
-	Internasionale handel	(b)
3.1.5	Geskrap	-
3.2	Suidwes-Afrika-Namibië	4.2
	By die behandeling van hierdie afdeling moet slegs probleme wat betrekking het op die regionale ekonomiese ontwikkeling beklemtoon word.	
-	Inleiding	1.

4. Kaartwerk 1.1
 Waar moontlik moet kaart- en foto-ontleding en vertolking van spesifieke streke waarvan die 1:50 000 topografiese kaartvelle van Suid-Afrika beskikbaar is, geïntegreer word by die toepaslike dele van die sillabus.
- Kwantitatiewe tegnieke 1.2
 Kwantitatiewe tegnieke soos gemiddeldes, afwykings, eenvoudige korrelasies, strooidiagramme, regressielyne en waarskynlikheid moet waar geskik en van toepassing gebruik word. Om te verstaan wat die verskillende tegnieke weerspieël moet beklemtoon word. Berekeninge en konstruksies word nie gevra nie.
5. Aanvullende werk 1.3
- Twee kort navorsingstake wat verband hou met die werk soos voorgeskryf in die sillabus moet gedoen word. 1.3.1
- Goedbeplande en doelgerigte veldwerk moet waar moontlik gedoen word. 1.3.2

STANDERD 10 - STANDAARDGRAAD

BLADSY	PARAGRAAF NO. VAN BESTAANDE KERNSILLABUS	WYSIGING	NUWE PAR. NO.
p.7	1.	Onveranderd	2.
	1.1	Onveranderd	2.1
	1.1.1	'n Studie van atmosferiese modelle wat die groei, verval en weer van die volgende verduidelik: (i) Donderstorms (tornado's) (ii) Onveranderd (iii) Onveranderd	2.1.1 2.1.1.1 2.1.1.2 2.1.1.3
	1.1.2	Onveranderd	2.1.2
	(i)	Van streeksomvang (sekondêre sirkulasie)	2.1.2.1
	(a)	Suidelike Afrika (bewegende versteurings en die invloed van antisikloniese sirkulasie) (Sinoptiese kaart moet in hierdie afdeling gebruik word - verwante konsepte soos aangeleer in st. 8 en 9 moet ook toegepas word).	
	(ii)	Van plaaslike omvang (tersiêre sirkulasie). (Suid-Afrikaanse voorbeelde moet, waar moontlik, ingesluit word).	2.1.2.2
	(a)	Dalklimate (die invloed van rigting waarin hange front, verhitting en afkoeling, anabatiese en katabatiese vloei, temperatuurinversie, ryp en mis).	(i)
	(b)	Stedelike klimate (verskille tussen stad- en landelike omgewings, temperatuur- en uitstralingsverskille, kenmerke van stadsklimaat, toenemende mis, lugbesoedeling, neerslag, hitte-eilande).	(ii)
	1.1.3	Geskrap	-
	1.2	Onveranderd	2.2
	-	Verweringsprosesse	2.2.1
	1.2.1	Dreineerbekke, stroompatrone, (byvoorbeeld dendrities, tralie, reghoekig, ens.), stroomroef, stroomprofiel en kruisdalseksies.	2.2.2

	1.2.2	Onveranderd	2.2.3
	1.2.3	Onveranderd	2.2.4
	-	Die begrip van dinamiese ewewig	2.2.5
	1.2.4	Grond	2.2.6
	-	Konsep van 'n grondprofiel (struktuur, tekstuur, kleur, ens.)	2.2.6.1
	(i)	Grondvormende faktore (wissel- werking tussen moedermateriaal, klimaat, biologiese aktiwiteite, tyd en reliëf)	2.2.6.2
	-	'n Elementêre kennis van die beginsel waarvolgens die Suid-Afrikaanse grondsoorte geklassifiseer word volgens die Binomiale sisteem.	2.2.6.3
	(ii)	Geskrap	-
	1.2.5	Geskrap	-
p.8	2.	Onveranderd	3.
	2.1	Onveranderd	3.1
	2.1.1	Onveranderd	3.1.1
	(a)	Onveranderd	3.1.1.1
	(b)	Faktore wat die standplaas, ligging en vorm beïnvloed: kruispaaië, fonteinsones, deurgangspunte, ens.	3.1.1.2
	2.1.2	Onveranderd	3.1.2
	(a) - (e)	Geskrap en word deur die volgende vervang:	
	-	Die prosesse en eienskappe van ver- stedeliking in 'n vergelykende konteks (d.w.s. in verskillende gebiede van die wêreld).	3.1.2.1
	-	Faktore wat die standplaas, ligging en funksie beïnvloed.	3.1.2.2
	-	Verbreiding van stedelike sentra	3.1.2.3
	-	Definisie van sentrale plekke	(i)
	-	Invloedsfere	(ii)
	-	Die basiese begrippe wat die ver- skaffing van dienste vanaf stedelike sentra ondersteun - die begrippe van drempelbevolking en reikwydte en die definisie van hoë- en lae-ordediens.	(iii)

	Die groepering van dienste om hiërargieë te vorm, en die gevolglike ontstaan van verskillende ordes van stedelike sentra. Die moontlike identifisering van stedelike plekhiërargieë.	
-	Grondgebruiksone	3.1.2.4
-	Modelle van stedelike struktuur (konsentriese, sektor- en veelvuldige kerne)	3.1.2.5
-	Stedelike morfologie	3.1.2.6
-	Stedelike probleme en moontlike oplossings	3.1.2.7
2.1.3	Geskrap	-
3.	Streekardrykskunde Die begrippe van ekosisteme en omgewingsewewig behoort in die afdeling aandag te geniet.	4.
3.1	Die Republiek van Suid-Afrika en die Swart State binne sy grense uitgesonderd Lesotho	4.1
3.1.1 tot 3.1.2	Word deur die volgende vervang:	-
-	Die probleem van reënval en waterhulpbronne	4.1.1
-	Die probleem van gronde en die gebruik daarvan	4.1.2
-	Die probleem van temperatuur, plaë en siektes	4.1.3
-	Die probleem van reliëf en kommunikasies	4.1.4
-	Die probleem van omgewingsvernietiging en besoedeling	4.1.5
3.1.3	Die verskeidenheid mense in Suid-Afrika	4.1.6
	(a) Bevolking: digtheid en verbreiding, samestelling, groei en beweging (insluitend landelike ontvolking)	4.1.6.1
	(b) Swart Gebiede (Nasionale en onafhanklike state).	4.1.6.2
3.1.4	Die Suid-Afrikaanse Ekonomie	4.1.7
3.1.4.1	Definisie van Bruto Binnelandse Produk (die waarde van alle finale goedere en dienste binne die landsgrense geproduseer in die bestek van 'n finansiële jaar)	4.1.7.1

(a) Primêre aktiwiteite (i)
 Algemene agtergrond en ontwikkeling
 van boerdery en mynbou in Suid-Afrika
 met klem op die faktore wat hulle
 ontwikkeling begunstig.

(b) Sekondêre aktiwiteite in die al- (ii)
 gemeen
 In die behandeling hiervan moet
 'n studie van die hoofnywerheidstreke
 gemaak word. Die faktore wat die
 plasing en ontwikkeling van fa-
 brieksnwywerhede beïnvloed moet
 aandag geniet en aandag moet ook
 aan verstedeliking, probleme van
 nywerheidsentralisasie, grens-
 nywerhede en nuwe groeipunte
 gegee word.

- PWV-Kompleks (Pretoria-Witwa- (a)
 tersrand-Vereeniging en Sasolburg)
- Durban-Pinetown (b)
- Suidwes-Kaapland (c)
- Port Elizabeth - Uitenhage (d)

(c) Tersiere aktiwiteite in die (iii)
 algemeen

- Die verband tussen stedelike (a)
 sentra, verbindingsweë en ekono-
 miese bedrywighede
- Internasionale handel (b)

3.2 Suidwes-Afrika-Namibië 4.2
 By die behandeling van hierdie afdeling
 moet slegs probleme wat betrekking het
 op die regionale ekonomiese ontwikke-
 ling beklemtoon word.

4. Inleiding 1.

- Kaartwerk 1.1
 Waar moontlik moet kaart- en foto-
 ontleding en vertolking van spesifieke
 streke waarvan die 1:50 000 topogra-
 fiese kaartvelle van Suid-Afrika
 beskikbaar is, geïntegreer word by
 die toepaslike dele van die sillabus.

- Kwantitatiewe tegnieke 1.2
Kwantitatiewe tegnieke soos gemiddeldes, afwykings, eenvoudige korrelasies, strooidiagramme, regressielyne en waarskynlik moet waar geskik en van toepassing gebruik word. Om te verstaan wat die verskillende tegnieke weer- spieël moet beklemtoon word. Bere- keninge en konstruksies word nie gevra nie.
- Aanvullende werk 1.3
- EEN kort navorsingstaak wat verband 1.3.1 hou met die werk soos voorgeskryf in die sillabus moet gedoen word.
- Goedbeplande en doelgerigte veldwerk 1.3.2 moet waar moontlik gedoen word.

STANDERD 10 - HOËR GRAAD

BLADSY	PARAGRAAF NO. VAN BESTAANDE KERNSILLABUS	WYSIGING	NUWE PAR. NO
p.7	1.	Onveranderd	2.
	1.1	Onveranderd	2.1
	1.1.1	'n Studie van atmosferiese modelle wat die groei, verval en weer van die volgende verduidelik:	2.1.1
		(i) Geskrap	-
		(ii) Donderstorms (tornado's)	2.1.1.1
		(iii) Siklone van die gematigde breedtes	2.1.1.2
		(iv) Onveranderd	2.1.1.3
	1.1.2	Onveranderd	2.1.2
	(i)	Van streeksomvang (sekondêre sirkulasie	2.1.2.1
		(a) en (b) Geskrap	-
		(c) Suidelike Afrika (bewegende versteurings en die invloed van antisikloniese sirkulasie	
		(Sinoptiese kaart moet in hierdie afdeling gebruik word - verwante konsepte soos aangeleer in st. 8 en 9 moet ook toegepas word).	
	(ii)	Van plaaslike omvang (tersiêre sirkulasie)	2.1.2.2
		(Suid-Afrikaanse voorbeelde moet waar moontlik ingesluit word).	
	(a)	Dalklimate (die invloed van rigting waarin hange front, verhitting en afkoeling, anabatiese en katabatiese vloei, temperatuurinversie, ryp en mis.	(i)
	(b)	Stedelike klimate (verskille tussen stad- en landelike omgewings, temperatuur- en uitstralingsverskille, kenmerke van stadsklimaat - toenemende mis, lugbesoedeling, neerslag, hitte-eilande).	(ii)
	1.1.3	Geskrap	-
	1.2	Onveranderd	2.2
	-	Verweringsprosesse	2.2.1

1.2.1	Dreineerbekke, stroompatrone (byvoorbeeld dendrities, tralie, reghoekig, ens.), stroomroof, stroomprofiel en kruisdalseksie, eienskappe van stroomkanale en die begrip van vereffening.	2.2.2
1.2.2	Onveranderd	2.2.3
1.2.3	Onveranderd	2.2.4
p.8 1.2.4	Onveranderd	2.2.5
1.2.5	Grond	2.2.6
-	Konsep van 'n grondprofiel (struktuur, tekstuur, kleur, ens.)	2.2.6.1
-	Grondvormende faktore (wisselwerking tussen moedermateriaal, klimaat, biologiese aktiwiteite, tyd en reliëf)	2.2.6.2
-	'n Elementêre kennis van die beginsel waarvolgens die Suid-Afrikaanse grondsoorte geklassifiseer word volgens die Binomiale sisteem.	2.2.6.3
1.2.6	Geskrap	-
2.	Onveranderd	3.
2.1	Onveranderd	3.1
2.1.1	Onveranderd	3.1.1
	(a) Onveranderd	3.1.1.1
	(b) Faktore wat die standplaas ligging en vorm beïnvloed: kruispaaie, fonteinsones, deurgangspunte, ens.	3.1.1.2
2.1.2	Onveranderd	3.1.2
	(a) - (f) word deur die volgende vervang:	
-	Die prosesse en eienskappe van verstedeliking in 'n vergelykende konteks (d.w.s. in verskillende gebiede van die wêreld).	3.1.2.1
-	Faktore wat die standplaas, ligging en funksie beïnvloed.	3.1.2.2
-	Verbreiding van stedelike sentra	3.1.2.3
-	Definisie van sentrale plekke	(i)
-	Invloedsfere	(ii)

- Die basiese begrippe wat die verskaffing van dienste vanaf stedelike sentra ondersteun - die begrippe van drempelbevolking en reikwydte en die definisie van hoë- en lae-orde-dienste. Die groepering van dienste om hiërargieë te vorm, en die gevolglike ontstaan van verskillende ordes van stedelike sentra. Die moontlike identifisering van stedelike plek-hiërargieë. (iii)
- 'n Teoretiese ideale verbreiding van 'n hiërargie van sentrale plekke, byvoorbeeld Christaller se model. (iv)
- (b) Onveranderd 3.1.2.2
- (i) Onveranderd (i)
- (ii) 'n Studie van die Suid-Afrikaanse produksie van minstens TWEE van goud, diamante, steenkool, ystererts en koper gesien in verhouding tot die wêreldopbrengs. (ii)
- (In hierdie afdeling moet aandag gegee word aan die belangrikheid van sekere geologiese sisteme).
- 2.1.3 Onveranderd 3.1.3
- (a) Onveranderd 3.1.3.1
- (b) Faktore wat die plasing van nywerhede begunstig:
 - In die algemeen (a)
 - Spesifiek toegepas op 'n studie van een van die Suid-Afrikaanse swaar-nywerheidsoorte. (b)
- 2.1.4 Tersiêre aktiwiteite 3.1.4
- Diensnywerhede, elektrisiteit, vervoer en handel. 3.1.4.1
- Vervoer en elektrisiteit in Suid-Afrika 3.1.4.2
- 2.1.5 Ekonomiese ontwikkeling 3.1.5
- Die begrip van stadiums van ekonomiese ontwikkeling. (Dit kan aan die hand van modelle van ekonomiese ontwikkeling gedoen word). 3.1.5.1
- 'n Toepassing van die konsep op Suid-Afrika. 3.1.5.2

p.6	3.	Onveranderd	4.
	3.1	'n Vergelykende studie van tegnologies - ontwikkelde en tegnologies ontwikkelende lande met spesiale verwysing na hulle ekonomiese ontwikkeling. Hierdie studies moet:	
	-	klem lê op die kenmerke van sulke lande;	(i)
	-	gebaseer word op die vergelyking van verskeie lande of streke om sodoende 'n globale indruk te kry;	(ii)
	-	die konsepte van uniforme (homogene) en nodale (funksionele) streke ontwikkel.	(iii)
	3.2	Inleiding	1.
	-	Kaartwerk	1.1

THE TEACHING AND EXAMINING OF GEOGRAPHY IN STANDARDS 8, 9
AND 10, HIGHER AND STANDARD GRADES

1. Differential aims in the teaching of Geography
 - 1.1 General aims.
 - 1.2 Specific aims.
2. Approach to the teaching of Geography at the H.G. and S.G. Levels
 - 2.1 General approach.
 - 2.2 Specific approach.
 - 2.3 Presentation of a particular work unit (THE NETHERLANDS) at the H.G. and S.G. levels.
3. Self-activity and independent study
 - 3.1)) General remarks
 - 3.2)
 - 3.3.1 Choice of subjects/themes for research tasks.
 - 3.3.2 Guidance to pupils.
 - 3.3.3 Presentation of themes/projects.
 - 3.3.4 Scope of theme/project.
 - 3.3.5 Evaluation.
 - 3.3.6 Displays.
 - 3.3.7 Prevention of malpractices.
4. Evaluation and examination
 - 4.1 Rounding off of differentiation by means of examinations.
 - 4.2 Evaluation and examination directed at testing in three areas Knowledge, comprehension and the application of facts.
 - 4.3 Allocation of marks at H.G. and S.G. levels with regard to knowledge, comprehension and application.
 - 4.4 Example of question at H.G. and S.G. levels, Standard 8, on the Netherlands.

- 4.5 Doubling of marks in Paper 1 (on map and aerial photo skills). Examples of question at H.G. and S.G. levels, Senior Certificate, map work and aerial photos.
- 4.6 Paper 2: Subsections and allocation of marks.
- 4.7 Essay-type questions: Pupils to be guided in a specific direction. Examples.
- 4.8 Examination memoranda: General remarks.
- 4.9 Short type of questions (oral and written): General remarks.

THE TEACHING AND EXAMINING OF GEOGRAPHY IN STANDARDS 8, 9
AND 10, HIGHER AND STANDARD GRADES

1. AIMS

1.1 General Aims

The following aims apply to both the Higher and the Standard Grades:

- 1.1.1 To develop in the pupils knowledge and understanding of the distribution, variations and inter-relationships of the phenomena related to the earth's surface;
- 1.1.2 To instil interest in and love for one's own country and its people; and to increase the pupils' knowledge and understanding of its physical and human diversity, as well as the problems facing it;
- 1.1.3 To foster interest in and an understanding of other countries and peoples and of the inter-dependance of nations, through a study of their physical and human diversity and of their problems;
- 1.1.4 To quicken an interest in and an understanding of the wonder of Creation, as revealed in a study of Physical Geography;
- 1.1.5 To stimulate an active interest in significant occurrences of geographical importance, as reflected in newspapers, periodicals, radio reports, television transmissions and films;
- 1.1.6 To instruct pupils in the practice of the most important geographical techniques and in the interpretation of the various types of maps, photographs, graphs and diagrams;
- 1.1.7 To enrich the pupils' use of leisure time spent in natural surroundings and to make their visits to other parts of their own, or other countries, more meaningful;

1.1.8/.....

- 1.1.8 To bring to the attention of pupils the utilitarian value of Geography for various vocations such as city and regional planning, cartography, meteorology, geology, agriculture, etc.

1.2 Specific Aims

The following aims apply primarily to the Higher Grade:

- 1.2.1 The development of a practical, scientific approach through precise observation, investigation, consideration, interpretation, evaluation and deduction;
- 1.2.2 the acquisition of valuable background knowledge for further study in Geography and the applied sciences.

APPROACH TO THE TEACHING OF GEOGRAPHY AT THE STANDARD AND HIGHER GRADE LEVELS

1 General approach

- 1.1 In both syllabuses, but particularly in the Standard Grade, the approach must be practical as far as possible.
- 1.2 In presenting material in the classroom/laboratory a link must constantly be sought with current affairs as reflected in news-reports.
- 1.3 Because so much of the material which is presented, falls outside the experience of the pupil, particularly the less gifted pupil, illustrations must constantly be employed. Constant use must, therefore, be made of pictures, maps, atlases, models, collections, graphic representations, etc. The use of audio-visual apparatus such as slide and film projectors, and in the future, closed circuit television, is essential to widen the pupils' experience as much as possible.

2.1.4/.....

- 2.1.4 Outside the classroom the basis of Geography teaching must be direct observation in the field. In this way pupils must become familiar with geomorphological features, certain aspects of urban Geography, the reading and interpretation of topographical maps, etc.
- 2.1.5 In both syllabusses, but particularly in the Higher Grade, teaching through the posing of problems and comparative studies is of the greatest importance. This approach offers a challenge to the pupil and leads to reasoning.
- 2.1.6 In both syllabusses research tasks can be undertaken by individual pupils or by groups of pupils. It is essential that teachers give the necessary guidance to enable pupils to tackle such tasks systematically and scientifically. The drawing up of a scheme of work (which can later serve as a list of contents), guidance concerning research methods in the laboratory, the library or in the field, the use of footnotes and the construction of a bibliography are some important aspects to which attention must be given before the pupils start on their own. (Consult the section on "Self-activities and independent study".)
- 2.1.7 The teacher must be adaptable and selective in his own approach. He must, e.g., not hesitate to interrupt his teaching when a particular occurrence such as a flood, earthquake, rapid rise in the price of a commodity, etc., makes this necessary.
- 2.2 Specific Approach
- 2.2.1 Standard Grade
- 2.2.1.1 The aim of the teaching of Geography at the S.G. level is largely the transfer of knowledge and factual content - the factual content which serves as the basis of the subject. Conse-

quently/.....

quently teachers will make use of the direct approach to describe geographical phenomena. This assumes careful methods of investigation and observation, but need not necessarily include an in-depth analysis of the observed phenomena. This would require, therefore, the ability to give a clear geographical description of the observed phenomena in connection with e.g. a topographical feature, a region or a description of an experiment.

2.2.1.2 Secondly, the teaching of geography at the S.G. level aims at the acquisition of geographical skills and techniques. Such skills and techniques include, among others, -

- (a) the reading, drawing and elementary interpretation of graphs;
- (b) the reading and elementary interpretation of statistical information in connection with climate, production, the import and export figures of a country;
- (c) the reading of maps with a view to extracting information concerning density, distribution (spread and scatter) and topographical features;
- (d) the reading, drawing and interpretation of diagrams;
- (e) elementary sketching in the field and from photographs.

2.3 Specific Approach

2.3.2 Higher Grade

2.3.2.1 The teaching of Geography at the H.G. level is obviously also concerned with the acquisition of factual content (in fact, more detailed and comprehensive content than in the S.G.), and of geographical skills and techniques of a more advanced kind. The approach will, however, be more indirect. Not

only/.....

only will methods of investigation and observation be important, as in the S.G., but teachers will be concerned with teaching geographical concepts and the stimulation and development of a pupil's ability to analyse, to reason, to interpret, to explain and to make deductions. The H.G. pupil must, therefore, also master the factual content and geographical techniques, but he will be particularly concerned with the application of these.

2.4 In the following WORK UNIT ON THE NETHERLANDS is shown how it can be presented and approached at the H.G. and S.G. levels with regard to -

- (a) the amount and accentuation of the factual content which is required in the two grades, and
- (b) with regard to the amount of analysis, reasoning, deduction, etc., which is required from the H.G. pupils in particular.

2.4.1 Introduction

Pupils are informed at the start of the lesson what will be required from the H.G. and S.G. pupils. In the S.G. pupils are chiefly required to have a knowledge of the factual content, while the H.G. pupil, in addition to the content, must also be able to analyse and explain some of the problems of the region.

There are several ways in which the Netherlands, or any other unit of work, can be approached. The work can be approached thematically, systematically or through sample studies. In this example the Netherlands will be approached systematically.

The/.....

The study may be introduced by mentioning certain problems concerning the Netherlands. For example, the population and the area of the Netherlands can be looked up and a population density figure worked out. By reference to a population map a detailed analysis of this population density per km² may be made. With this information and comparative figures as background, a systematic study of the Netherlands can be commenced as follows:

Standard Grade

Higher Grade

4.2	<u>Position</u> Factual information is given.	Factual information is given.
4.3	<u>Relief</u> An elementary, general survey is sufficient, i.e. attention is drawn to all features shown on the map.	A detailed consideration including a reference to soil types, shortage of soil and relief. (Emphasise the importance of the latter on the way of life in the Netherlands.)
4.4	<u>Climate</u> Name the climatic type, consider the climatic factors and their influence on the area.	Name the climatic type, consider the climatic factors and their influence on the area. Compare other areas with a similar climate.
4.5	<u>The struggle against the sea</u> A superficial consideration of the struggle with the sea and water, i.e. a factual description.	A detailed consideration of the struggle with the sea and water by referring to the Zuiderzee reclamation works (historical

survey/.....

Standard Grade

Higher Grade

2.4.6 Human activities

Percentage of the population in different occupations.

survey, the creation of polders, analysis of a polder, problems arising from reclamation from the sea and its significance) and the Delta scheme.

Percentage of the population in different occupations.

2.4.6.1 Farming

The different types of farming and their location.

The different types of farming and their location. Analysis and explanation of the different types of farming (factors such as relief, climate, raw material size of farms and scientific approach to fertilising, modern methods, glass culture must be considered). The place of farming in the national economy.

2.4.6.2 Mining

A survey of mining, i.e. the mere facts.

A survey of mining. Factual content as well as problems arising from the mining.

2.4.6.3 Industries

The distribution of the different industries.

The distribution of the different industries. Factors which influence these industries and their distribution.

2.4.6.4	<u>Tourism</u>	)		<u>Tourism</u>)	
2.4.6.5	<u>Population</u>	)	Factual	<u>Population</u>	)	Factual
2.4.6.6	<u>Cities</u>	)	survey.	<u>Cities</u>	)	survey.
2.4.6.7	<u>Trade</u>	)		<u>Trade</u>)	

2.5 THEMES

The following topics could be studied by H.G. pupils. The same themes could be done on the S.G., but in this case emphasis will be on factual content and description rather than on explanation and analysis of the facts.

2.5.1 Population

Distribution of population in the Netherlands, urbanisation, peri-urban development, composition of the population and vocational distribution.

2.5.2 Rotterdam as a world port

Historical background, extensions to the harbour, consequences of harbour development, entrepot (transitional) harbour, industries.

2.5.3 Amsterdam

Historical background, industries, a traffic node (land, air and sea), cultural centre.

2.5.4 Zuiderzee works

Historical background, polder development, the different polders, problems associated with the creation of polders.

2.5.5 The Delta project

Introduction (with reference to the 1953 floods), aims of the project, implementation of the plan, advantages and disadvantages of the scheme.

2.6 General Remarks

- 2.6.1 Teachers must study the Higher and Standard syllabuses carefully in order to be completely familiar with the differences. Instructions given in the syllabuses should be strictly applied. The syllabus must be seen as a whole and must be dealt with as a unit. Care must be exercised not to give preference to certain aspects at the expense of others.
- 2.6.2 When both syllabuses are offered, the work in the Higher and the Standard Grade should be handled simultaneously, especially where pupils in both grades are to be found in the same class. It must also be ensured that lesson material is presented in such a manner that neither group benefits at the expense of the other. The Higher Grade syllabus certainly involves more work, but the Standard Grade demands the continuous application of a practical approach and this requires a great deal of time.

3. SELF-ACTIVITY AND INDEPENDENT STUDY

- 3.1 Self-activity in Geography can take different forms in the Higher and Standard Grades. It can consist of summaries or answers to questions which have reference to the normal daily work of the pupils, or it can consist of independent research tasks.
- 3.2 Self activity can be used in the course of daily classwork to keep one section of the class working purposefully and useful while the other section receives intensive attention and instruction. S.G. pupils can e.g. complete summaries and question completed work or be kept busy with mapwork, while H.G. pupils receive additional teaching. On the other hand, H.G. pupils could do research projects which require independent study, while basic material is taught to S.G. pupils and consolidated with them.

3.3 The syllabuses require pupils on the H.G. as well as on the S.G. to do individual research projects. Because of their ability standard, H.G. pupils will probably be better able to cope with independent study and to complete such tasks. This does not mean, however, that S.G. pupils need not attempt such tasks. Their projects will be of a simpler and more practical nature and will be done under closer guidance and supervision of the teachers. The following general guidance concerning research tasks is offered:

3.3.1 Choice of subjects/themes for research tasks

3.3.1.1 When a country is dealt with, the topic must be chosen from the country and not be a study of the country, i.e. a systematic account of the geography of the country is not called for.

3.3.1.2 Topics should be of real interest to the pupils.

3.3.1.3 Topics should be of such a nature that a number of sources must be consulted.

3.3.1.4 Topics involving problem solving should be encouraged, especially in the senior and H.G. classes. A few examples follow:

- (a) You have been asked by the Government of Lesotho (or any other country) to lead a team of specialists, investigating the problems and possibilities of future development. Prepare a report which could form a basis of a 5-year development programme.
- (b) Analyse the factors influencing the changing land use pattern in the declining vine growing industry of the Stellenbosch area.
- (c) Attempt to find the reasons for the hook shaped bays of the South Coast of South Africa.

3.3.1.5/.....

3.3.1.5 Themes can also be coupled with collections, e.g. the refining of a material, a mineral or an agricultural product. Such a collection must be accompanied by a written explanation. This type of research project is particularly suited to the S.G. pupil.

3.3.2 Guidance to pupils

3.3.2.1 Teachers must set out clearly what is expected of their pupil preferably in the form of a circular, which pupils can refer to frequently. A timetable for the completion of specific phases of the work must be established. Progress reports by the pupils should be submitted from time to time and teachers must see the work. This constant guidance is essential. Pupils must also be encouraged to come to their teacher for help. In this way the principle of differentiation can be applied most effectively.

3.3.2.2 Groupwork is permissible, particularly in Standard 8 and on the Standard Grade. This has several advantages, but teachers must be aware of some of the problems, viz. -

- (a) that each pupil must be guided to do his share according to his ability;
- (b) that the intellectual of the group is not left to do all the writing up;
- (c) that it is difficult to award marks for individual work.

3.3.3 Presentation of projects

3.3.3.1 It is not advisable to restrict pupils to a set method of presentation, but they will need guidance and encouragement.

Possible/.....

Possible methods of presentation are theme books, files, "concertina books" made of card, material (samples) mounted on card, with the necessary explanation. The nature of the project and the aptitude of the pupil will, to some extent, determine the method of presentation.

3 .3.2 Pupils must be encouraged to use a wide variety of geographical skills. Written work can often be minimised by use of graphs, diagrams, various types of maps, field sketches, photographs, etc. in presenting geographical data. (Photostat copies and newspaper cuttings can be regarded as legitimate illustrative material, but not pictures which have been cut from books or magazines).

.3.4 Length of the theme or project

This will vary with the age and aptitude of the pupil concerned. Quality is to be preferred to quantity. A minimum length might be suggested, but not a maximum length, so that the pupil who becomes really interested can exploit his abilities to the full. The length insisted upon must be such that it is not burdensome.

.3.5 Evaluation

The great variety of material which will be presented, demands a very flexible system of evaluation. Pupils must be informed beforehand what factors will be taken into account in the marking, but the final assessment should depend on a global rather than on analytical mark.

.3.6 Displays

Pupils should be given the opportunity of exhibiting their research work to the class, the school and even to the public on open days. This provides good motivation and focuses attention on the subject.

3.3.7 Prevention of malpractices

Teachers will have to be on their guard against the trading and misuse of previous years' Projects. Two possible ways of preventing this are that all projects become the property of the school and that the topics which pupils may attempt each year be varied.

4. EVALUATION AND EXAMINATION

4.1 The examination rounds off the differentiation between the SG and the HG which was commenced in the classroom. Separate question papers for the different levels are drawn up for this purpose

4.2 Examination and evaluation in Geography are directed at the testing of three accomplishments of the student:

4.2.1 Knowledge: A student's ability to reproduce the facts and principles which are summarized in the syllabus.

Examples: Knowledge of facts (e.g. the distribution, features and significance of block mountains);

knowledge of terminology (e.g. faulting block mountains, graben);

knowledge of principles (e.g. map symbolism, the geomorphological cycle, the central-place theory).

4.2.2 Comprehension: A pupil's ability to see past the literal meaning of facts, figures and images and to understand them.

Examples: The transcription of symbolic forms' in words (a contour sketch of a compound volcano) and, vice versa, simple deductions (to recognise a tendency in a table); the ability to grasp a connection between simple sets

of/.....

of data (e.g. a description of the connection between farm buildings and roads on a map).

4.2.3 Application: The use of geographical facts, principles, skills and techniques to obtain facts which were unknown to the student previously.

Examples: The application of a technique on a new situation (e.g. the drawing of a mean annual precipitation map from figures supplied);

the ability to evaluate situations according to specific principles (e.g. the finding of a suitable position for a harbour along a coast-line on a map);

the ability to draw conclusions and predict trends (e.g. from the plan of a city and its site, the student indicates the most probable directions of expansion).

4.3 Questions and subsections of questions should be formulated specifically to test either knowledge, or comprehension, or application. The teacher will, therefore, aim his questions at clearly, pre-selected targets for which he has prepared his students in the classroom. In order to achieve this aim, it is recommended that subsections of questions be arranged as follows:

4.3.1

4.3.2

Ability to be tested	Division of Marks in Question	
	HG ex 80	SG ex 60
Knowledge.....	40	45
Comprehension.....	24	) 15)
Application	16))
	(80)	(60)

(With permission of the Cape Education Department)



TELEPHONE 7120

DEPARTMENT OF EDUCATION
RHODES UNIVERSITY
P O BOX 94
GRAHAMSTOWN
6140
REPUBLIC OF SOUTH AFRICA

EAGC/AvdM

24 September 1981

Ref: JMB/422

The Registrar
RHODES UNIVERSITY

Dear Mr Wilkinson

JOINT MATRICULATION BOARD : REVISION OF DIFFERENTIATED GEOGRAPHY
SYLLABUS

I have discussed the detailed schedule of changes in the Geography syllabuses with Professor Daniel, who suggested that I should write to you separately concerning my observations. I would be grateful if you would forward this letter to the Secretary of the Committee of Heads of Education, Private Bag X122, Pretoria.

Most of the individual changes seem to me to be sensible and justified by recent developments in the subject, but I am concerned about some of the cumulative effects of these changes which I will return to later.

First, some comments on individual changes:

Standard VI

- (a) Some of the concepts introduced in physical geography seem rather difficult for pupils at this stage e.g. phases of the moon, cause and significance of tides, relating pressure to synoptic charts, and introduction to synoptic weather charts;
- (b) strongly support the deletion of the sections on explanation of rainfall;
- (c) suggest that the new section 1.2 give more guidance to the teacher, e.g. perhaps stressing role of the media (TV, radio, newspapers etc) in alerting pupils to 'topical events';
- (d) not happy about the removal of the whole section on natural regions. It has not been my experience that pupils find this section difficult. Although the natural regions approach is traditional, it still features in important recent works on geographical education e.g. P Bailey, Teaching Geography (1974) includes it as number 8 among his short list of Geography's 'distinctive ideas', while N J Graves, Professor of Geographical Education in the University of London, in his new book,

Curriculum Planning in Geography, (1979) favours the ecosystem approach and on p. 73 suggests work on major natural regions for ages 13-15.

The inclusion of some of the natural regions in Standard VII goes some way to meeting my objections, and I strongly support the valuable suggestion in 6.3 and 6.4 of study of climatic and vegetational regions in South Africa, and in other parts of the world with similar regions.

Standard VII

- (a) strongly support deletion of map projections;
- (b) glad to see the increased emphasis on a case study of each of the natural regions. Before, the coverage of the human geography of natural regions was so perfunctory as to be virtually useless and a source of irritation to the teacher. But some of the samples are very complex: United Kindom! Surely Ganges Valley more suitable than Indus as Monsoon sample?
- (c) I am concerned about the omission of the regional geography (5).

There may have been too many regions in the former syllabus, but the implications of the wholesale removal of this section are serious: a generation woefully ignorant of the world beyond the Republic!

Standard VIII

- (a) 2.1.4 (old) sorry to see the removal of this practical work on population maps and diagrams, both the construction and the interpretation;
- (b) 3.1 (old) I feel that this was a most valuable and up to date section of the old syllabus, and so am concerned about the increased level of difficulty involved in considering 'several countries or regions so as to present a global view'. Among overseas textbooks at this level, only O'Connor, Geography of Tropical African Development seems to be suitable as a model, and his study is confined to a major part of one continent, and not 'global'. The Developing World and The Developed World recently published by Bell and Hyman (1979) are a very useful textbook model to consider for the non regional approach, as they 'take into account the conceptual and quantitative revolution in school geography while remaining firmly rooted in the 'real world'. My fear would be that the proposed comparative study would be taken at too advanced a level, more appropriate to university work, and this danger is best remedied by encouraging school teachers presently dealing with this senior work to play a major role in the writing of the new textbooks. Mabogunje's The Development Process (Hutchinson, 1981) seems to be the best quarry for the textbook writer, and the most geographical of recent development studies. Unless the level of difficulty is carefully considered, we are likely to have more rote learning of basic geographical concepts as partially understood 'facts';

- (c) the proposed switch between Standard VII and IX geomorphology topics is a good one from the viewpoint of developmental psychology.

Standard IX

- (a) 3.1.5.1 new syllabus : stages of economic development models are under heavy criticism in modern development theory. Which models would be used? The many articles on teaching the geography of development in Teaching Geography lay more stress on empathy with individual Third World countries than on theoretical models. At this stage pupils should have a opportunity to realize that the issue is problematic and hotly debated.

Standard X

- (a) This was a valuable part of the old syllabus. I welcome the additional work on soils provided an ecosystem approach is used;
- (b) why the omission of the identification of 1.2.5 (especially the fieldwork and identification of landforms?)
- (c) I am very concerned about the additional quantitative work (new 1.2). It seems to me unsound to teach concepts such as correlations regression lines and probabilities in this sketchy way. I have discussed this with mathematicians and geographers at Rhodes. My own experience in studying and teaching educational statistics indicates how much time is needed to get any real understanding. Is some integration with the mathematics syllabus possible?
- (d) could the 'international trade' aspect be extended to include South Africa's geographical position in the world? This would give opportunities for integrating some of the development studies in Standards VIII and IX.

In conclusion, my feelings are rather mixed about the proposed changes, though I recognize that they mirror the development of geography as a systematic scientific study at university level. It seems that the syllabus planners have overlooked two relevant areas which would have illuminated their work. Firstly, the recent writings on school geography curriculum in Geography, Teaching Geography and the American, Australian and Canadian journals, as well as the books by Graves, Hall, Bailey, Marsden, Boden, Walford and others, and the Schools Council 14-18 Geography Curriculum Project. All these underline that the ordinary pupil asks for relevance, human interest, activities, and opportunities to investigate in the field. Secondly, recent work on curriculum design emphasizes the value of providing a broad syllabus outline with opportunities for the teacher to choose between electives, to experiment, and to find topics and approaches within the broad structure which suite the needs of his particular pupils in their local setting. The present syllabus seems to me a model of rationality, well abreast of recent developments in the subject at school level overseas, with scope for electives on the regional side. The proposed syllabus seems to

overweight the systematic at the expense of the regional, and to ignore the weighty evidence in school textbooks and lesson units overseas, that understanding of theory blossoms when it is based on carefully chosen case studies, systematic or areal. I enclose a copy of a recent Joint Matriculation Board article in Teaching Geography. It is interesting to note the proposed syllabus reflects some of the thinking which underlines this curriculum document, and I have marked some of the areas where the two documents diverge.

I hope that my detailed observations will be of some use to the committee. I would be pleased to enlarge on any aspects.

Yours sincerely

Dr E A G Clark
SENIOR LECTURER IN EDUCATION

(responsible for Geography Method at D.E. and H.D.E. levels, and for Curriculum Studies (Geography) at B.Ed. level, also for Philosophy of Education, formerly Principal Lecturer in Geography and Head of Department in an English College of Education).

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Appendix B 3

The Registrar
Rhodes University
GRAHAMSTOWN
6140

15 September 1981

Dear Mr. Wilkinson

JOINT MATRICULATION BOARD: GEOGRAPHY SYLLABUSES.

Although my comments, and those of the members of my department, may be too late to be considered, I hope you will nevertheless forward them to the relevant committee. I think it is worth making the following three general points in your letter.

1. In the early 1970's the Universities were given a matter of some two weeks in which to comment on the draft syllabuses. It appeared then that comments were not really welcome by the committee dealing with geography and only reluctantly did they make a few cosmetic changes.
2. Once again the J.M.B. Committees seem to have overlooked the fact that members of academic departments are busy and can't drop all the work when the J.M.B. contacts them. The letter to you is dated July 17 and so allowing for postal delays one is effectively left five weeks in which to study the material sent to the University for comment. The shortness of the period allowed for comment is even more serious as I have heard from one of the teachers at a private school that the geography committee has been busy with revising the syllabus since 1975. There is no need to overemphasize the ~~time~~ scales - 5 years against 5 weeks! Moreover I have been told that no revision is expected again until the 1990's. If these facts are correct I believe the J.M.B. is acting most irresponsibly.
3. It is a pity that the Committee seems to prefer to remain anonymous! In view of the fact that I have little faith in the J.M.B. considering in depth any comments that are made, those from my department will be brief.
 - a) It seems a serious omission that the syllabus for each standard lacks a preamble indicating to the teacher the aims that are hoping to be achieved and the level of detail required. A good syllabus contains more than a few key words and phrases. The whole is not presented as an integrated whole - no wonder geography is so often badly taught at school level.
 - b) No syllabus should use 'etc'. Its use merely indicates that the committee has run out of ideas.
 - c) No reasons are given for the changes that have been made. The committee should justify or explain its decision if it really wishes to obtain responsible responses from the universities.
 - d) Std. 8.
 - i) I deplore the use of jargon such as 'ecumene' - 2.1.1a. What is wrong with simple, straightforward terms?

- ii) There is no indication as to whether the documents entitled 'Core Syllabus for Senior Secondary Geography... Final copy refers to the new - the current syllabus. Assuming it refers to the revised syllabus, it is unfortunate that S.A. is not included under Population Geography. Secondly item 3.1 on page 3 can hardly be designed to assist anyone, let alone the teacher. For example - what is meant by a general study? Vague statements should be avoided. Thirdly the instructions should be specific - also in 3.1 the study of ONE or more can only confuse issues. Fourthly, in the same paragraph the use of the terms technologically advanced and technologically less advanced, is inappropriate. For example Societies in all cases exhibit both cases eg. a capital intensive sector as well as an informal urban sector.
- e) Std. 9.
- i) Patterns should not be divorced from processes eg. as in 2.1.3.
 - ii) Why has the section on oceanography been deleted?
 - iii) More guidance is needed in relation to 3.1.5 - stages of economic development. What models are required? Spatial? How many? In how much detail should the models be studied?
 - iv) 1.2. Too early in a child's career to introduce these quantitative techniques. Ironical that it is stated that calculations are not required. How can quantitative techniques be taught without calculations forming an integral part?
- f) Std. 10.
- i) 2.1.2.1 - not at all clear.
 - ii) 3.1.2. - greater stress should be placed on the application of theory to actual cities. There is a need to internalize the general points being made.
 - iii) There is no attempt to link the urban section with the population section done in Std. 8. The section on population 3.1.3 should also consciously link up with the Std. 8 syllabus.
 - iv) 3.2 - very general and vague.
 - v) Doubt whether quantitative techniques can be taught without doing calculations.
- g) No mention is made of examinations. It needs to be stressed that great care must be taken in marking the scripts. The success or failure of any syllabus depends on the standard and the approach to marking. I trust examiners will be well briefed and their work thoroughly checked. A mark per fact mentioned should be deplored, for example.
- h) I hope the teachers have also been consulted.

With thanks

Yours sincerely

J.B. McI. DANIEL

1923.]

[THREE HOURS.]

DEPARTMENT OF PUBLIC EDUCATION.
CAPE OF GOOD HOPE.

Examiner:
Miss D. ROBSON,
B.A.

Moderator:
Professor W. BLOMMAERT,
Litt.D.

Write at the top of the front page of your answer sheet,
after the words "Subject of Examination"—

SEN. CERT. GEOGRAPHY.

SECTION A (Compulsory.)

1. (a) What instruments would you use in collecting data for a meteorological register? Explain the use of each.
- (b) Draw graphs using the climatic data given below and briefly discuss their most important features.

Mean Temperature. (F.)

Jan.	Feb.	Mar.	Ap.	May	June
69.3	69.7	68.0	63.1	58.9	55.5
July	Aug.	Sept.	Oct.	Nov.	Dec.
54.8	55.6	57	60.7	64.2	67.3

Mean Rainfall (inches).

Jan.	Feb.	Mar.	Ap.	May	June
0.7	0.6	0.9	1.8	3.9	4.4
July	Aug.	Sept.	Oct.	Nov.	Dec.
3.5	3.3	2.2	1.6	1.1	0.8

(Answer five questions from Sections B and C, two at least from each section.)

SECTION B.

2. Select some region known to you and distinguish results due to (a) structure, (b) rock formation and (c) denudation among the surface forms to be seen in it.

3. Describe with reference to some high mountain system such as the Alps the relation between altitude and human and vegetable life.

4. What climatic conditions are most favourable for the growth of the following: maize, wheat, rice, cotton, vine?

State regions where each is grown most extensively.

5. Give an account of the water circulation of *either* the North Atlantic *or* the Indian Ocean, and explain it as far as you can. Illustrate your answer by a sketch-map.

SECTION C.

6. Give an account of the build of South Africa, and show how it has affected the economic development of the country.

7. Show how physical conditions have affected the modes of communication in Canada. Illustrate by a sketch-map.

8. Name the chief coal-fields of Europe (including the British Isles). Account for the growth of great industrial centres in any *three* of these areas.

9. Discuss the economic importance of:

- (a) The oil-fields of Asia.
- (b) Sheep-rearing in Argentina.

10. Discuss the need for, and the importance of, irrigation in South Africa. Mention the more important irrigation schemes in the country.

SENIOR SERTIFIKAAT

6

AARDRYKSKUNDE

1975

Drie uur

DEPARTEMENT VAN ONDERWYS
KAAP DIE GOEIE HOOP

SENIOR SERTIFIKAAT-EKSAMEN

Skryf op die voor-buiteblad van u antwoordboek, teenoor die woord "Vak" -

AARDRYKSKUNDE

Skryf by elke antwoord die *nommer* van die vraag. Beantwoord SES vrae:

TWEE uit Afdeling A; EEN uit Afdeling B; EEN uit Afdeling C(1) en
TWEE uit Afdeling C(2 - 5).

L.M.: In Afdeling C(2 - 5) het elke vraag 'n alternatief. Die twee
vrae uit hierdie Afdeling moet dus uit verskillende onder-
afdelings gekies word. (Bv. in geval van onderafdeling C(5)
op bladsy 12 - Suid-Amerika en Australasië - mag slegs
Vraag 16 of Vraag 17 beantwoord word).

Die gebruik van sketskaarte en diagramme om u antwoorde te
illustreer, sal gekrediteer word.

AFDELING A.

(Beantwoord TWEE vrae uit hierdie afdeling)

1. (a) (1) Beskryf sorgvuldig, met behulp van 'n skets, die
eksperiment wat *avonteling* die beste naby die
ewenaar sal illustreer. Sê ook waarom dit die
beste resultaat by die ewenaar sal lewer. (12)
- (11) Watter eksperiment lewer die beste resultaat op
hoë breedtes? (2)
- (b) Die volgende vrae het betrekking op bygaande diagram
nommer 1 van die *aarde se baan om die son*:
 - (1) Wat word die posisie genoem as die aarde die
naaste afstand vanaf die son bereik soos deur
posisie C aangedui?

- (ii) Wat is by benadering die afstand tussen die son en die aarde in posisie A?
- (iii) In posisie C word die *maan* in sy baan om die aarde aangedui. Wat word hierdie fase van die maan genoem?
- (iv) Watter soort gety ondervind die aarde in posisie C?
- (v) Waardeur word die hoogwater, aangedui by C, veroorsaak?
- (vi) Hoe lank sou dit vir die maan neem om een wenteling om die aarde te voltooi as die aarde in posisie C sou stilstaan? (12)
- (c) Verstrek die aarde se:
- (i) ekwatoriale deursnee, en
- (ii) polêre deursnee. (4)
- (d) *Dui aan en benoem* die volgende seestrome op die bygaande wêreldkaart *nommer 2*. (L.W. Plaas die voltooide kaart in u antwoordeboek):
- (i) TWEE seestrome wat met mekaar in aanraking kom en sodoende digte mis laat ontstaan. (Skakel die gebied wat mis ondervind).
- (ii) EEN kompensasiestroom in die Atlantiese Oseaan.
- (iii) EEN koue seestroom in die Stille Oseaan wat hoofsaaklik deur wind veroorsaak word.
- (iv) Merk EEN gebied op die kaart met 'n X waar seestrome as gevolg van 'n verskil in die soutgehalte van die water ontstaan. (10)
- (e) Verduidelik kortliks:
- (i) die verband tussen lengtelyne en tyd; (5)
- (ii) hoe die middaghoogte van die son met behulp van die skadustok bepaal kan word. (5)
- /50/
2. (a) Bestudeer die bygaande diagram *nommer 3* ten opsigte van 'n wind wat teen 'n berg waai, en beantwoord dan die volgende vrae:
- (i) Verstrek die lugtemperatuur soos dit by A, B en C gaan verskil. (6)

3

- (ii) Verklaar kortliks elk van die temperatuursveranderinge by A, B en C. (6)
- (iii) Waarom is die wolkbasis aan die lykant hoër as aan die windkant? (2)
- (b) Die volgende vrae het betrekking op bygaande diagram *nommer 4* van twee verskillende soorte siklone A en B:
- (i) Watter een stel 'n gematigde sikloon voor? Verstrek 'n rede vir u antwoord. (3)
- (ii) In watter halfmond kom die sikloon geïllustreer deur A, voor? Hoe weet u? (3)
- (iii) Watter een van die twee soorte siklone het die grootste invloed op die weerstoestande van Suid-Afrika? Verstrek 'n rede vir u antwoord. (3)
- (c) Verduidelik kortliks hoe TWEE van die volgende ontstaan:
- (i) temperatuurinversie;
- (ii) sneeu;
- (iii) 'n seebries. (12)
- (d) Plekke A en B kry albei 'n jaargemiddelde neerslag van 520 mm, maar wat nie van dié syfers afgelei kan word nie, is dat A se neerslag baie *doeltreffender* is as dié van B. Watter moontlike redes sou hiervoor verantwoordelik kon wees? (7)
- (e) Watter weerkundige instrument word gebruik om relatiewe vogtigheid te bepaal? Hoe word hierdie instrument gebruik? (8)
- /50/
3. (a) Bespreek die *verwerking* van gesteentes in:
- (i) warm, droë gebiede en
- (ii) warm, nat gebiede.
- Verwys na die verskillende prosesse wat in elke gebied werksaam is, en na hul kontrasterende resultate - ook ten opsigte van grondgebruik. (12)

BLAAI OM ASSEBLIEF

- (b) Gee 'n kort vereenvoudigde uiteensetting van die drie stadia van die proses van *plooiing*. (Vereenvoudigde benoemde diagramme kan ook geteken word in plaas van 'n geskrewe verduideliking). (14)
- (c) (i) Noem die verskillende kustipes wat as gevolg van die relatiewe *daling van die land* met betrekking tot die see ontstaan het. (3)
- (ii) Beoordeel die bruikbaarheid van elk van die kustipes in (i) genoem ten opsigte van hawe-ontwikkeling. Motiveer u antwoord deur na besondere eienskappe te verwys. (12)
- (iii) Teken vereenvoudigde sketse om die verskillende kustipes in (i) genoem, te illustreer. (9)
- /50/
4. Bestudeer meegaande 1 : 50 000 topografiese kaartuittreksel. Alle hoogtes is in voet aangedui. Beantwoord die volgende vrae:
- (a) Sê wat deur die volgende kaarttekens voorgestel word:
- (i) Weerskante van die Mushulu-stroom in die noord-westelike gedeelte van die kaart, ongeveer by $27^{\circ} 21' S, 31^{\circ} 34' O$.
- (ii) In die middel van die Pongolorivier, ongeveer by $27^{\circ} 20' S, 31^{\circ} 33' O$. (4)
- (b) Die loop van 'n rivier kan dikwels verdeel word in drie sektore: steil-hellend, matig-hellend en geleidelik-hellend. Watter een van die genoemde terme beskryf hierdie deel van die Pongolorivier die beste? Verstrek 'n rede vir u antwoord. (4)
- (c) Watter landbouprodukt word hoofsaaklik in die onmiddellike omgewing van Pongola verbou? (2)
- (d) Op die *meer gelyke* sentrale en oostelike dele word op besproeiingsboerdery gekonsentreer. Watter vorme van grondgebruik is daar in die *minder gelyke* westelike dele en waar, binne dié gebied, word dit aangetref? (10)
- (e) (i) Watter instrument kan gebruik word om die oppervlakte van die besproeide gebiede op die kaart te bepaal?
- (ii) Indien u nie oor die instrument in (i) genoem, beskik nie, beskryf kortliks 'n metode wat aangewend kan word om die oppervlakte van die besproeide gebiede op die kaart te kan bepaal. (12)

- (f) Gebruik 'n vertikale skaal van 1 cm = 250 vt en teken 'n deursnee op die verskaafte grafiekpapier vanaf driehoeksbaken 77 (op heuwel Mangunjana, by ongeveer $27^{\circ} 26' S$, $31^{\circ} 41' 0''$) na driehoeksbaken 79 (by ongeveer $27^{\circ} 22' S$, $31^{\circ} 42' 0''$).

(18)
/50/

AFDELING B

(Beantwoord EEN vraag uit hierdie afdeling)

5. (a) Bestudeer die volgende klimaatsgegevens van 'n kusstad wat net *buite* die keerkringe geleë is:

	J	F	M	A	M	J	J	A	S	O	N	D
$^{\circ}C$	24,9	25,1	24,4	22,6	19,5	17,4	16,6	17,5	18,8	20,2	21,5	22,9
mm	109	122	130	142	122	80	76	62	70	98	108	111

- (i) Identifiseer die natuurstreek en verstrek redes vir u keuse. (10)
- (ii) Noem TWEE gebiede, elk in 'n verskillende kontinent, met 'n soortgelyke klimaat. (4)
- (iii) Beskryf die natuurlike plantegroei wat kenmerkend is van so 'n streek. (12)
- (b) Beskryf die klimaatstoestande van die *Tropiese Savanne-streke* en toon aan in watter mate die klimaat bevorderlik of stremmend is vir die landbouproduksie. (16)
- (c) Noem die verspreiding van die *Mediterrane* streke. (8)

/50/

OF

6. (a) *Vergelyk*, in tabelvorm, die Koelgematigde Weskus- en Koelgematigde Ooskusstreke ten opsigte van hul ligging en klimaat. Verklaar, sover moontlik, alle klimaatsverskille. (20)
- (b) Beskryf die *boerdery*bedrywighede van die Warmgematigde of Subtropiese Ooskusgebiede. (10)
- (c) Vir sommige Ekwatoriale Woudlande bestaan daar faktore wat hul ekonomiese ontwikkeling bevoordeel. Verklaar dié bewering met verwysing na bepaalde voorbeelde. (12)

- (d) Noem die natuurstreek waarin elk van die volgende lande of streke geleë is:
- (i) die grootste gedeelte van Finland;
 - (ii) die Guiana-hoogland;
 - (iii) die Dekkan van Indië;
 - (iv) Patagonië.

(8)
/50/

AFDELING C(1)

(Beantwoord EEN vraag uit hierdie afdeling)

C(1) AFRIKA

7. (a) Bespreek *skaapboerdery* as een van Suid-Afrika se vernaamste boerderybedrywighede. (20)
- (b) Noem die algemene *kenmerke* en *probleme* in verband met *neerslag* in Suid-Afrika. (10)
- (c) Watter *kragbronne* word in die Suid-Afrikaanse nywerhede gebruik? Verduidelik die verband tussen kragvoorsiening en nywerheidsontwikkeling deur na spesifieke voorbeelde te verwys. Watter uitbreidings ten opsigte van kragvoorsiening word in die vooruitsig gestel? (20)
/50/

OF

8. (a) Die volgende vrae het betrekking op kaart *nommer 5* van *Rhodesië* wat verskaf is. (L.W. Plaas die voltooid kaart in u antwoordeboek):
- (i) Dui aan en benoem *op die kaart*:
 - die gebied met die hoogste reliëf;
 - die Victoria-waterval;
 - die gebied met die laagste jaargemiddelde reënval;
 - die vernaamste streek vir die produksie van Virginiese tabak;
 - die rigting van die reënbringende winde. (10)

7

- (ii) Skryf die nommers 1 tot 12 langs die kantlyn in u antwoordeboek en benoem:

die lande waarheen spoorlyne 1 en 2 gaan;
 die hawens waarheen spoorlyne 3 en 4 gaan;
 riviere 5 en 6;
 dorp 7 en 'n belangrike delfstof wat daar ontgin word (8);
 plekke 9, 10 en 11;
 meer 12.

(12)

- (b) Hoewel Swaziland, wat oppervlakte en bevolking betref, een van die kleinste state van die Suid-Afrikaanse sub-kontinent is, is sy inkomste per persoon heelwat hoër as byvoorbeeld dié van Lesotho of Botswana. Gee kortliks 'n oorsig van die faktore wat tot hierdie groter welvaart bygedra het in teenstelling met dié van OF Lesotho OF Botswana.

(28)

/50/OF

9. (a) Skryf 'n verslag oor die boerderybedrywighede in die *Nylvallei*. Verwys, onder meer, na die vernaamste probleme wat ondervind word en watter maatreëls getref word om die landbouproduksie te verhoog.

(18)

- (b) Die *Hooglande van Kenia* is die land se vernaamste landboustreek. Beskryf die klimaat en boerdery van bogenoemde gebied.

(18)

- (c) Beantwoord die volgende vrae ten opsigte van *Zaire*:

- (i) Noem die hoofstad van Zaire.
 (ii) Watter soort klimaat word op die Shaba-(Katanga-) hoogland aangetref?
 (iii) Noem die delfstof wat die grootste bydrae tot die staatsinkomste lewer.
 (iv) Noem die naaste hawe waardeur die delfstof in (iii) genoem, uitgevoer word en sê wat die grootste probleem is ten opsigte van die uitvoer van hierdie delfstof en watter stappe gedoen is om hierdie probleem op te los.
 (v) Noem twee belangrike plantasiëprodukte wat uitgevoer word.

(14)

/50/

BLAAI OM ASSEBLIEF

AFDELING C(2 - 5)

(Beantwoord TWEE vrae uit hierdie afdeling)

L.W.: Elk van Afdelings C(2 - 5) het 'n *alternatiewe* (d.w.s. 'n OF-) vraag.

C(2) EUROPA

10. (a) Die volgende vrae het betrekking op kaart *nommer 6* van *Wes-Duitsland* wat verskaf is. (L.W. Plaas die voltooië kaart in u antwoordeboek):

(i) Dui aan en benoem op *die kaart*:

die nywerheidsgebied tussen die Lippe- en die Ruhrriviere;

die Kielkanaal;

die Swartwoud;

die stad Berlyn;

die hawe Hamburg;

die Emsland-olieveld. (12)

(ii) Skryf die nommers 1 tot 12 langs die kantlyn in u *antwoordeboek* en benoem:

meer 1;

riviere 2, 3 en 4;

lande 5 en 6;

stede 7 tot 10;

seë 11 en 12. (12)

(b) Skryf aantekeninge oor TWEE van die volgende:

(i) Die klimaat van België en verwys ook na die faktore wat die klimaat beïnvloed.

(ii) Die belangrikheid van landbou in Nederland met spesiale verwysing na die redes vir die besondere hoë produksie per oppervlak van sommige van die produkte.

(iii) Fabriekswese in Nederland se aandeel in die landseksonomie met spesiale verwysing na die faktore wat dié nywerhede begunstig.

9

- (iv) die ligging en belangrikheid van Manchester. (20)
- (c) Noem Rusland se DRIE vernaamste steenkoolvelde. (6)
- /50/

OF

11. (a) Die volgende vrae het betrekking op bygaande kaart *nommer 7* van Italië se bevolkingsdigtheid:
- (i) Verstrek minstens VYF redes vir die hoë bevolkingsdigtheid van die gebied gemerk A.
- (ii) Verstrek minstens EEN rede wat die bevolkingsdigtheid van *elk* van die gebiede gemerk B, C en D verklaar. (16)
- (b) Skryf aantekeninge oor TWEE van die volgende:
- (i) Wynbou in Frankryk.
- (ii) Die tekstielbedryf van Frankryk.
- (iii) Die klimaat van die Parysbekken.
- (iv) Die grondstofvoorsiening vir Frankryk se yster- en staalnywerhede. (20)
- (c) Omdat 27% van die totale oppervlakte van Nederland benede seevlak geleë is, ondervind die land besondere *waterprobleme*. Bespreek dié probleme en verwys na die metodes wat aangewend is om hulle op te los. (14)
- /50/

C(3) NOORD-AMERIKA

12. (a) Die volgende vrae het betrekking op kaart *nommer 8* van *Kanada* wat verskaf is. (L.W. Plaas die voltooide kaart in u antwoordeboek):
- (i) Dui aan en benoem *op die kaart*:
- die koringgordel;
- die warm seestroom langs die Weskus;
- die Bowemeer;
- die gebied met die digste bevolking;
- die Schefferville-ysterertsstreek;
- die Niagara-waterval. (12)

BLAAI OM ASSEBLIEF

10

- (ii) Skryf die nommers 1 tot 12 langs die kantlyn in u antwoordeboek en benoem:
- meer 1;
 - provinsies 2, 3 en 4;
 - riviëre 5, 6 en 7;
 - stede 8, 9 en 10;
 - baai 11;
 - bergreeks 12. (12)
- (b) (i) Noem TWEE belangrike lande waarheen Kanada se koring uitgevoer word.
- (ii) Noem die verskillende *routes* waarlangs die Kanadese koringoes vervoer word. (12)
- (c) Beantwoord die volgende vrae ten opsigte van Kanada:
- (i) Noem TWEE plekke waar hidroëlektrisiteit opgevek word.
 - (ii) Noem die naam van die pas in die Rotsgebergtes waaroor die hooflyn van die Canadian Pacific-spoorweg gaan.
 - (iii) Noem EEN belangrike vishawe langs die Atlantiese Oseaan en EEN langs die Stille Oseaan se kuste.
 - (iv) Waarom is Winnipeg so 'n belangrike spoorwegsentrum?
 - (v) Watter deel van Kanada is nie in die winter met sneeu bedek nie? Waarom nie? (14)

/50/

OF

3. (a) Voer redes aan waarom *mielies* die vernaamste landbouprodukt van die V.S.A. is. Verwys na die faktore wat mielieboerdery begunstig en noem die DRIE state wat die hoogste opbrengs lewer. (20)
- (b) Verduidelik waarom ongeveer *een-tiende* van die totale bevolking van die V.S.A. in *Kalifornië* woon, wat maar een van die vyftig state van die V.S.A. is en slegs ongeveer 4,5% van die land se totale oppervlakte beslaan. (20)
- (c) Beskryf die ligging en belangrikheid van:
- Detroit of New Orleans. (10)

/50/

C(4) ASIë

17

14. (a) Die volgende vrae het betrekking op kaart *nommer 9* van *Japan* wat verskaf word. (L.W. Plaas die voltooide kaart in u antwoordeboek):
- (i) Dui aan en benoem *op die kaart*:
- die Kinki- en Nobi-vlaktes;
 - die berg Foedjijama (Foejisan) (merk met X);
 - die rigting van die heersende winde in die somer;
 - die Kueroe Sjiwo-stroom (sê of dit warm of koud is). (10)
- (ii) Skryf die nommers 1 tot 10 langs die kantlyn *in u antwoordeboek* en benoem:
- eilande 1 en 2;
 - seestraat 3;
 - stede 4 tot 7;
 - vlakte 8;
 - lengtelyn 9;
 - breedtelyn 10. (10)
- (b) Gee 'n volledige beskrywing van die *Rooibekken* van China sodat die belangrikheid van hierdie gebied duidelik uit u antwoord blyk. (26)
- (c) Verklaar kortliks die groot *speling* tussen Sjanghai se gemiddelde somer- en wintertemperature, naamlik Julie: 26,7 °C en Januarie: 3,3 °C. (4)
- /50/

OF

15. (a) *Rys* en *jute* is albei kenmerkende produkte van Asië. Kies *of rys of jute* en bespreek die verbouing daarvan onder die volgende hoofde:
- (i) klimaatsvereistes;
- (ii) vernaamste produksiestreke in Asië;
- (iii) aanvraag. (20)

BLAAI OM ASSEBLIEF

12

- (b) Die ontwikkelingspeil van die Indiese en Japanse *nywerhede* verskil in 'n groot mate. Na aanleiding van faktore soos grondstofvoorsiening, kragbronne, arbeid en markte, hoe verskil hierdie lande se *fabrieksnwywerhede* en waarom? Lewer ook kommentaar oor die invloed van klimaat en verwys na die belangrikste *nywerhede* ter verduideliking. (30)

/50/

† C(5) SUID-AMERIKA EN AUSTRALASIË

16. (a) Die volgende vrae het betrekking op kaart *nommer 10* van *Suid-Amerika* wat verskaf word. (L.W. Plaas die voltooide kaart in u antwoordeboek):

- (i) Dui aan en benoem *op die kaart*:

die Serra do Mar-reeks;
 die koffieproduserende gebied van Brasilië;
 die Pampas van Argentinië;
 die hoofstad van Brasilië;
 die Steenbokskeerkring;
 die Atacama-woestyn.

(12)

- (ii) Skryf die nommers 1 tot 12 langs die kantlyn *in u antwoordeboek* en benoem:

state 1 en 2;
 riviere 3, 4 en 5;
 stede 6, 7 en 8
 meer 9;
 breedtelyn 10;
 eilande 11;
 seestraat 12.

(12)

- (b) (i) Teken 'n vereenvoudigde sketskaart van die *Pampas* van Argentinië. Dui daarop aan waar *elk* van die volgende boerderysoorte aangetref word:

mielies; koring; vleisbeeste; wolskape.

(12)

- (ii) Kies EEN van die landbougewasse en EEN van die veesoorte in (i) genoem en voer redes aan waarom elk aangetref word soos deur u in (i) aangedui.

(14)

/50/

13

OF

17. (a) Bespreek *suivelboerdery* in Nieu-Seeland. Verwys na die gunstige sowel as ongunstige faktore wat die bedryf beïnvloed. (16)
- (b) Australië beskik oor 'n aantal groot *artesiëse komme*.
- (i) Verduidelik, met behulp van 'n diagram, wat met 'n artesiëse kom bedoel word.
- (ii) Watter belangrike funksie vervul hierdie artesiëse komme in die ekonomie van die land?
- (iii) Noem 'n nadeel verbonde aan sommige van hierdie artesiëse bronne. (14)
- (c) Bespreek die geografiese belangrikheid van elk van die volgende twee stede: (12)
- Sydney; Christchurch.
- (d) Noem 'n belangrike delfstof wat by elk van die volgende plekke ontgin word:
- (i) Rum Jungle; (ii) Newcastle; (iii) Broken Hill;
- (iv) Cloncurry; (v) Moonie; (vi) Greymouth;
- (vii) Ballarat; (viii) Pilbara. (8)

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#####

1:50,000 SOUTH AFRICA

2731BC PONGOLLA

2731BC PONGOLLA



KAARTE EN DIAGRAMME / MAPS AND DIAGRAMS

DEPARTEMENT VAN ONDERWYS
KAAP DIE GOEIE HOOP
DEPARTMENT OF EDUCATION
CAPE OF GOOD HOPE

SENIOR SERTIFIKAAT-EKSAMEN 1975
SENIOR CERTIFICATE EXAMINATION 1975

VAK: AARDRYKSKUNDE
SUBJECT: GEOGRAPHY

Slegs daardie kaarte wat van toepassing is op vrae wat beantwoord is, moet in u antwoordeboek geplaas word.

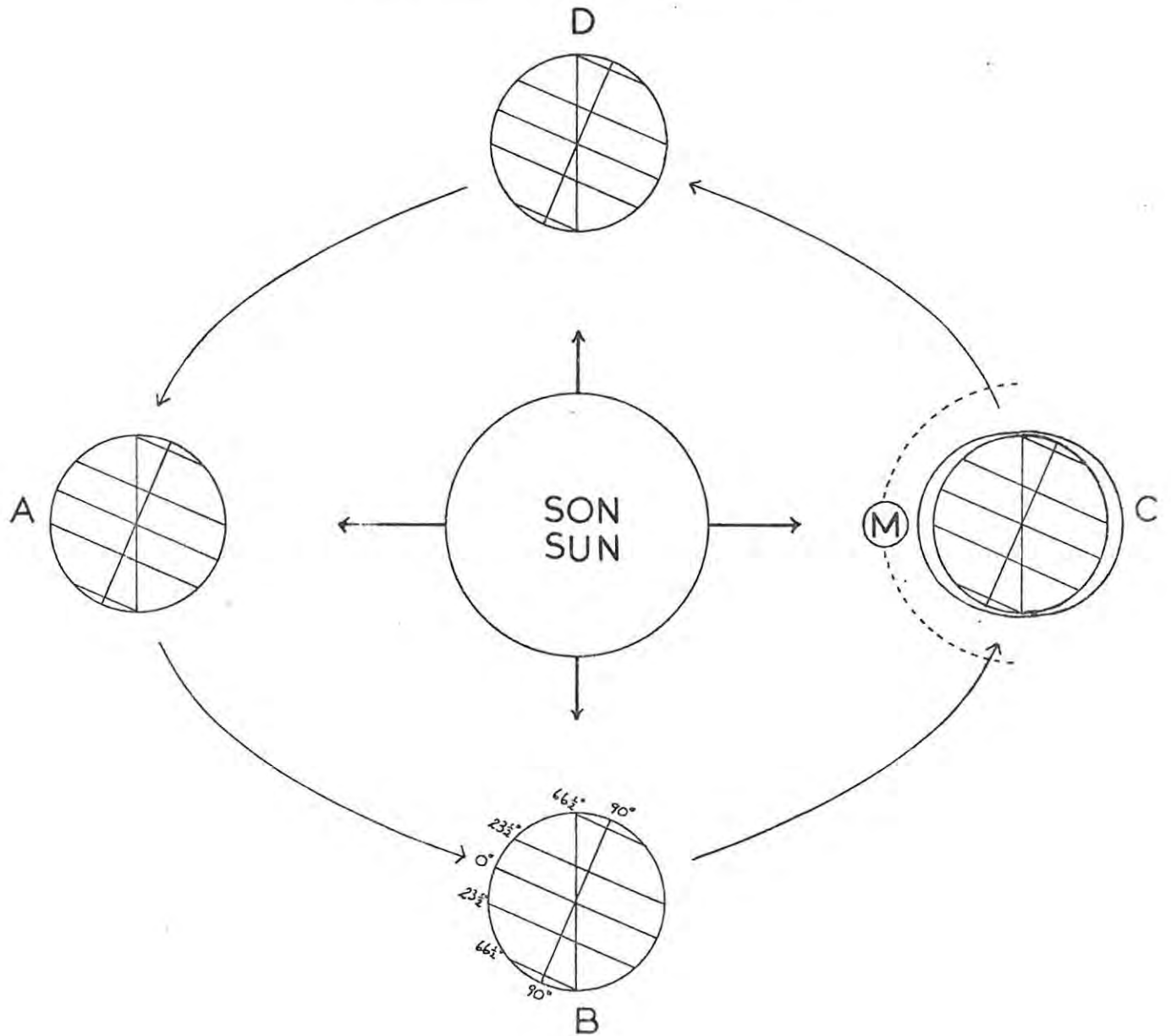
Only those maps which are applicable to questions which have been answered should be placed inside your answer-book.

Bygaande kaarte/diagramme by vrae:
Maps/diagrams to accompany questions:

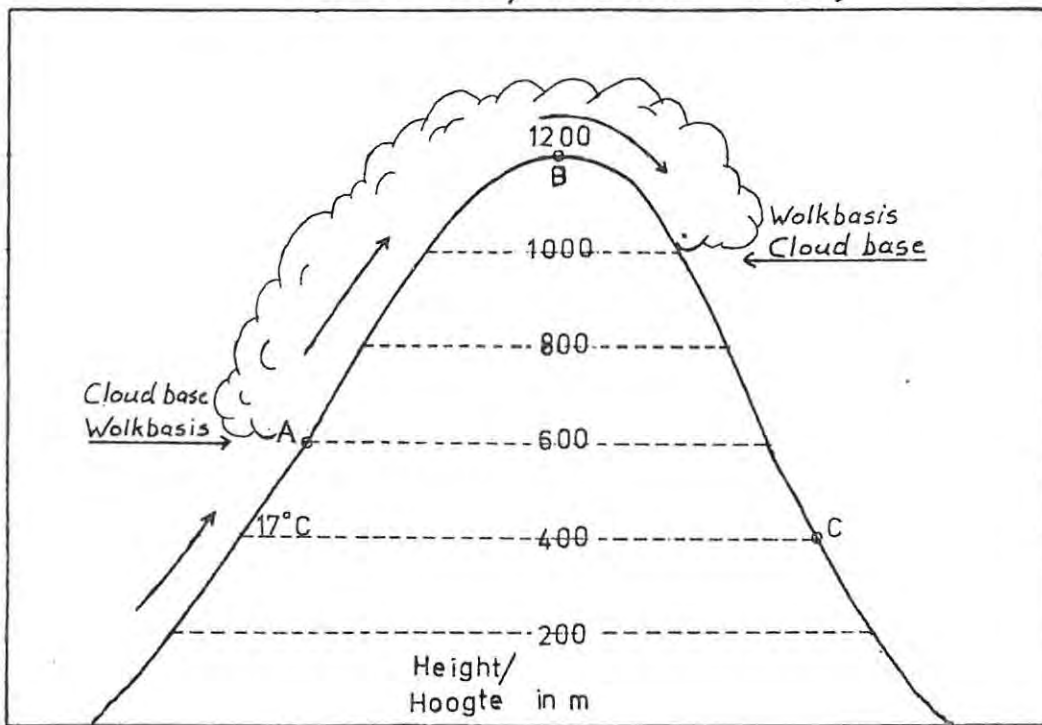
1(b), 1(d), 2(a), 2(b), 8(a), 10(a), 11(a), 12(a), 14(a) en/and 16(a).

BLAAI OM ASSEBLIEF/PLEASE TURN OVER

VRAAG/QUESTION 1(b)

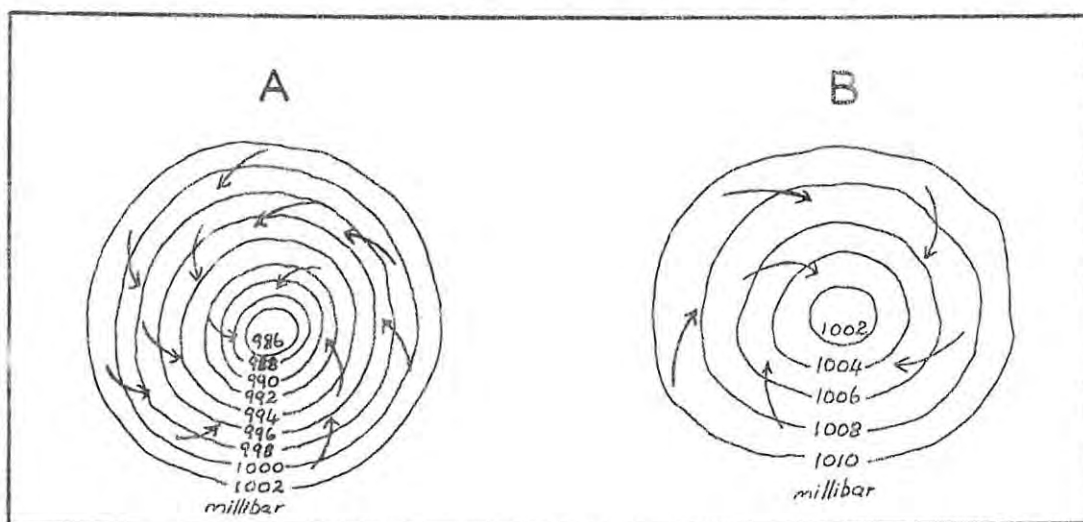


QUESTION/VRAAG 2(a)



BLAAI OM ASSEBLIEF/PLEASE TURN OVER

VRAAG/QUESTION 2(b)



BLAAI OM ASSEBLIEF/PLEASE TURN OVER

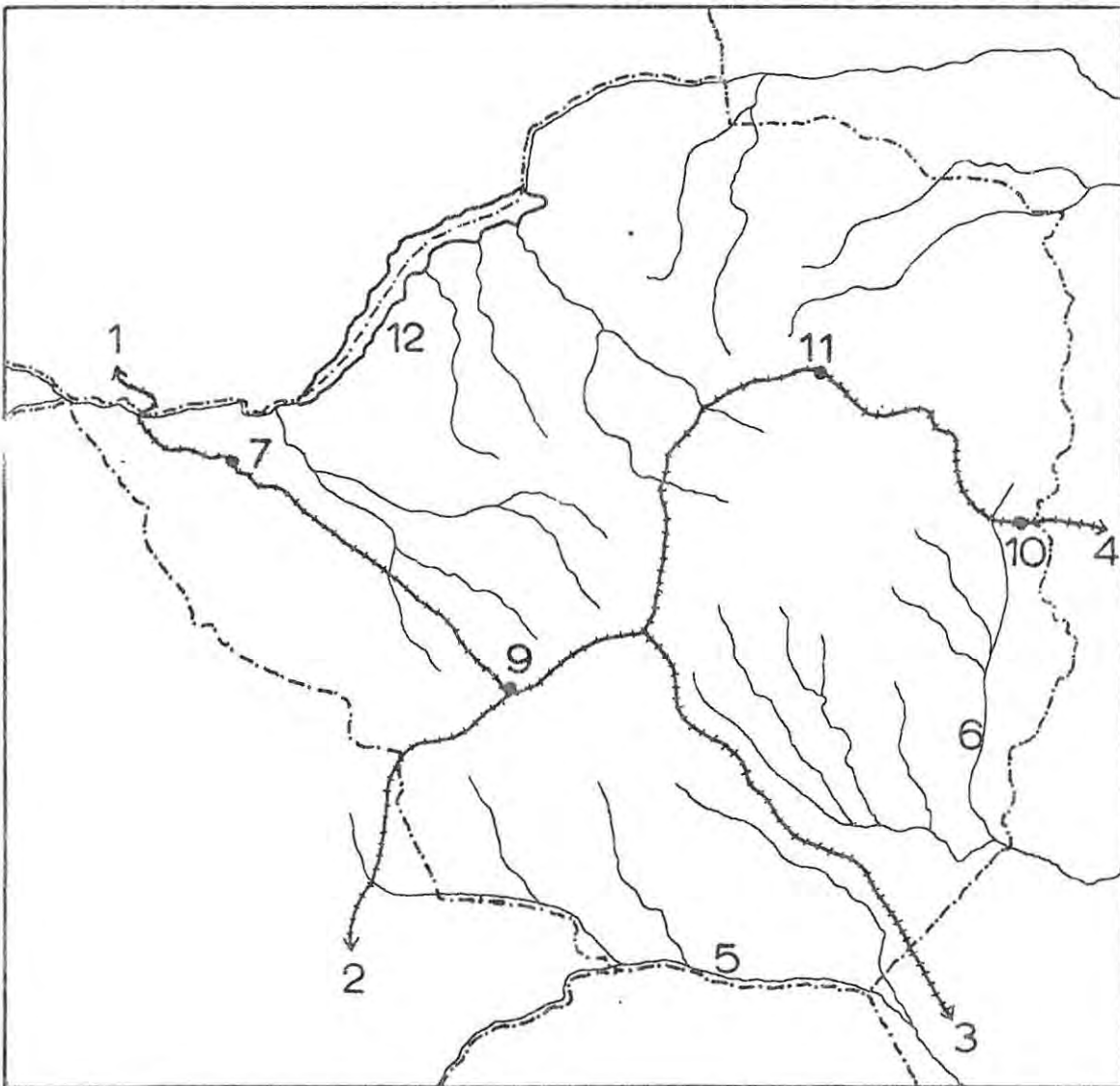
L.W.: PLAAS DIE VOLTOOIDE KAART BINNE-IN U ANTWOORDEBOEK

N.B.: PLACE THE COMPLETED MAP INSIDE YOUR ANSWER-BOOK

Eksamennummer
Examination number

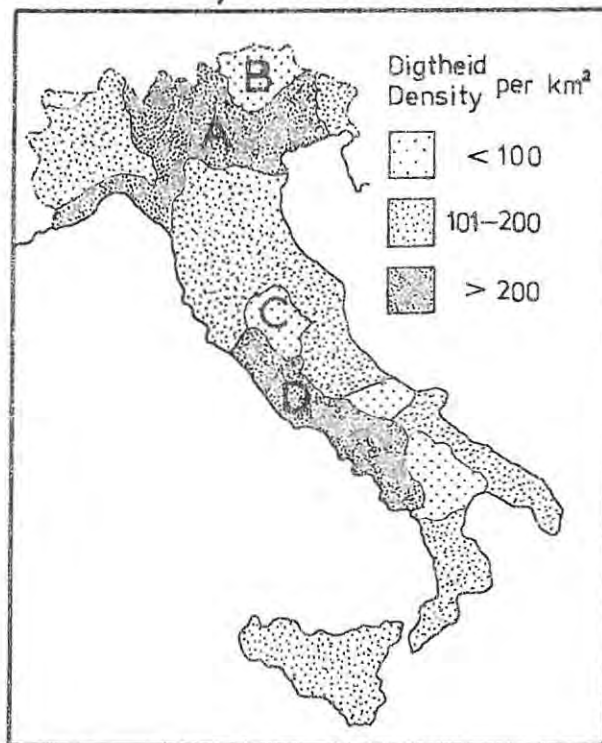
SENIOR SERTIFIKAAT / SENIOR CERTIFICATE 1975

QUESTION/VRAAG 8(a)



BLAAI OM ASSEBLIEF/PLEASE TURN OVER

VRAAG / QUESTION 11(a)



BLAAI OM ASSEBLIEF/PLEASE TURN OVER

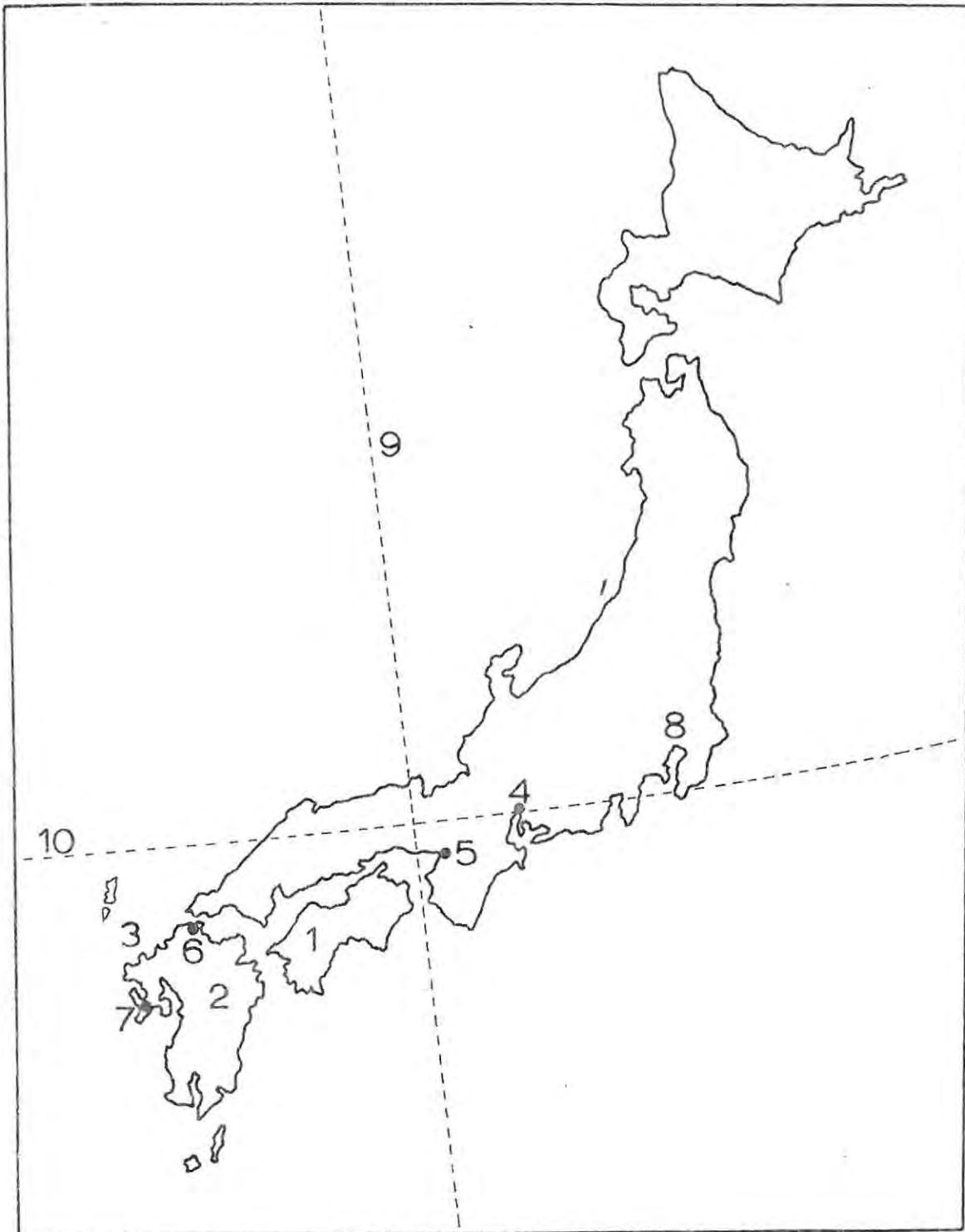
L.W.: PLAAS DIE VOLTOOIDE KAART BINNE-IN U ANTWOORDEBOEK

N.B.: PLACE THE COMPLETED MAP INSIDE YOUR ANSWER-BOOK

Eksamennommer
Examination number

SENIOR SERTIFIKAAT / SENIOR CERTIFICATE 1975

QUESTION/VRAAG 14 (a)



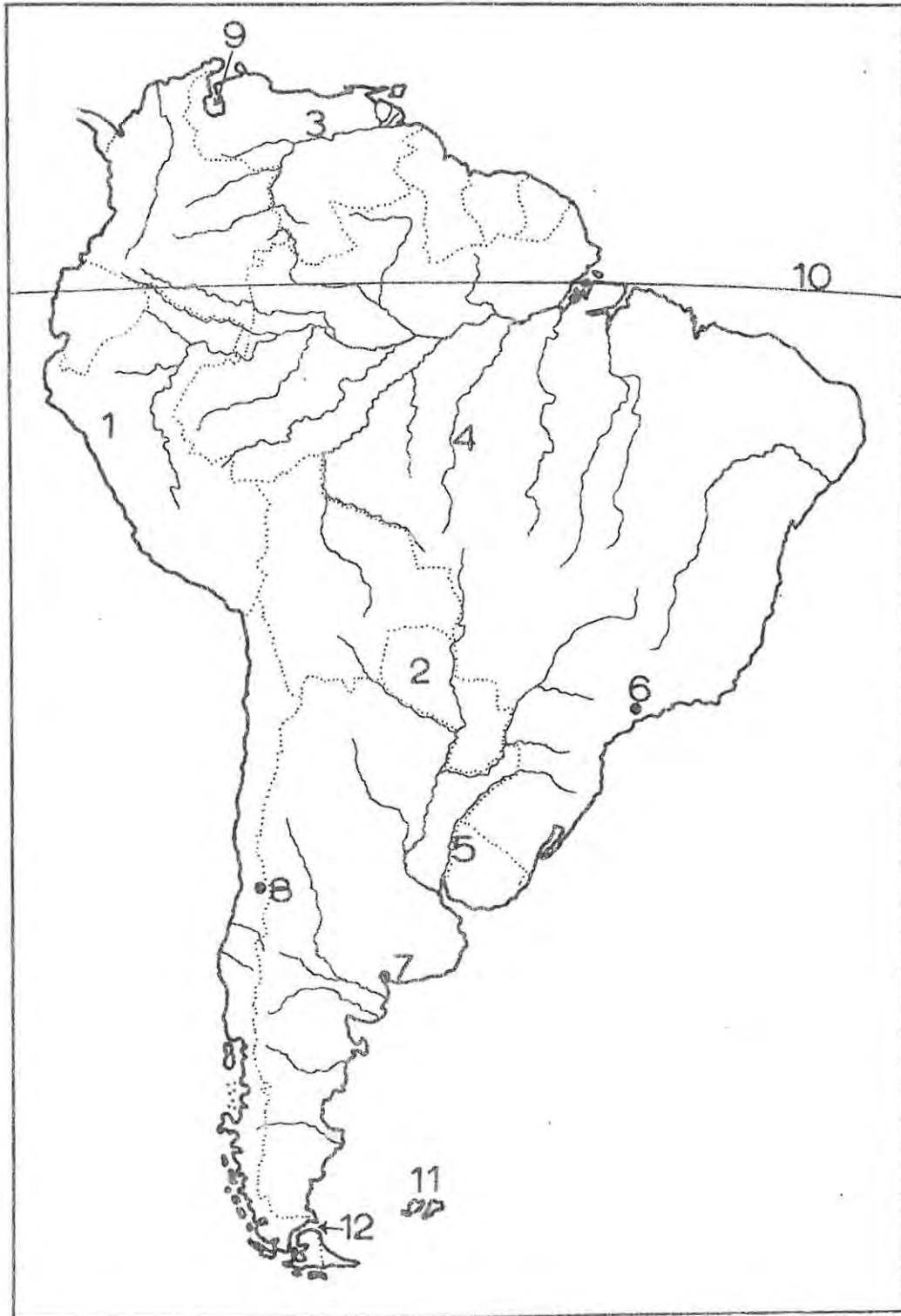
BLAAI OM ASSEBLIEF/PLEASE TURN OVER

L.W.: PLAAS DIE VOLTOOIDE KAART BINNE-IN U ANTWOORDEBOEK
N.B.: PLACE THE COMPLETED MAP INSIDE YOUR ANSWER-BOOK

Eksamennommer
Examination number

SENIOR SERTIFIKAAT / SENIOR CERTIFICATE 1975

VRAAG / QUESTION 16 (a)



GEOGRAPHY SG
(SECOND PAPER)

4
*

AARDRYKSKUNDE SG
(TWEEDE VRAESTEL)

1981

DEPARTMENT OF EDUCATION
CAPE OF GOOD HOPE

DEPARTEMENT VAN ONDERWYS
KAAP DIE GOEIE HOOP

SENIOR CERTIFICATE EXAMINATION
SENIOR SERTIFIKAAT-EKSAMEN

Write on the front cover of your answer-book, after the word "Subject" -

GEOGRAPHY STANDARD GRADE
(SECOND PAPER)

Skrif op die voor-buiteblad van u antwoordeboek, teenoor die woord "Vak" -

AARDRYKSKUNDE STANDAARD GRAAD
(TWEEDE VRAESTEL)

This examination paper consists of 19 pages
Hierdie vraestel bestaan uit 19 bladsye

PLEASE TURN OVER / BLAAI OM ASSEBLIEF

Time: Three hours

Answer FOUR questions chosen as follows:

ONE from Section A;

ONE from Section B;

ONE from Section C; and

ONE additional question to be chosen from any of the three sections.

Above each answer write the number of the question, exactly as it is indicated on the question paper.

Note that two marks are sometimes allocated for one fact. For example, if the mark allocation is $(3 \times 2 = 6)$ you should supply three facts for a total of six marks. If the mark has not been doubled, as in the case of (10) for instance, it means that one mark will be awarded for each fact.

When answering long questions, candidates can earn *additional* marks if they present a logical, neat and thorough answer which shows insight.

SECTION A. PHYSICAL GEOGRAPHY

At least ONE question must be answered from this section.
Please note that question 2 is of a composite nature.

Question 1:

Answer sections (a) and (b) and ONE of the remaining sections (c) and (d).

- (a) Study the accompanying map and diagram of a cloud type (Figure 1) and answer the following:
- (i) Name the type of rainfall associated with the cloud type in Figure 1. (1 x 2 = 2)
 - (ii) Where in South Africa is this type of rainfall most common? State only the appropriate letter A, B or C as shown on the map. (1 x 2 = 2)
 - (iii) State during which season this type of rainfall predominates at B. (1 x 2 = 2)
 - (iv) In addition to a suitable trigger action, name and briefly explain *three* climatic conditions which are essential for this type of precipitation to form. (3 x 2 = 6)
 - (v) State and briefly explain the trigger action which is chiefly responsible for this type of rainfall in each of the areas marked B and C on the map. (2 x 2 = 4)

- (vi) Discuss the air circulation in this specific type of cloud during its various stages of development. (4 x 2 = 8)

(24)

- (b) The following temperature statistics refer to two weather stations which are situated 10 km apart in the same South African city. Explain the factors which are responsible for the differences between the average annual temperatures of these two stations.

<u>Station</u>	<u>Location</u>	<u>Average annual temperature</u>	
A	city centre	17°C	
B	rural-urban fringe	15°C	(3 x 2 = 6)

Answer ONE of the following two sections (c) and (d).

- (c) (i) Study the accompanying contour map (Figure 2). Name the drainage pattern which predominates in each of the northern and southern parts of this area. (2 x 2 = 4)
- (ii) Briefly explain how certain geological structures can be responsible for each of the drainage patterns which occur in this area. (4 x 2 = 8)
- (iii) Supply a formula according to which the drainage density of the area in Figure 2 can be calculated. (2 x 2 = 4)
- (iv) Briefly explain how river capture has probably taken place in Figure 3. Also identify three typical landforms which have resulted from this river capture and indicate and name these landforms on the diagram. Place the completed diagram in your answer book. (7 x 2 = 14)
- (30)

OR

- (d) Study the plateau and canyon landscape in the field sketch in Figure 4. Explain both the origin and future development of this landscape and its typical landforms and slope types. Emphasise the geomorphological processes active in this area. (15 x 2 = 30)

/60/

Question 2:

- (a) Study the contour map of a valley in the foothills of the Natal Drakensberg (Figure 5).
- (i) How did the *aspect* of the valley influence the inhabitants to choose this particular site for their settlement? Answer in two or three lines only. (2 x 2 = 4)

- (ii) Name two ways in which the micro-climate has influenced the siting of the village at this particular *altitude*. (2 x 2 = 4)
- (iii) Give two reasons, other than micro-climatological reasons, why the village was possibly sited at this particular *altitude*. (2 x 2 = 4)
- (iv) Name the nocturnal wind which will be experienced in this village as a result of the relief of this area, and explain the origin and occurrence of this wind. (4 x 2 = 8)
- (20)
- (b) Study the accompanying synoptic weather chart (Figure 6) and answer the following:
- (i) Name the pressure system situated over the interior of South Africa. (1 x 2 = 2)
- (ii) During which season is this system best developed? (1 x 2 = 2)
- (iii) Complete: In the next 24 hours the general direction of air movement in the Eastern Cape will change from northwest to (1 x 2 = 2)
- (iv) Describe the air pressure and wind conditions which were experienced at 25° South 10° East at 14h00 on 1980-08-17. (3 x 2 = 6)
- (12)
- (c) (i) What does accelerated erosion mean? (1 x 2 = 2)
- (ii) Soil erosion by water occurs in three ways, each representing a different intensity. Name these three ways. (3 x 2 = 6)
- (iii) Explain the measures which can be taken by the individual agriculturalist or stock farmer to combat accelerated soil erosion. Refer to a specific product which you have studied, amongst others. (7 x 2 = 14)
- (iv) Name three measures which have been taken by the South African government to combat accelerated soil erosion. (3 x 2 = 6)
- (28)

/60/

SECTION B. SETTLEMENT GEOGRAPHY

At least ONE question must be answered from this section.

Question 3:

Study the accompanying urban maps (Figure 7) and answer the following:

- (a) (i) Briefly explain how relief has influenced the morphological shape of this town. (3 x 2 = 6)
- (ii) Name the enlarged street patterns numbered 1, 2 and 3. (3 x 2 = 6)
- (iii) Briefly explain why street pattern no. 1 is the most common street pattern found in the CBD of our cities. (3 x 2 = 6)
- (iv) What is the most important disadvantage of this type of street pattern (no. 1)? (1 x 2 = 2)
- (v) Name the type of industries which would predominate in the industrial area no. D and supply two examples of industries which would probably be found in this area. (3 x 2 = 6)
- (vi) Supply one reason for the location of industries at D, so close to the CBD. (1 x 2 = 2)
- (28)
- (b) The planned and controlled shopping centre at X on this map is a direct result of the migration of retail establishments away from the CBD.
- (i) Discuss the various factors which can be responsible for this migration of retail establishments away from the CBD of modern cities. (6 x 2 = 12)
- (ii) Discuss the typical characteristics of planned shopping centres like the one at X. Supply a few South African examples. (10 x 2 = 20)
- (32)

/60/

Question 4:

- (a) Study the accompanying map of settlement types (Figure 8). Supply the letter from the map which indicates each of the following settlement types or settlement patterns:
- specialized town
 - dispersed rural settlements
 - dispersed family hamlets
 - gap town
 - break-of-bulk point
 - linear rural settlement (6 x 2 = 12)
- (b) Discuss the social, cultural and economic advantages and disadvantages associated with the dispersed rural settlement type. (5 x 2 = 10)
- (c) Distinguish between a dry point settlement and a wet point settlement and give one example of each. (4 x 2 = 8)
- (d) Discuss the air pollution problem of South African cities and refer to the nature, extent, causes and results of this problem, as well as the measures taken to combat this type of pollution. (15 x 2 = 30)

/50/SECTION C. REGIONAL GEOGRAPHY

At least ONE question must be answered from this section.

Question 5:

- (a) "In 1980 the largest industrial undertaking ever to be attracted to a decentralized growth point in a South African national state, the Apex steel engineering group of companies, started moving their factory from Vereeniging to Isitebe, about midway between Durban and Richards Bay."
- (i) Name two reasons for the policy of decentralization which is being followed by the government. (2 x 2 = 4)
- (ii) Which incentives were probably offered by the state in order to attract industries to Isitebe? (4 x 2 = 8)
- (iii) Explain how the availability of water, steel castings, coal and labour has probably influenced the directors of Apex in their decision to move to Isitebe. (6 x 2 = 12)
- (iv) Name two similar industrial growth points in Transkei. (2 x 2 = 4)

(28)

MAPBOOK / KAARTBOEK

4(a)

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*

DEPARTEMENT VAN ONDERWYS
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SENIOR CERTIFICATE EXAMINATION
SENIOR SERTIFIKAAT-EKSAMEN

1981

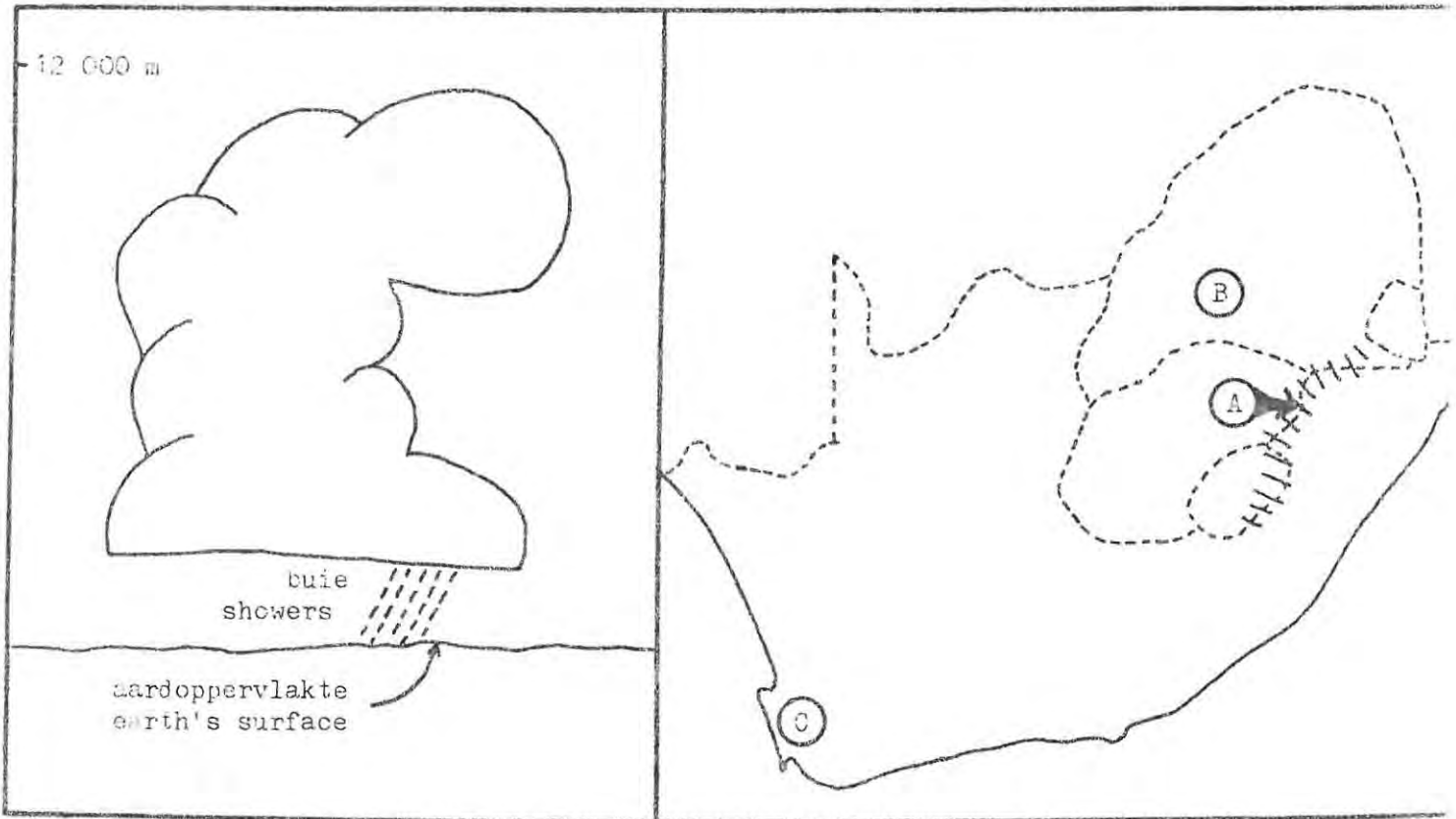
SUBJECT: GEOGRAPHY STANDARD GRADE

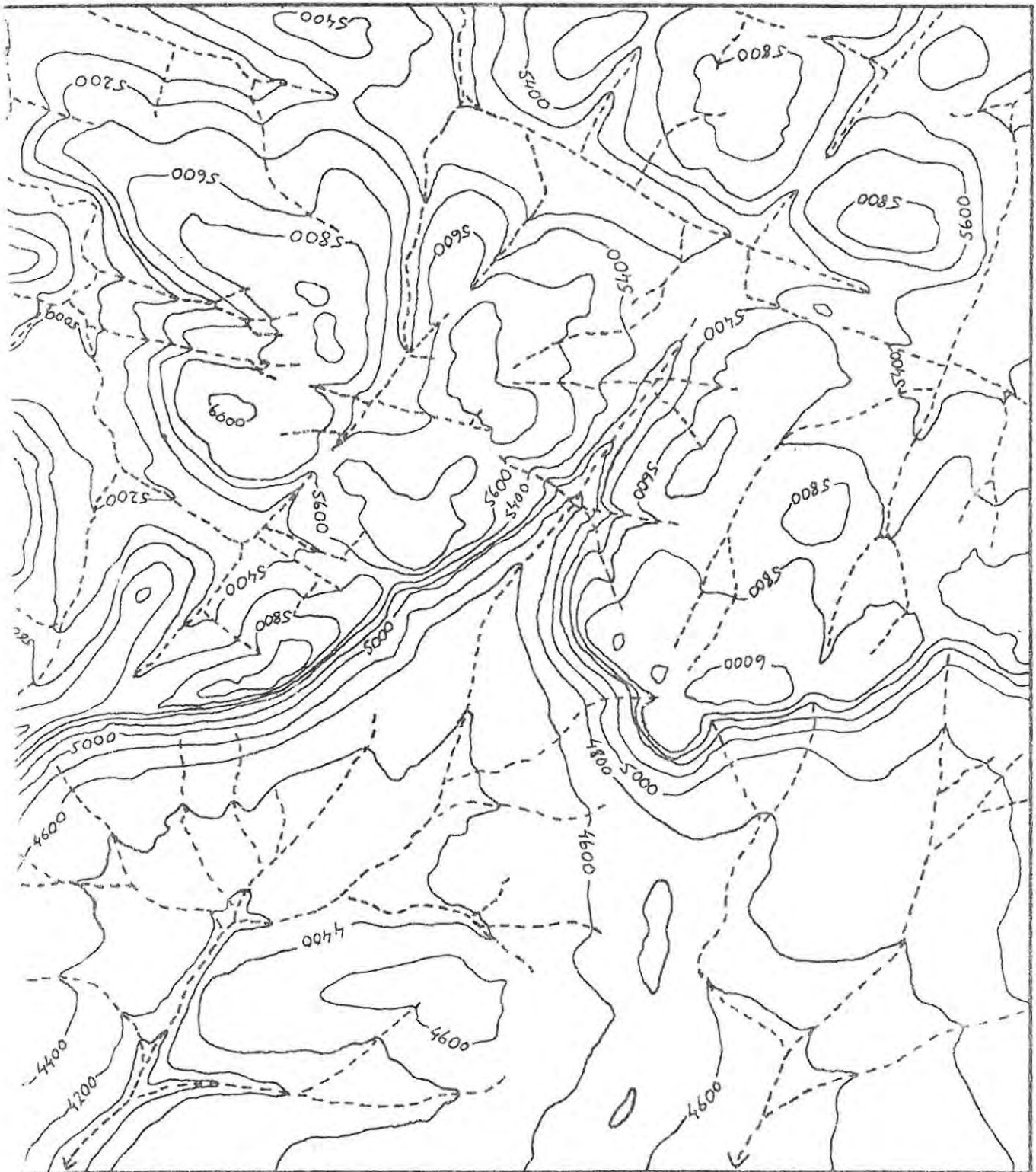
VAK: AARDRYKSKUNDE STANDAARD GRAAD

Only those maps and diagrams which are applicable to questions which have been answered, and on which you were requested to indicate certain features should be placed inside your answer-book.

Slegs daardie kaarte en diagramme wat betrekking het op vrae wat u beantwoord het en waarop u bepaalde besonderhede moes aandui, moet in u antwoordboek geplaas word.

PLEASE TURN OVER / BLAAI OM ASSEBLIEF



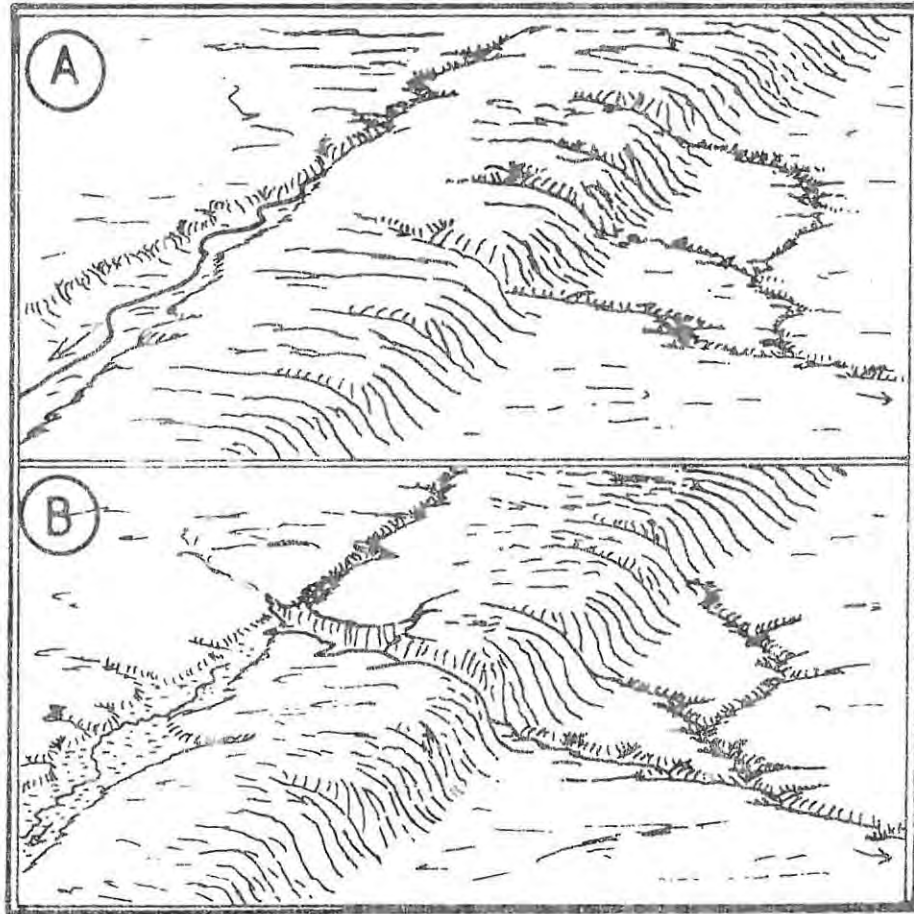


Scale / Skaal: 1:50 000

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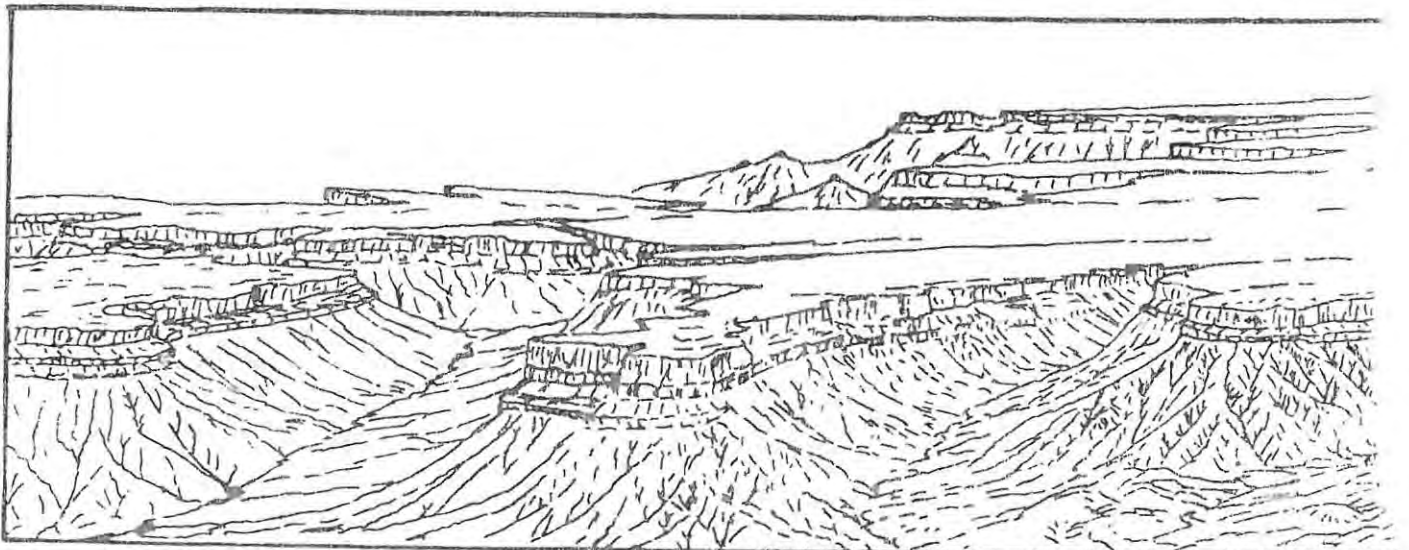
QUESTION 1(c) / VRAAG 1(c)

FIGURE 3 / FIGUUR 3



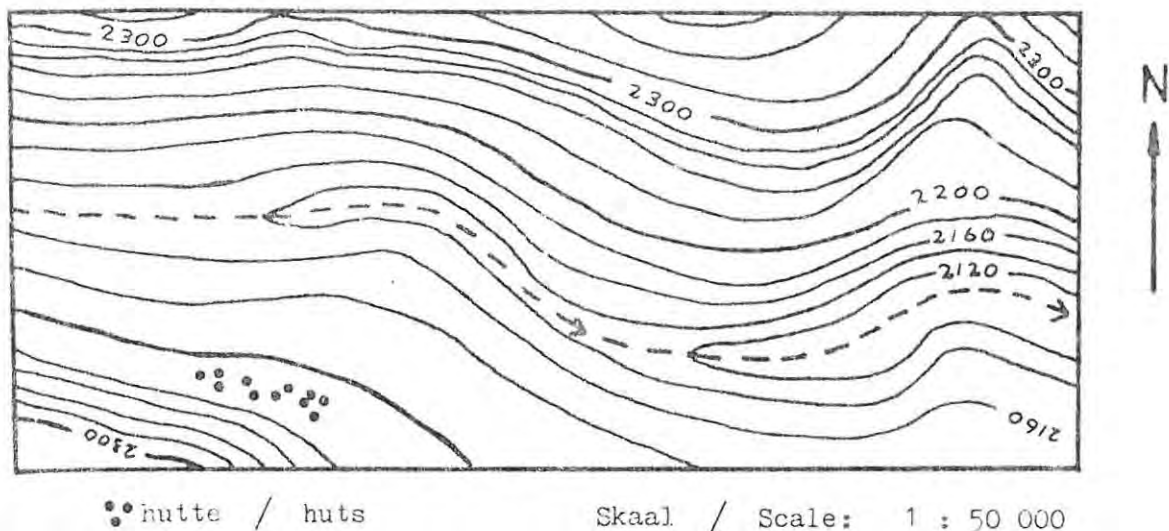
QUESTION 1(d) / VRAAG 1(d)

FIGURE 4 / FIGUUR 4



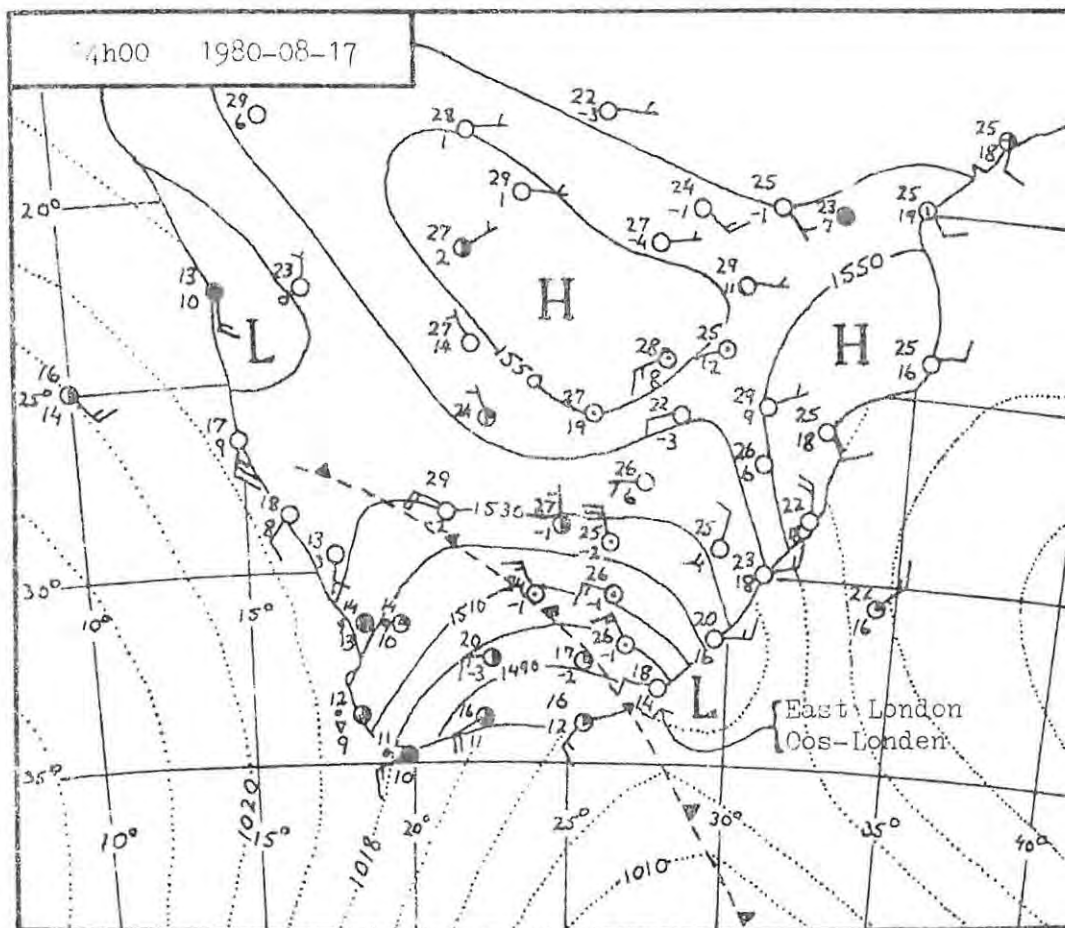
QUESTION 2(a) / VRAAG 2(a)

FIGURE 5 / FIGUUR 5



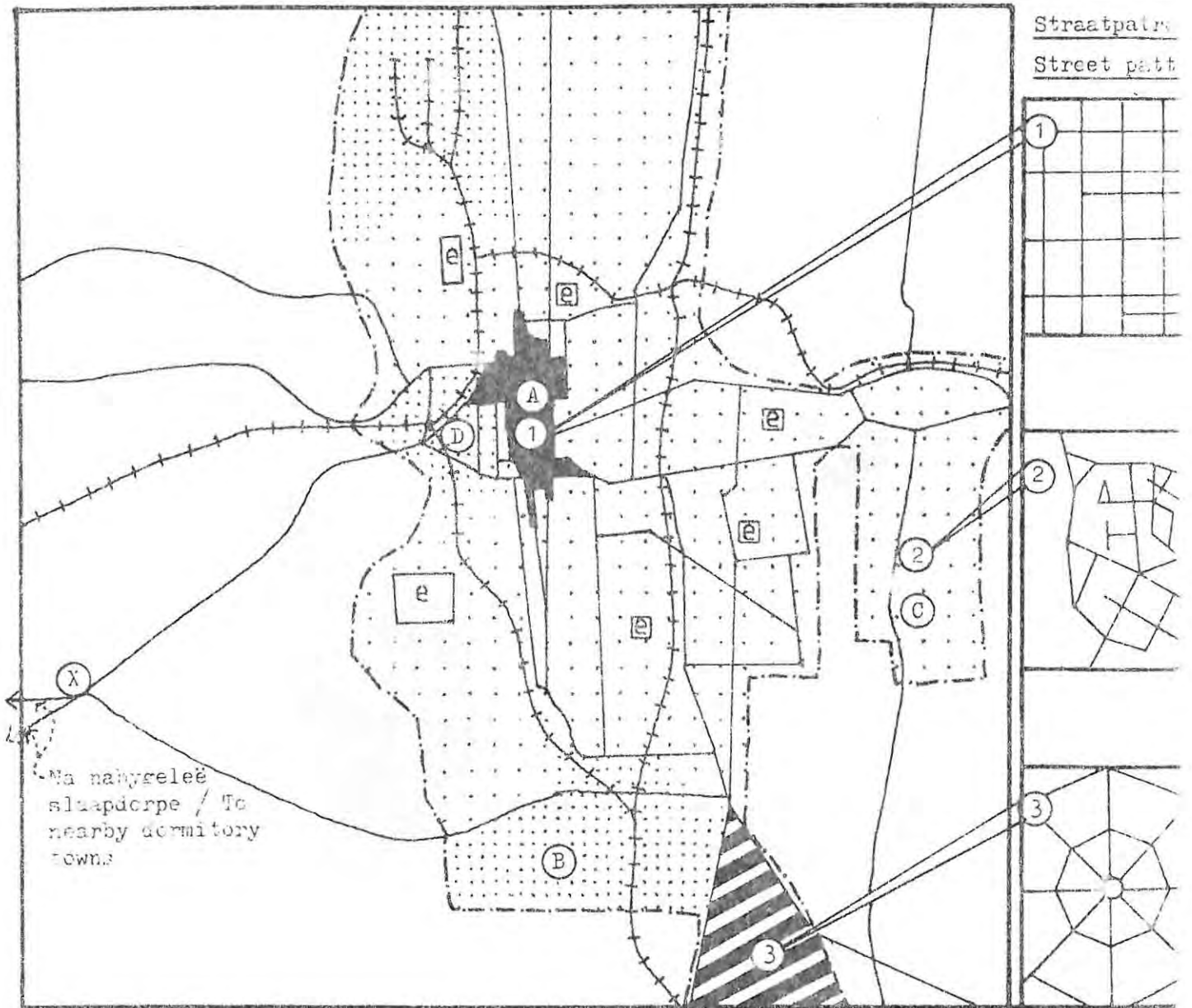
QUESTION 2(b) / VRAAG 2(b)

FIGURE 6 / FIGUUR 6



QUESTION 3(a) + (b) / VRAAG 3(a) + (b)

FIGURE 7 / FIGUUR 7



Straatpatroon
Street pattern

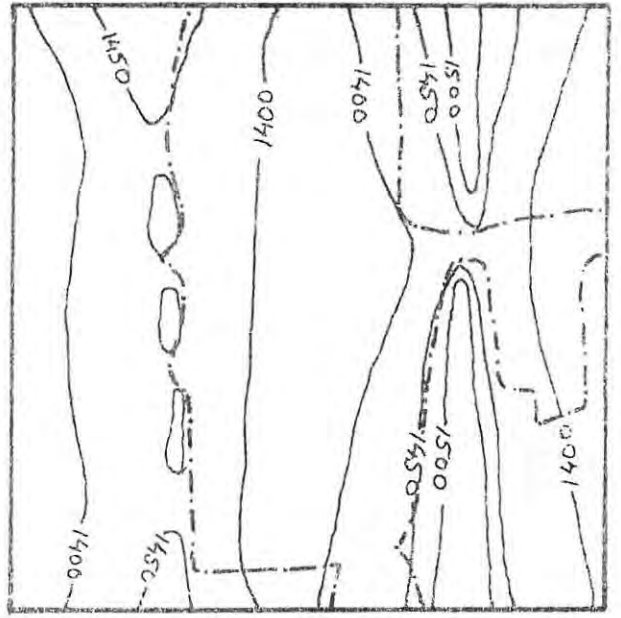


Na nabygeleë
sluapdorpe / To
nearby dormitory
towns

Kontoerkaart / Contour map:

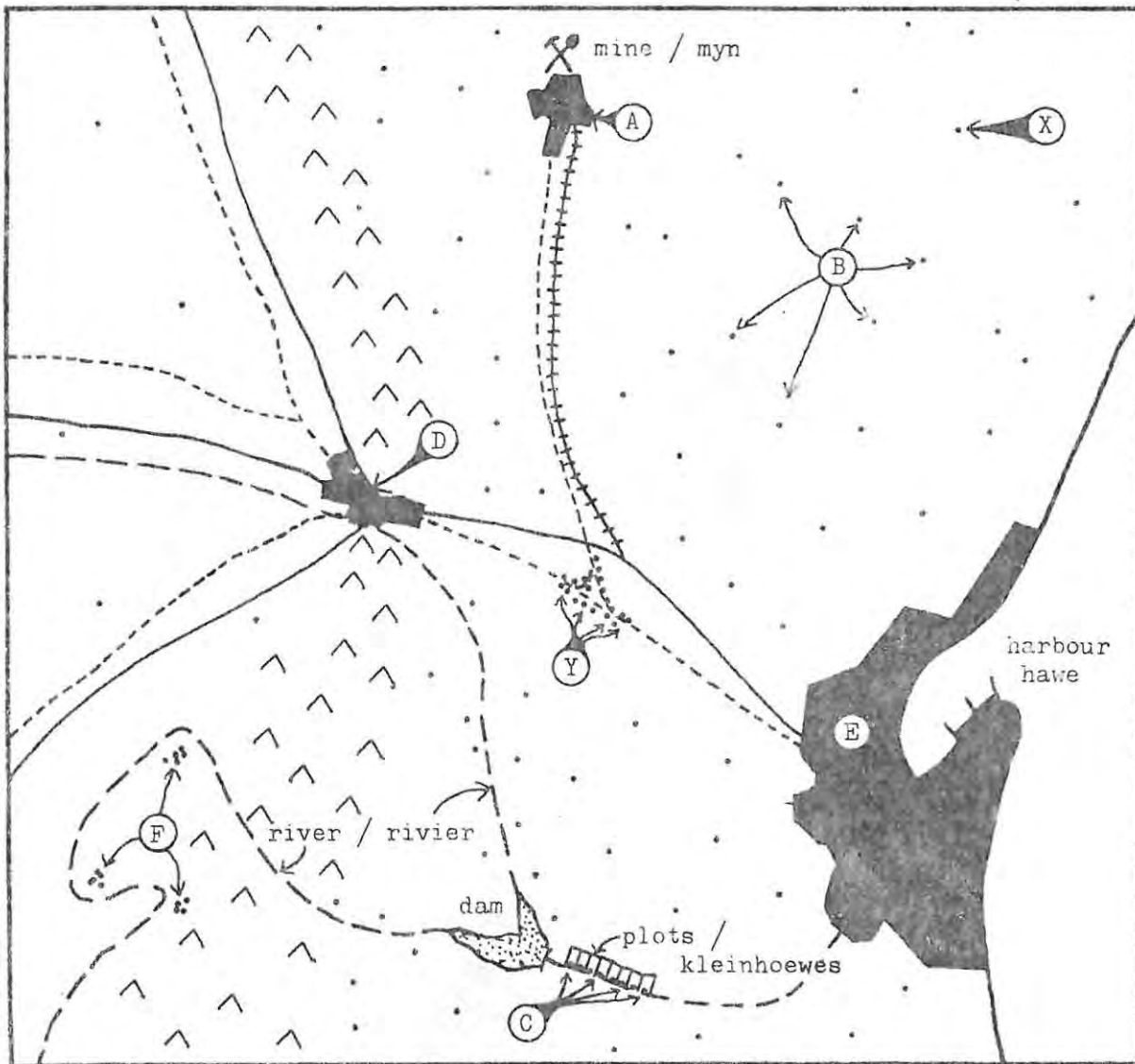
Slentel / Key:

	Stadsgrens City Boundary
	Hoofweë Main Roads
	Spoorweë Railroads
	Nywerhede Industries
	Blanke woonbuurte White residential area
	Swart woonbuurte Black residential area
	Kommersiële Commercial
	Opvoedkundig Educational



QUESTION 4(a) / VRAAG 4(a)

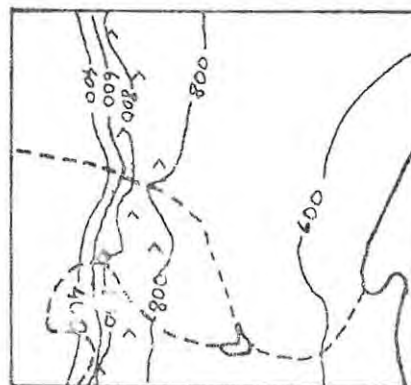
FIGURE 8 / FIGUUR 8



Sleutel / Key:

	Mountains Berge
	Roads Paaie
	Railways Spoorweë
	Service railway line Diensspoorlyn
	Rural settlements Landelike nedersettings
	Built-up area Beboude gebied

Isolieetkaart / Isohyet map:



Reënval in mm
Rainfall in mm

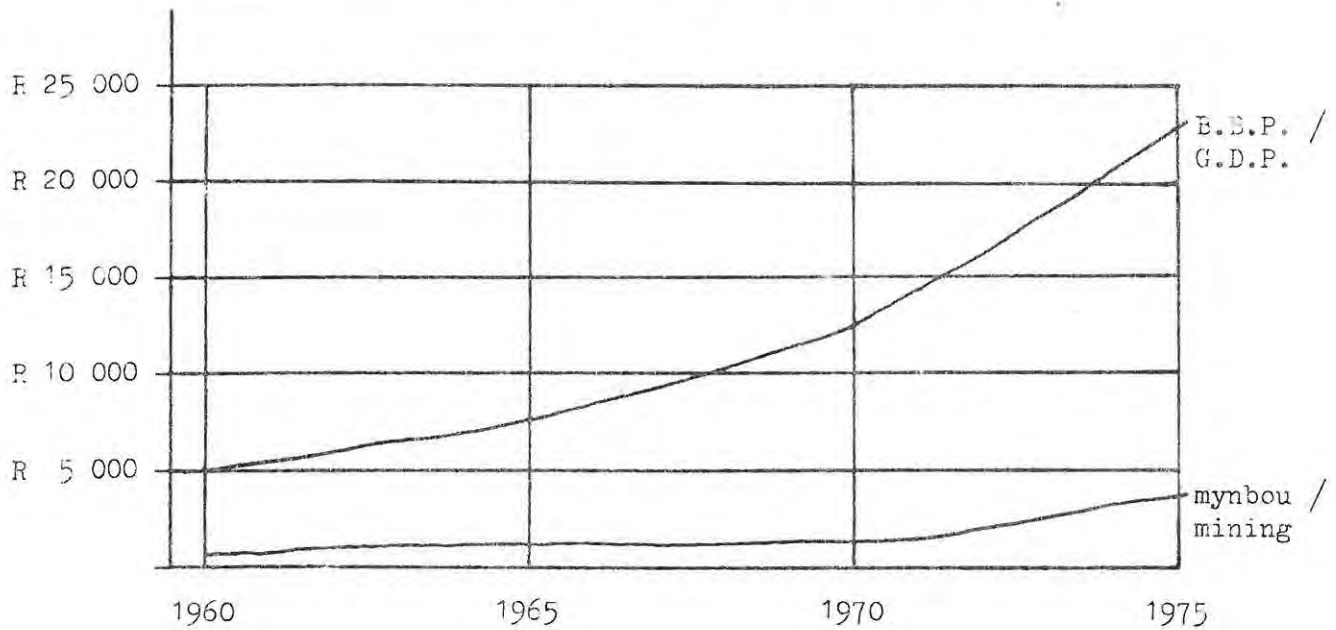
FIGURE 9 / FIGUR 9

1975 RESERVES / 1975 VOORRADE				SOUTH AFRICA SUID-AFRIKA	1975 PRODUCTION / 1975 PRODUKSIE			
Rank as a holder of world reserves and percentage of world's reserves Plek op wêreldranglys van voorrade en persentasie van wêreldvoorrade					Percentage of world production and rank as a world producer Persentasie van die wêreldproduksie en plek op die wêreldranglys van produsente			
1	5	10	15		15	10	5	1
1			49%	Goud / Gold	59%			
1			86%	Platinum	55%			1
1			64%	Vanadium	46%			1
1			83%	Chroom / Chrome	30%			2
1			48%	Mangaan / Manganese	24%			2
2			7%	Diamante / Diamonds	17%			3
4			17%	Uraan / Uranium	13%			3
5			10%	Asbes / Asbestos	10%			3
3			10%	Nikkel / Nickel	3%		7	
6			2%	Steenkool / Coal	2%		9	
4			8%	Fosfate / Phosphates	2%		10	
		15	1%	Tin	1%		11	
	10		2%	Koper / Copper	2%		12	
6			4%	Ystererts / Iron ore	1%		12	
5			4%	Lood / Lead	1%		41	

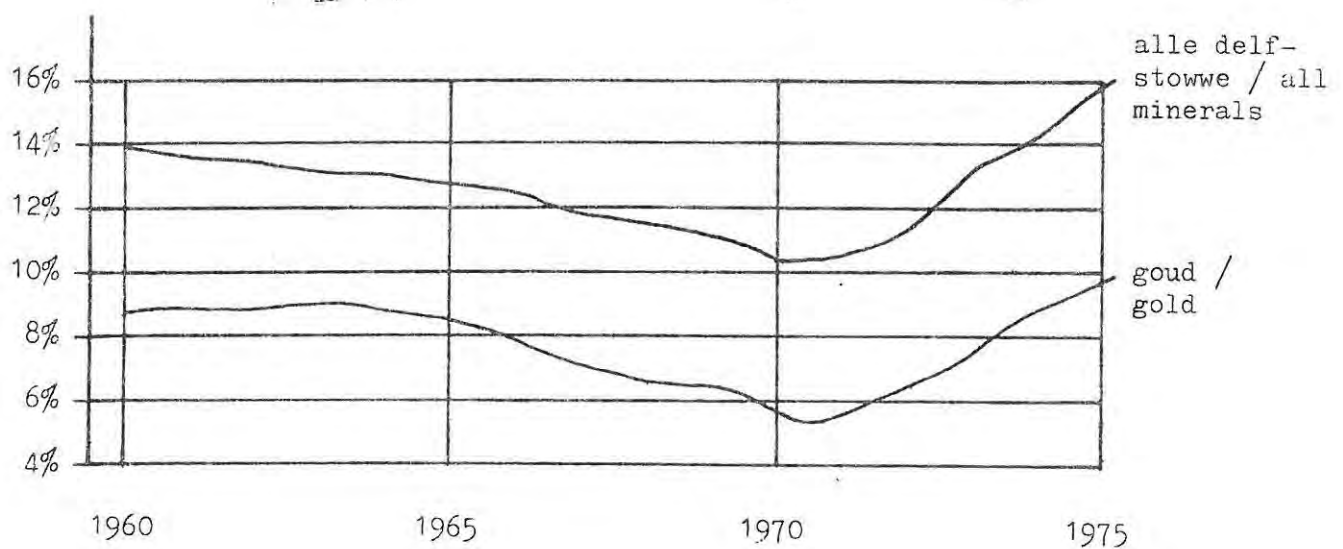
QUESTION 7(b) / VRAAG 7(b)

FIGURE 10 / FIGUUR 10

A. CONTRIBUTION OF MINING TO THE G.D.P. OF SOUTH AFRICA
BYDRAE VAN MYNBOU TOT DIE B.B.P. VAN SUID-AFRIKA

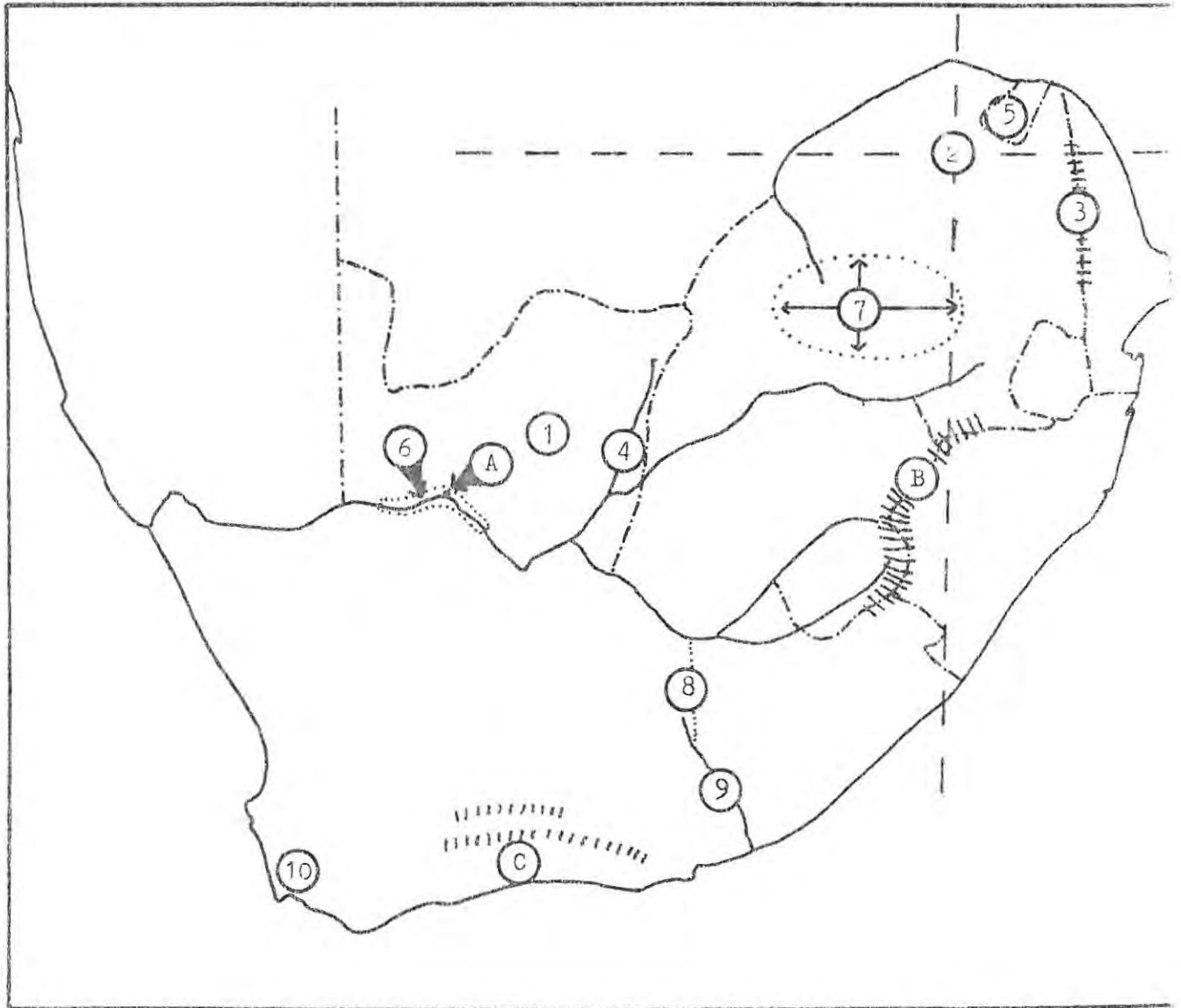


B. CONTRIBUTION OF MINING AS A PERCENTAGE OF THE SOUTH AFRICAN G.D.P.
BYDRAE VAN MYNBOU AS 'N PERSENTASIE VAN DIE SUID-AFRIKAANSE B.B.P.



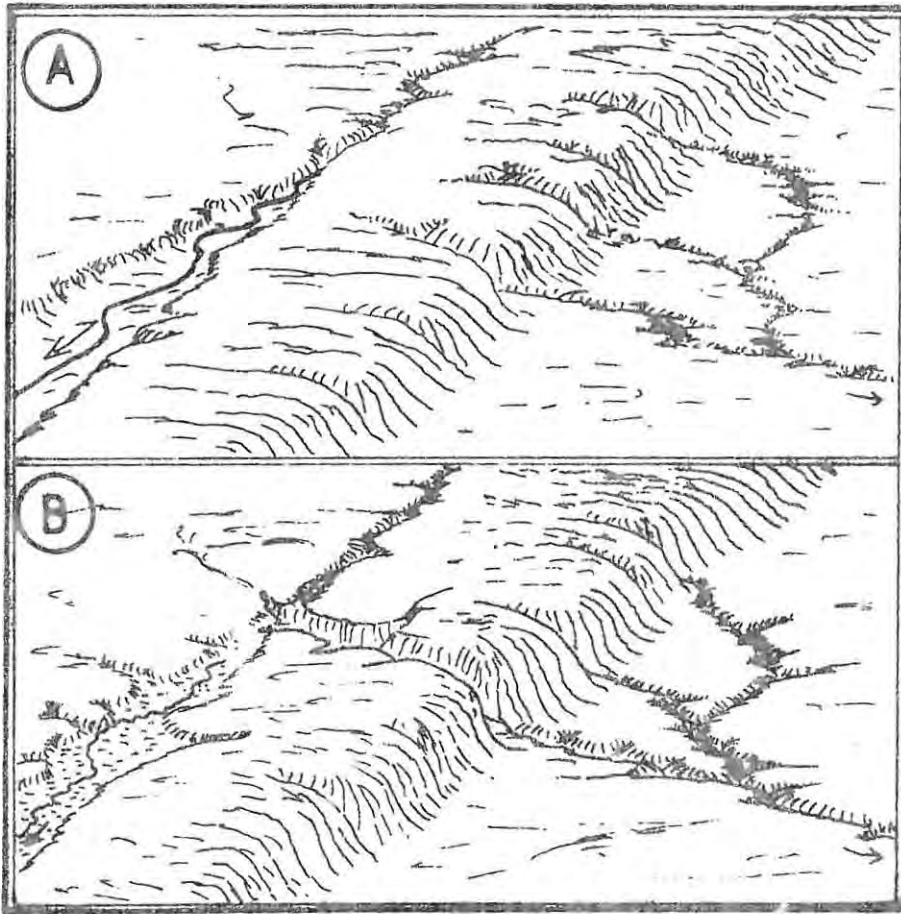
QUESTION 8(a) + (b) / VRAAG 8(a) + (b)

FIGURE 11 / FIGUUR 11



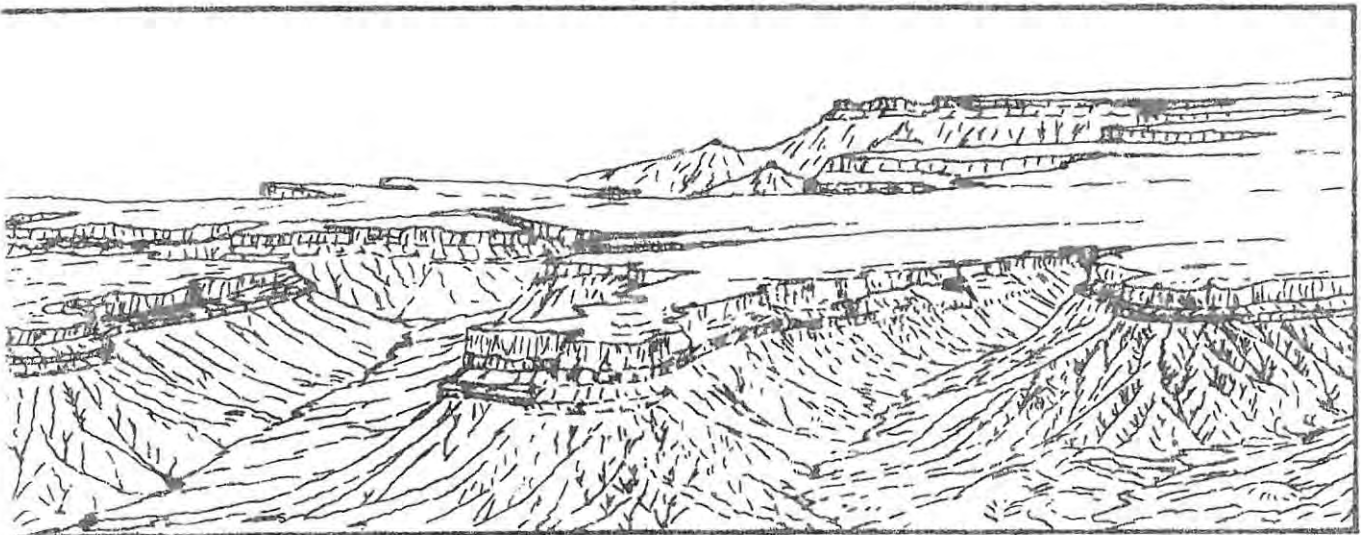
VRAAG 1(c) / QUESTION 1(c)

FIGUUR 3 / FIGURE 3



VRAAG 1(d) / QUESTION 1(d)

FIGUUR 4 / FIGURE 4



- (b) Discuss the importance of the Cape Town harbour for industrial development in the South Western Cape. Refer also to recent developments and problems in this regard. (5 x 2 = 10)
- (c) Name five unfavourable factors for industrial development in the South Western Cape. (5 x 2 = 10)
- (d) Name one important disadvantage for South African industries of:- (i) the local market and (ii) markets in the African states. (2 x 2 = 4)
- (e) Which one of the main South African industrial regions can be seen as ...
- (i) the hub of our iron and steel industry?
- (ii) the origin of our motor vehicle industry?
- (iii) our most important clothes and textiles manufacturing region?
- (iv) the soap centre of South Africa? (4 x 2 = 8)

/60/

Question 6:

- (a) Read the newspaper report which is quoted below and answer the following questions. The numbers in the text correspond to the numbers of the questions which refer to that particular section.
- "The success of the Sasol Projects of South Africa (i) has proved to the world that independence of crude oil is not merely a dream (ii). At this stage coal already supplies 77% of our energy requirements (iii) and this percentage will increase considerably on completion of the second and third Sasol factories (iv)-(v). Nuclear power can also serve as a substitute for crude oil (vi), but its potential is much less than that of coal ..."
- (i) Where does South Africa rank on the list of producers of oil from coal? (1 x 2 = 2)
- (ii) Name one reason why South Africa has to reduce her dependence on imported crude oil. (1 x 2 = 2)
- (iii) Apart from being an important source of energy as well as an industrial raw material, coal also serves as one of our most important exports. Give an account of a coal export project launched by the state. (4 x 2 = 8)
- (iv) Where are the Sasol 2 and 3 factories being erected? (1 x 2 = 2)

- (v) Supply an example of a factory in SasolLurg which is based on raw materials supplied by the Sasol factory. (1 x 2 = 2)
- (vi) Where is the first South African nuclear power station being constructed at present? (1 x 2 = 2)
- (18)
- (b) Supply one good reason for each of the following tendencies in South African farming:
- (i) the reduction in the number of farming units
- (ii) the fact that it was possible to increase the area under cultivation during the past few decades
- (iii) the fact that the increase in the gross income from farming has exceeded the increase in the volume of production during recent years
- (iv) the sharp increase in local food consumption
- (v) the fact that the number of labourers required has decreased considerably (5 x 2 = 10)
- (c) Supply three good reasons why it will be impossible to increase the production of South African farming spectacularly. (3 x 2 = 6)
- (d) Discuss the production of *ONE* of the following South African farming products and refer to the aspects mentioned in brackets, amongst others:
- (i) Wheat (importance, production regions, cultivation, problems)
- (ii) Citrus fruit (importance, requirements, production regions, marketing, problems)
- (iii) Beef farming (importance, nature, problems, breeds, beef cattle regions, marketing)
- (iv) Wool industry (importance, nature, problems, wool sheep regions, marketing)

(26)

/60/Question 7:

- (a) Study the accompanying columnar diagram (Figure 9) and answer the following:
- (i) According to this diagram the South African reserves of iron ore are relatively small, when compared to those of the rest of the world. Does this imply impending shortages in the near future? Motivate your answer in just one sentence. (2 x 2 = 4)

- (ii) What do you consider to be the most important deficiency in the South African mineral reserves? (1 x 2 = 2)
- (iii) This diagram clearly indicates South Africa's position as a mineral producer. Where does South Africa rank?
- one of the ten most important producers?
 - in the middle group of producers?
 - an unimportant producer? (1 x 2 = 2)
- (iv) Name five of the minerals in this diagram which serve as raw materials in our iron and steel industry. (5 x 2 = 10)
- (18)
- (b) Study the graphs in Figure 10 and answer the following:
- (i) In diagram B two definite tendencies are evident in the contribution of gold to the G.D.P. since 1960. What were these tendencies? Explain each in one sentence. (3 x 2 = 6)
- (ii) Both diagrams (A and B) indicate a change in the contribution of mining to our G.D.P. since 1971. State which change has occurred and explain this change. Supply examples where possible. (5 x 2 = 10)
- (iii) Describe the difference between the two growth rates in diagram A, and supply one good reason for this difference. (2 x 2 = 4)
- (20)
- (c) Define: G.D.P. (4)
- (d) Discuss the problems associated with any *two* of the following sectors of the South West Africa-Namibian economy:
- (i) manufacturing industries (9)
 - (ii) mining (9)
 - (iii) infrastructure (9)
- (18)

/60/

Question 8:

- (a) Study the map of South Africa (Figure 11) and name ...
1. the most important export harbour for the mineral mined at 1 (1 x 2 = 2)
 2. the line of longitude (1 x 2 = 2)
 3. the mountain range (1 x 2 = 2)
 4. the irrigation scheme (1 x 2 = 2)
 5. the independent homeland (1 x 2 = 2)
 6. the main reason for the concentration of population at 6 (1 x 2 = 2)
 7. the domal structural landscape (1 x 2 = 2)
 8. a tunnel transporting irrigation water (1 x 2 = 2)
 9. the river to which this tunnel (no. 8) transports irrigation water (1 x 2 = 2)
 10. two ways in which the vegetation at 10 has been adapted to the summer drought conditions (2 x 2 = 4)
- (22)
- (b) Which one of the locations A, B or C on this map (Figure 11) experiences ...
- (i) the highest incidence of frost conditions?
 - (ii) the highest summer temperatures?
 - (iii) rainfall throughout the year?
 - (iv) the highest relative rainfall variability? (4 x 2 = 8)
- (c) Explain the various ways in which man can alter the natural vegetation. Give South African examples of vegetational migrations. (6 x 2 = 12)
- (d) Explain the various ways in which South Africa's agricultural soil can be polluted. Supply examples where possible. (5 x 2 = 10)
- (e) Give an account of a project aimed at supplementing the water supply of the Vaal Dam from sources east of the escarpment. (4 x 2 = 8)

/60/

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GEOGRAPHY SG
(FIRST PAPER) (MAPWORL)

3

AARDRYKSKUNDE SG
(EERSTE VRAESTEL) (KAARTWERK)

1981

Examination number
Eksamennommer

Total marks: Puntetotaal:	
Symbol: Simbool:	
Examiner's initials: Eksaminator se paraaf:	
Examiner's number: Eksaminator se nommer:	

DEPARTMENT OF EDUCATION
CAPE OF GOOD HOPE

DEPARTEMENT VAN ONDERWYS
KAAP DIE GOEIE HOOP

SENIOR CERTIFICATE EXAMINATION
SENIOR SERTIFIKAAT-EKSAMEN

GEOGRAPHY STANDARD GRADE
(FIRST PAPER)

AARDRYKSKUNDE STANDAARD GRAAD
(EERSTE VRAESTEL)

This examination paper consists of 12 pages
Hierdie vraestel bestaan uit 12 bladsye

PLEASE TURN OVER / BLAAI OM ASSEBLIEF

Time: One hour

Read the following instructions carefully:

1. Write your examination number in the space on the front page of this question paper.
2. Study the extract of the South African 1:50 000 map sheet 2829 DB Ladysmith and the aerial photograph of a part of the same area, and answer the following questions.
3. Fill in your answers on this question paper.
4. All questions are compulsory but in question 6 you have a choice.
5. A blank page is supplied for calculations. (See page 12)

1. Indicate the correct or nearest correct answer to each of the following questions by drawing a cross in the appropriate square:

e.g. The scale of this map is

- (i) 1:5 000
 (ii) 1:50 000
 (iii) 1:500 000

X

- (a) The length of the multiple railway track from Ladysmith station to Glencoe is

- (i) 8 500 meters
 (ii) 36 000 meters
 (iii) 44 500 meters

(3)

- (b) The co-ordinates of trigonometrical beacon no. 29 on Lombardskop are

- (i) $29^{\circ}51'26''$ South, $28^{\circ}33'15''$ East
 (ii) $29^{\circ}51'26''$ East, $28^{\circ}33'15''$ South
 (iii) $30^{\circ}58'45''$ South, $28^{\circ}36'45''$ East

(3)

(c) The true bearing from spotheight 1118 (on Bell's Koppie, to the north of Ladysmith) to trigonometrical beacon 29 (on Lombardskop, to the east of the town) is

(i) $14^{\circ}30'$

(ii) $85^{\circ}06'$

(iii) $114^{\circ}30'$

(3)

(d) The present mean magnetic declination in this area is

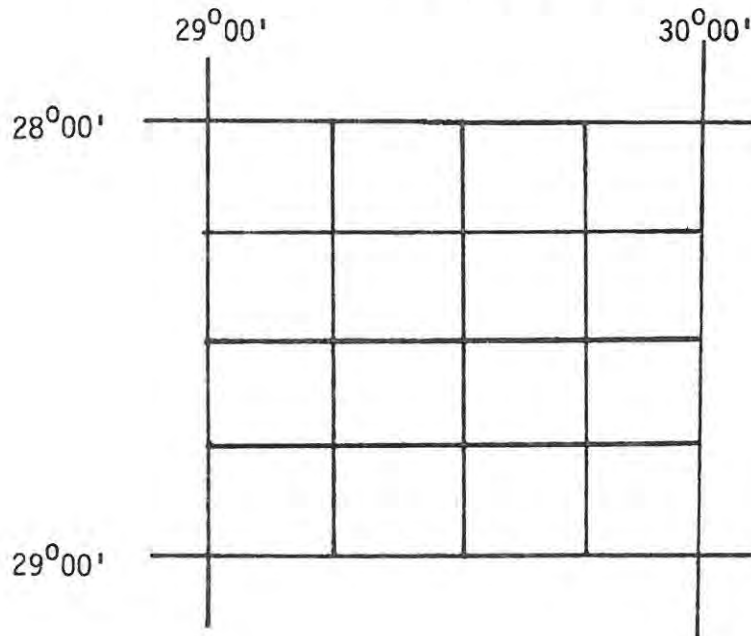
(i) $10'$ east

(ii) $19^{\circ}24'$ east of true north

(iii) $19^{\circ}14'$ west of true north

(3)

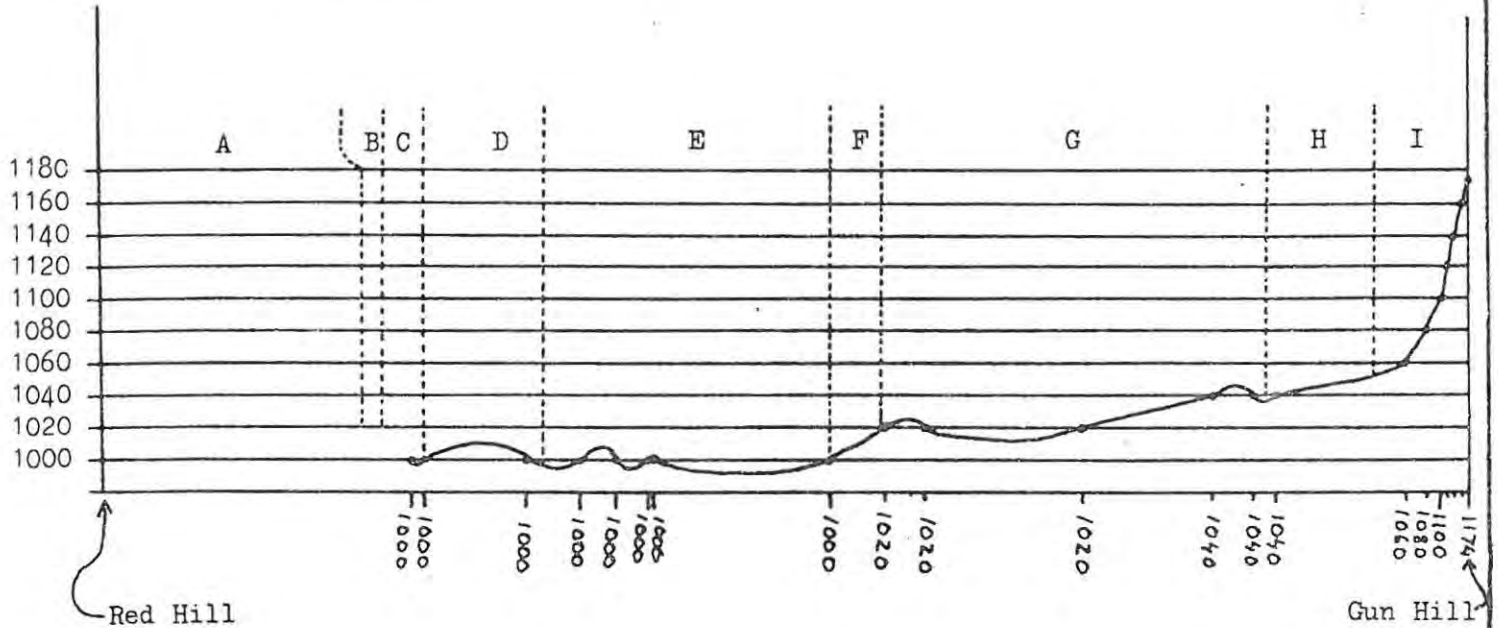
2. On the grid below indicate the appropriate square which would mark the situation of the map 2829 [3] Ladysmith:



(3)

3. The figure below is a cross section drawn from trigonometrical beacon no. 313 (on Red Hill, north of the main road to Colenso) to spotheight 1174 (on Gun Hill, approximately 5 km due east of Ladysmith).

Height in meters



- (a) Accurately draw the uncompleted section of the cross section. (3)
- (b) In each of the following cases state which letter indicates the position of that specific feature on the cross section:

- (i) a quarry
- (ii) a white residential area
- (iii) a black commuter town
- (iv) an area other than a built-up area, which is totally unsuitable for agriculture

(4 x 3 = 12)

4. Orientate the vertical aerial photograph and the map and answer the following:

(a) Name the type of vertical aerial photograph supplied.

(3)

(b) Identify the land-use type indicated by each of the following letters:

C. _____

D. _____

E. _____

(? x 3 = 9)

(c) Give one reason why the land-use type at C is situated on the outskirts of the town.

(3)

(d) Supply one reason why the suburb of Reservoir Hill cannot expand further southwards.

(3)

5. What proof is evident from the topography *and* drainage pattern that this area consists of horizontally aligned layers of varying resistance. In each case answer in one sentence only.

Topography: _____

(2)

Drainage pattern: _____

(2)

6. Answer only one of the following two sub-sections:

(a) Name the rural settlement pattern which predominates in the Ladysmith area, and explain why this pattern has been preferred.

Settlement pattern: _____ (2)

Reasons: _____

(3 x 2 = 6)

(b) Explain how modern engineering techniques overcame all the physical obstacles when the railway line from Ladysmith south-eastwards was constructed.

(4 x 2 = 8)

GEOGRAPHY HG
(SECOND PAPER)

AARDRYKSKUNDE HG
(TWEEDE VRAESTEL)

2
*

1981

DEPARTMENT OF EDUCATION
CAPE OF GOOD HOPE

DEPARTEMENT VAN ONDERWYS
KAAP DIE GOEIE HOOP

SENIOR CERTIFICATE EXAMINATION
SENIOR SERTIFIKAAT-EKSAMEN

Write on the front cover of your answer-book, after the word "Subject" -

GEOGRAPHY HIGHER GRADE
(SECOND PAPER)

Skryf op die voor-buiteblad van u antwoordeboek, teenoor die woord "Vak" -

AARDRYKSKUNDE HOËR GRAAD
(TWEEDE VRAESTEL)

This examination paper consists of 15 pages
Hierdie vraestel bestaan uit 15 bladsye

PLEASE TURN OVER / BLAAI OM ASSEBLIEF

Time: Three hours

READ THE INSTRUCTIONS CAREFULLY

1. Above each answer write the number of the question.
2. Begin each question on the TOP of a new page.
3. Answer FOUR questions: ONE from Section A
ONE from Section B
ONE from Section C
and ONE from any of the three Sections.
4. Credit will be given for sketch maps and illustrative diagrams. On these sketches do not repeat facts already given in your written answer.
5. In essay-type questions, credit will be given for insight, understanding, application and logical presentation of supplementary reading.

SECTION A. (PHYSICAL GEOGRAPHY)Answer at least *ONE* question from this section.QUESTION 1 (SYSTEMATIC)Answer sections (a) and (b) and *one* of the remaining sections (c) or (d).

- (a) Study the accompanying map and diagram of the type of cloud in Fig. 1, and answer the following:
- (i) Explain the climatic conditions which are essential for the formation of this specific cloud type at A (as indicated on the map 1(b)). (10)
 - (ii) During this specific stage of development of the cloud in fig. 1, much turbulence occurs because of air circulation. Describe and discuss the air circulation, and the types of precipitation that can result. (12)
 - (iii) Give two reasons why the type of precipitation associated with this type of cloud is not common at B in winter. (4)
- (b) The graph in Fig. 2 represents the meteorological data observed from weather stations within 10 km of the CBD of a South African city.
- (i) State how the temperature and the relative humidity vary in this city. (4)
 - (ii) Discuss the influence that the relative humidity of the atmosphere (as indicated on the graph) could possibly have on the precipitation and associated climatic phenomena in this city. (10)

Answer only *ONE* of the following two sections (c) or (d).

- (c) (i) Study the accompanying contour map (Figure 3). Name and discuss the drainage pattern in this area, and indicate how the underlying geological structure apparently influenced it.
- (ii) Briefly explain how you would set about determining the drainage density of this area.
- (iii) Study the accompanying two sketches of successive stages in the development of a receding-escarpment (Figure 4). Explain how the landscape in B developed from stage A, and point out the typical landforms that have resulted. Indicate and label on the diagram these typical landforms, and place the completed sketch in your answer book.

OR

- (d) Study the landscape that is illustrated in the field sketch in Figure 5. Explain how this landscape and its typical landforms and slope forms apparently originated, and how it could possibly develop further: Commence with the words:

"Originally horizontal layers of sandstone and shale were deposited below sea level".

Emphasize the geomorphological processes.

/80/

QUESTION 2 - (COMPOSITE)

- (a) Study the contour map of a valley in the foothills of the Drakensberg in Natal (Fig. 6). Describe and account for the temperature conditions prevailing in this valley, and describe their influence on the siting of the settlement.
- (b) Study the accompanying synoptic weather chart (Fig. 7) and describe and explain the changes in air temperature, air pressure, winds and rainfall that East London would probably have experienced in the following 24 hours.
- (c) Briefly explain the effect that high temperature and precipitation in the Lowveld probably have on soil formation in this region.
- (d) Explain how climate, vegetation and farming-activities contribute to accelerated erosion in the western region of the Central Plateau.

/80/

SECTION B - (SETTLEMENT GEOGRAPHY)

Answer at least *ONE* question from this section.

QUESTION 3

Question 3(a) and 3(b) refer to the information relating to a modern South African city (Figure 8). Study Figure 8 and answer the following questions:-

- (a) (i) Briefly describe how the physical factors have determined the *location* and the *shape* of this city. (10)
- (ii) Identify the enlarged street patterns numbered 1, 2 and 3 and discuss possible reasons for their occurrence in each of the specific land use zones. (16)
- (iii) Account for the location of the various land use zones shown by the letters A, B and C on the map of the city and clearly indicate how their characteristic features influence their location. (12)
- (iv) There is evidence of functional differentiation in this modern city. Identify four different types of nuclei or growth points in this city around which urban expansion could have taken place in terms of the Harris-Ullman model of urban structure. (16)
- (b) (i) Identify the forces which could have attracted a large retail establishment to C. (8)
- (ii) The modern trend is to construct shopping complexes similar to that located at X in the larger South African cities. Discuss the characteristic features and the possible reasons for its location. (18)

/80/

QUESTION 4

- (a) All the questions refer to the accompanying maps on Figure 9.
- (i) Identify the settlement types and patterns shown on the map giving reasons for your choice. Make use of the symbols on the map in your answer. (18)
- (ii) Compare and discuss the social, cultural and economic aspects that could influence the inhabitants living in settlement types as shown at X and Y. (18)
- (b) Describe and discuss how availability of water can affect rural settlements. Make use of South African examples where applicable. (22)

(c) Discuss the following statement:-

Apart from some types of pollution which could be of a temporary nature, there are many instances in the rural-urban fringe where the environment has been permanently destroyed. (22)

/80/

SECTION C - (REGIONAL GEOGRAPHY)

Answer at least *ONE* question from this section.

QUESTION 5

- (a) "The largest industrial venture that has to-date transferred to a decentralized growth point in a South African national state, namely the Apex-Group of Steel - engineering companies, began in 1980, to move from Vereniging to Isitebe, approximately halfway between Durban and Richards Bay."
- (i) Name three types of industrial growth points that have been proclaimed in South Africa as part of the industrial decentralization policy. Give an example of each as found in both the Cape Province and in Natal. (12)
- (ii) "South Africa's policy of industrial decentralization is based on *economic* and *strategic* principles." Explain what is meant by this statement and point out why industrial centralization is disadvantageous for South Africa. (20)
- (iii) Which economic factors, other than the incentives offered by the State, could possibly have favoured the siting of the Apex Steel Engineering Company at Isitebe? (18)
- (b) Discuss the factors that hamper industrial development in the South Western Cape and mention recent developments that have slightly alleviated some of these disadvantages. (20)
- (c) Name five reasons why progress in the industrial sector of the South Africa economy has been so slow. (10)

/80/

QUESTION 6

- (a) Read the newspaper article below and answer the questions that follow. The numbers in the text correspond with the numbers of the questions which relate to relevant sections.

Osaka, Japan. 13 November 1980:

South Africa's success with its Sasol projects serves as a striking example (i) to the rest of the world that being independent of crude oil is no idle dream. This was said here at the 35th World Conference of Jaycee, by Mr Alphons Hough, the Managing Director of a large South African Oil Company.

According to Mr Hough South Africa could in the future be totally independent of imported crude oil (ii). Coal already fulfils 77% of South African energy needs. (iii) (iv). When Sasol 2 and Sasol 3 (v) (vi) are in full production the two installations would, according to Mr Hough, be able to provide considerably more of South Africa's fuel requirements.

Nuclear power (vii) also offers many opportunities as a substitute for crude oil, but opportunities for utilization thereof are limited

- (i) Provide one reason why South Africa can rightly claim that she is in this respect an example to the rest of the world. (2)
- (ii) Give two reasons why South Africa must decrease her dependence on imported crude oil. (4)
- (iii) Besides being a source of energy and raw material for industries, coal is also a large source for foreign capital. Outline a project which the state has undertaken for using coal to earn foreign capital. (12)
- (iv) Where are Sasol 2 and 3 being constructed? (2)
- (v) Name four factors that favour their siting here. (8)
- (vi) Give an example of a factory that could possibly be established in this area as a direct result of the presence of the Sasol factories. (2)
- (vii) Where is South Africa's first nuclear power-station being constructed? (2)
- (viii) Name two disadvantages related to the establishment of nuclear power-stations as opposed to that of thermal stations. (4)

- (b) At present an agricultural revolution is taking place in South Africa, and already important changes have taken place in the nature of our farming. Discuss these changes and stress the consequences that these hold for the future.
- (c) Choose one of the South African agricultural products which you have studied this year and give an explanation of the problems which farmers experience in this activity.

/80/QUESTION 7

- (a) Study the accompanying map of South Africa (Figure 10) and answer the following questions:
- (i) Name the isohyet shown on the map (number (i)). What significance has this for agriculture in South Africa?
 - (ii) Which one of the areas (A, B or C) would receive the most frost?
 - (iii) Explain why the rainfall at D is of greater value to agriculture than an equivalent amount at E.
 - (iv) Which one place (D, E, F or B) apparently experiences the smallest seasonal variation in precipitation?
 - (v) Which one place (D, E, F or B) apparently experiences the largest diurnal temperature range?
 - (vi) Which one place (A, B, F or G) apparently experiences the greatest relative rainfall variability?
 - (vii) Which one place (C, G, A or B) apparently experiences the highest summer temperatures?
 - (viii) Which one place (B, D, E or G) apparently experiences the most sunshine hours?
 - (ix) Name the type of natural vegetation at D. Explain how this natural vegetation is adapted to the precipitation of the region.

1981

2(a)



MAPBOOK / KAARTBOEK

DEPARTMENT OF EDUCATION
CAPE OF GOOD HOPEDEPARTEMENT VAN ONDERWYS
KAAP DIE GOEIE HOOP

SENIOR CERTIFICATE EXAMINATION
SENIOR SERTIFIKAAT-EKSAMEN

SUBJECT: GEOGRAPHY HIGHER GRADE

VAK: AARDRYKSKUNDE HOËR GRAAD

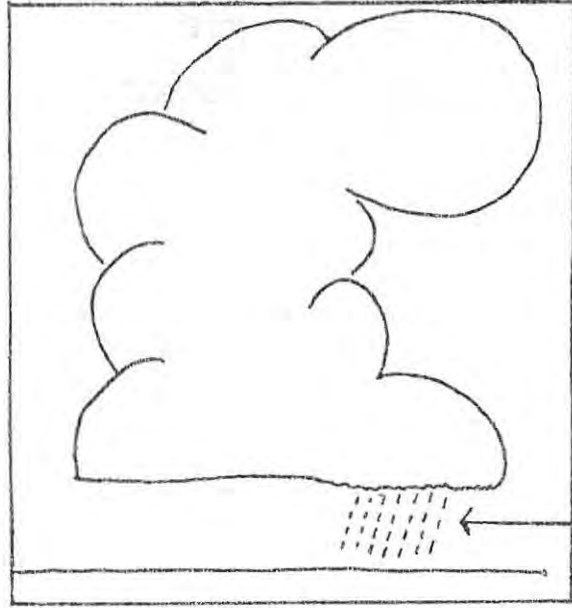
Only those map(s) which are applicable to questions which have been answered should be placed inside your answer-book.

Slegs daardie kaart(e) wat van toepassing is op vrae wat beantwoord is, moet in u antwoordeboek geplaas word.

PLEASE TURN OVER / BLAAI OM ASSEBLIEF

FIGURE 1
FIGUUR 1

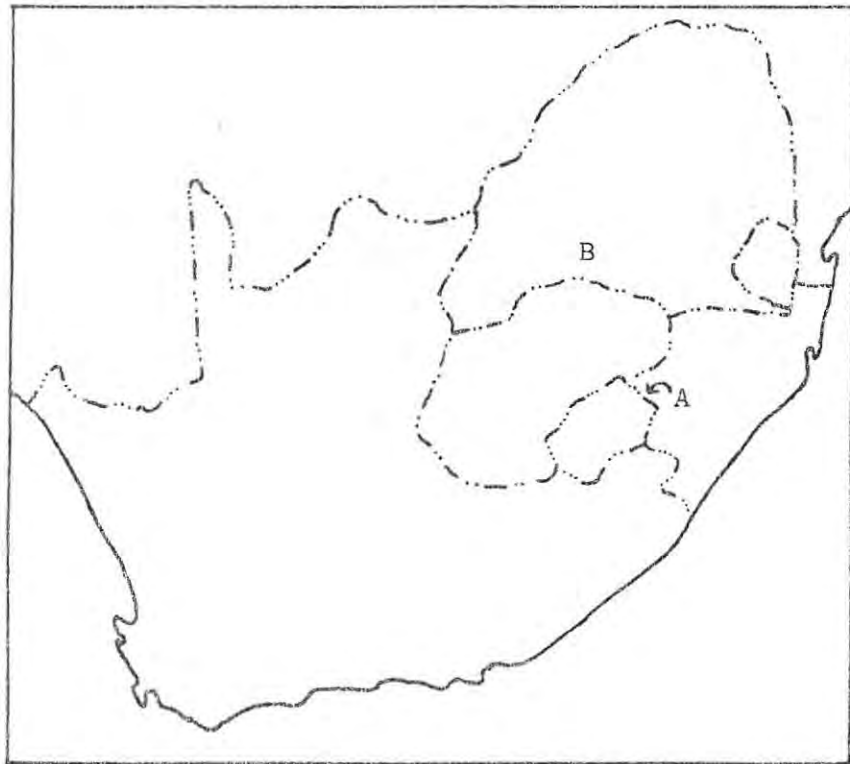
(a)



Precipitation
Neerslag

DIAGRAM: CLOUD TYPE
DIAGRAM: WOLK TIPE

(b)



MAP OF REPUBLIC OF SOUTH AFRICA
KAART VAN REPUBLIEK VAN SUID-AFRIKA

SECTION A
Question 1(b)
FIGURE 2

AFDELING A 2(a)(2)
Vraag 1(b)
FIGUUR 2

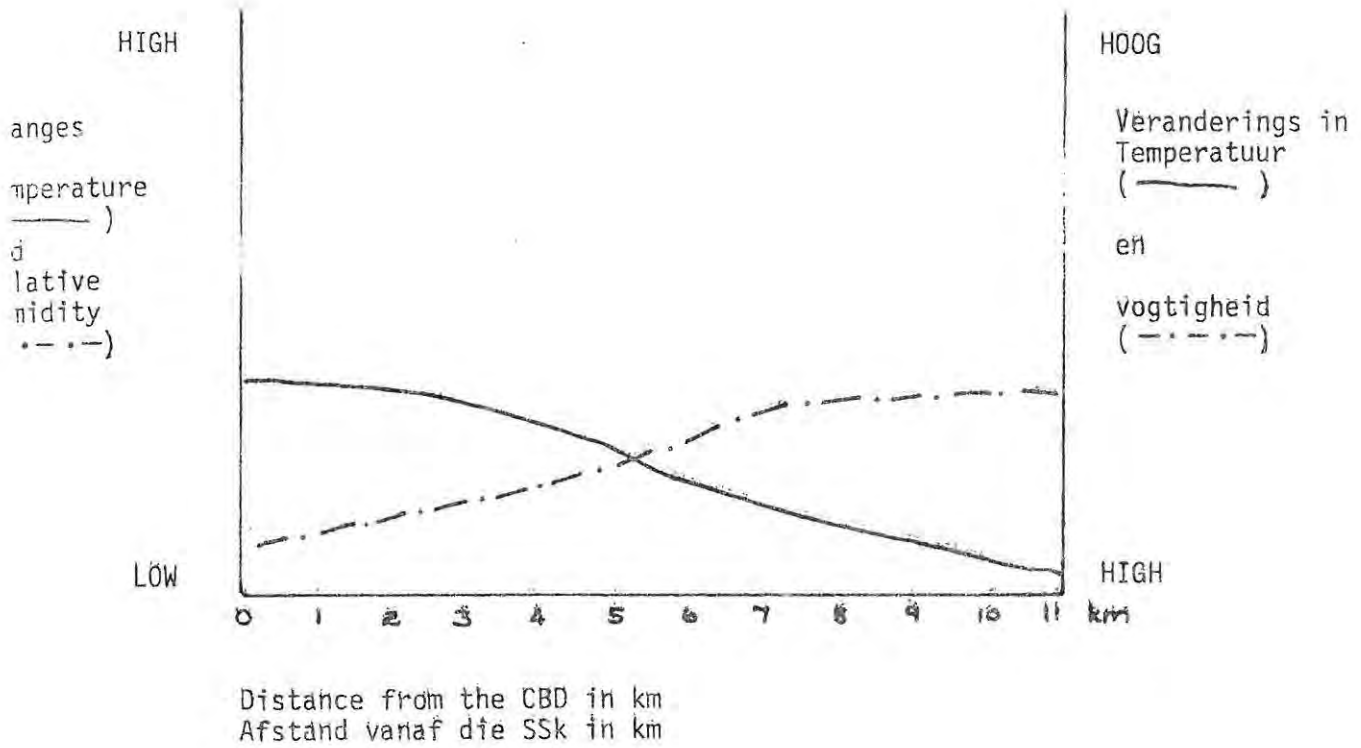
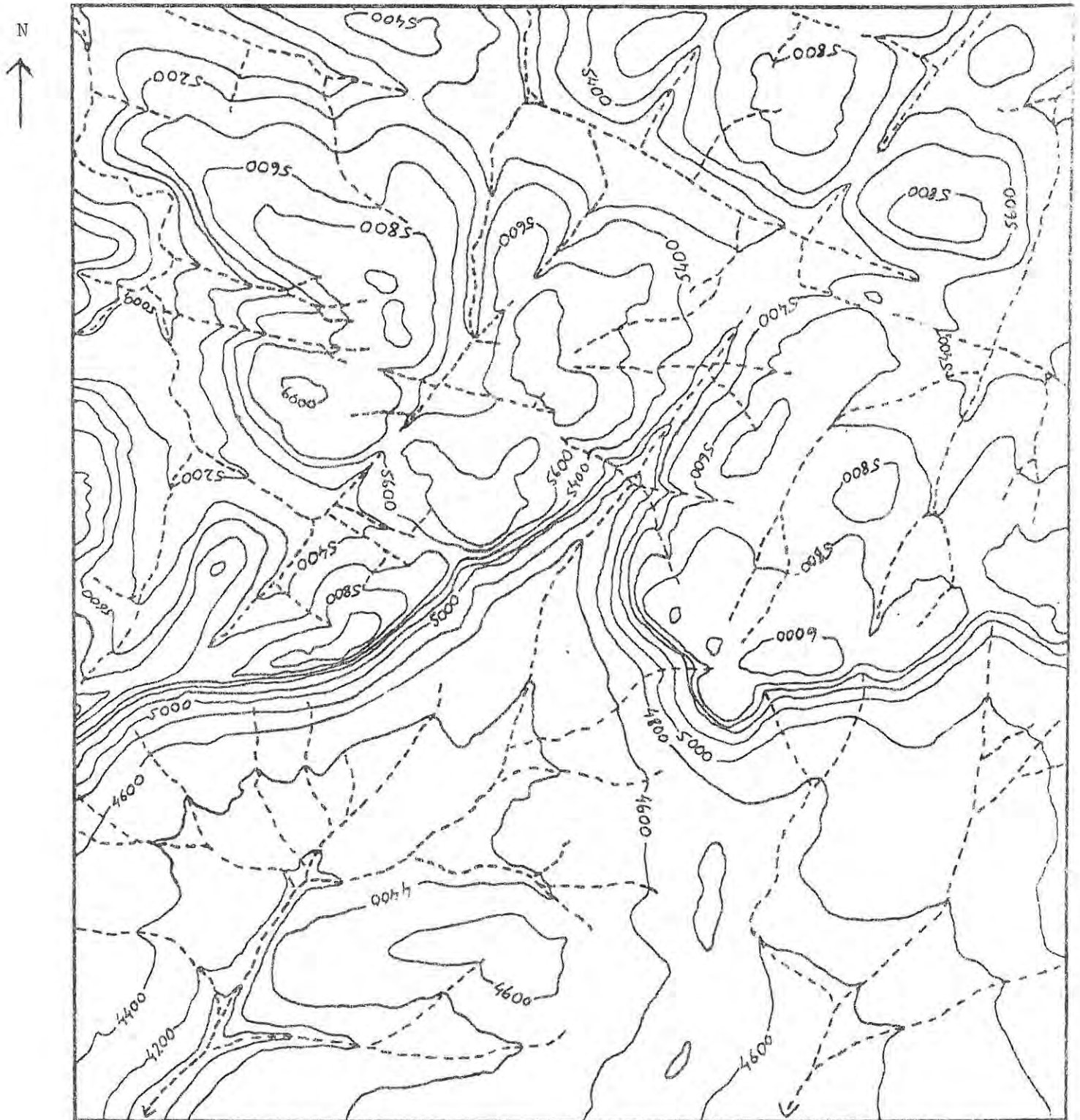


FIGURE 3

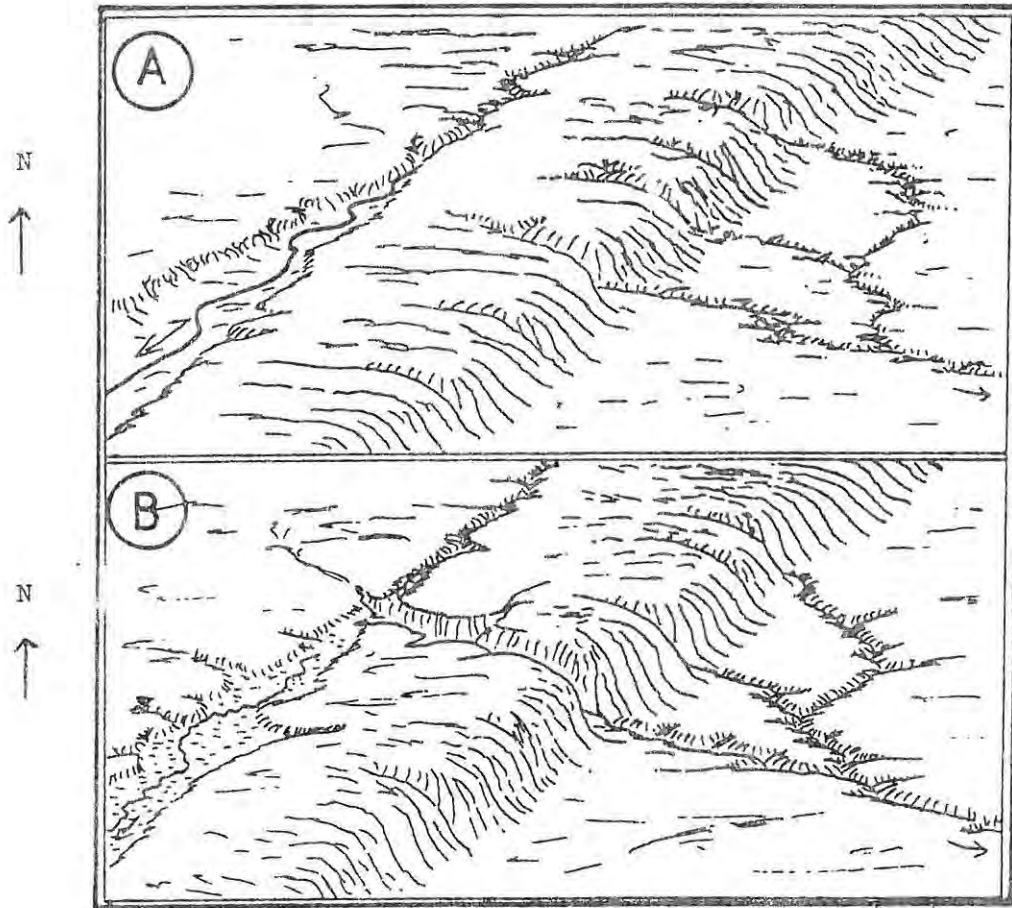
FIGUUR 3



Skaal / Scale: 1 : 50 000

FIGURE 4

FIGUUR 4

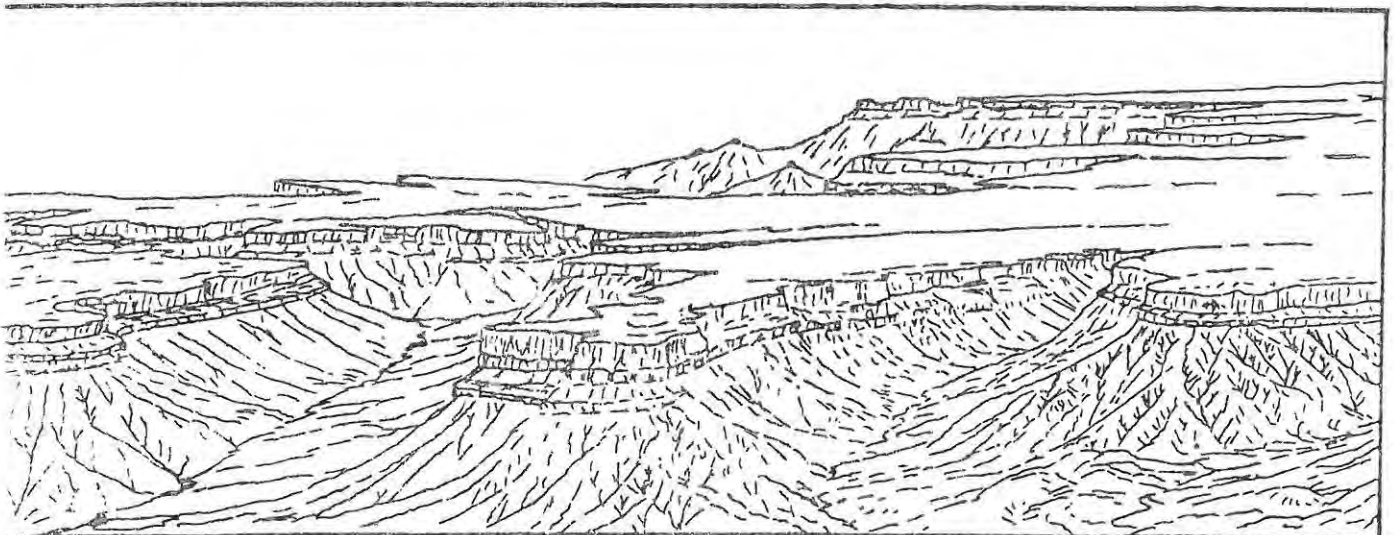


Question 1(d)

Vraag 1(d)

FIGURE 5

FIGUUR 5

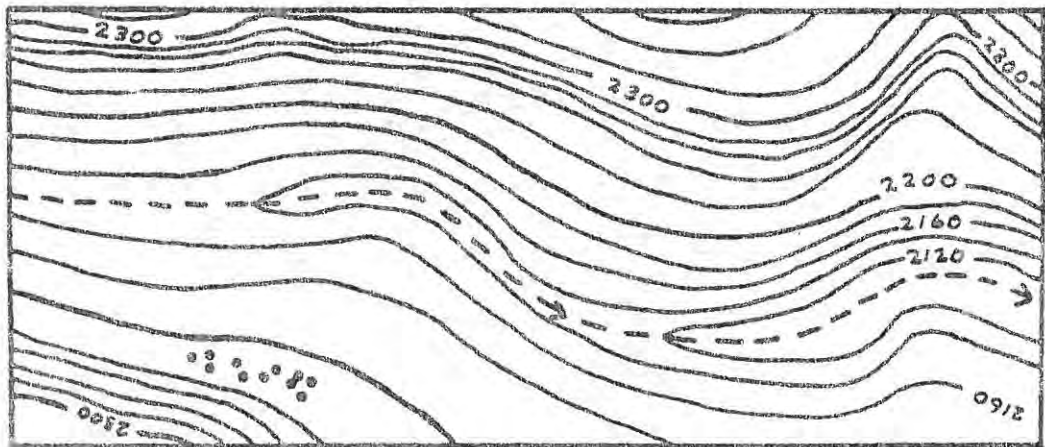


Question 2(a)

Vraag 2(a)

FIGURE 6

FIGUUR 6



•• hutte / huts

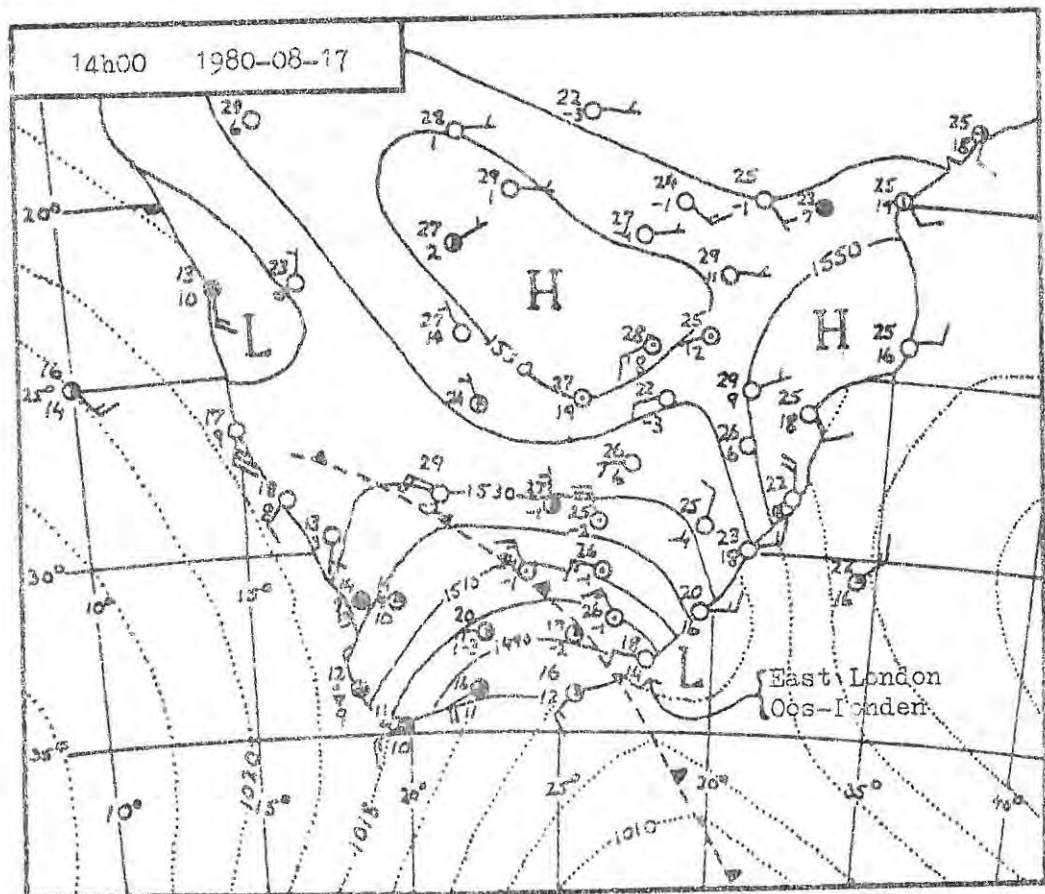
Skaal / Scale: 1 : 50 000

Question 2(b)

Vraag 2(b)

FIGURE 7

FIGUUR 7

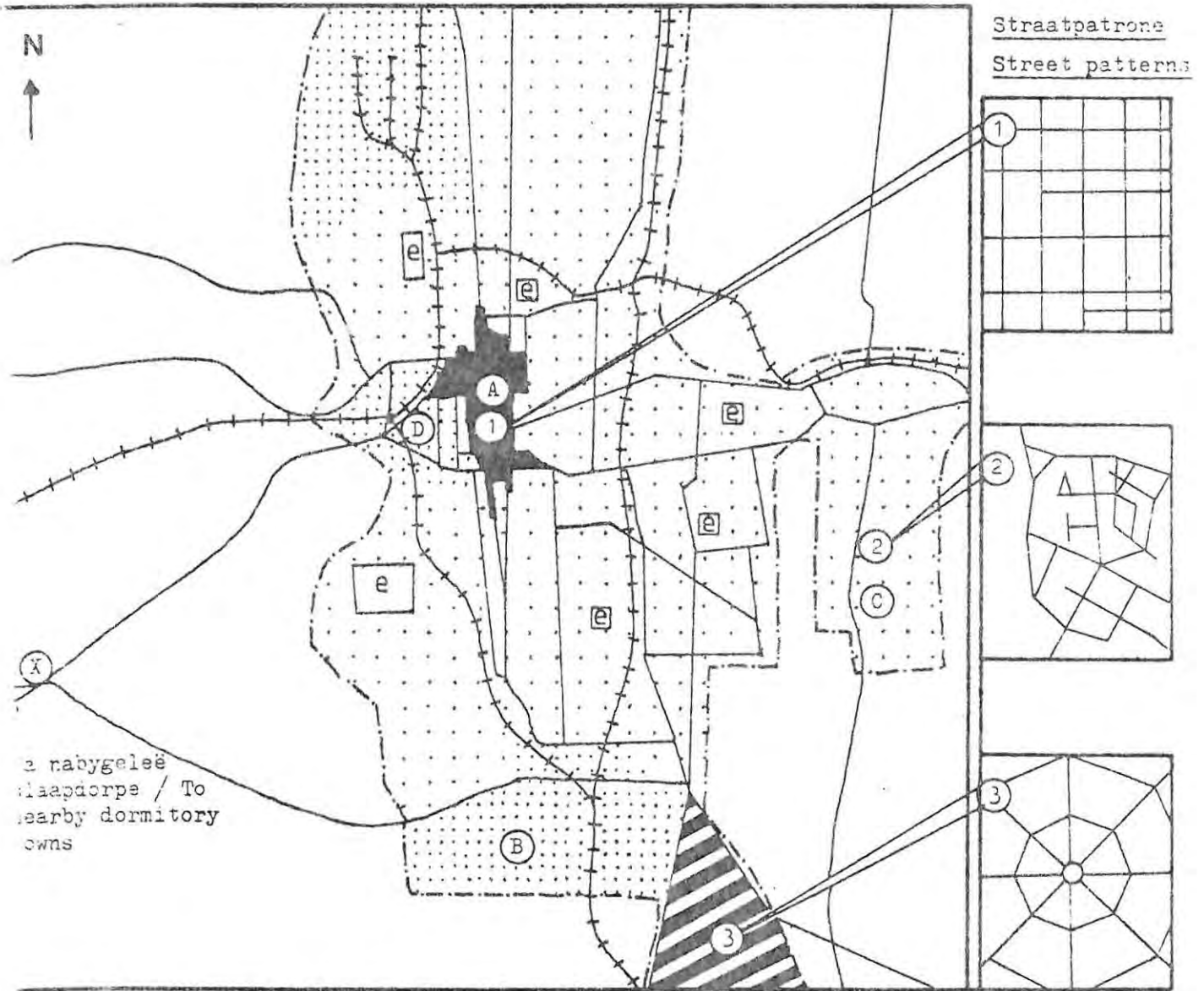


Question 3(a) + (b)

Vraag 3(a) + (b)

FIGURE 8

FIGUUR 8



Sleutel / Key:

	Stadsgrens City Boundary
	Hoofweë Main Roads
	Spoorweë Railroads
	Nywerhede Industries
	Blanke woonbuurte White residential area
	Swart woonbuurte Black residential area
	Kommersiële Commercial
	Opvoedkundig Educational

Kontoerkaart / Contour map:

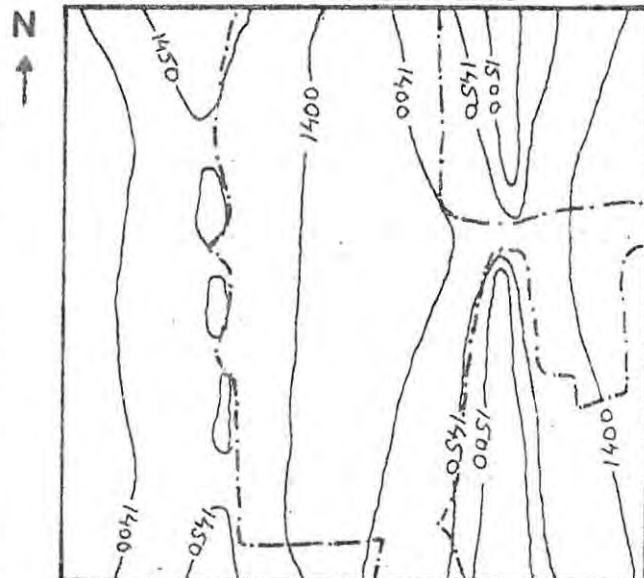
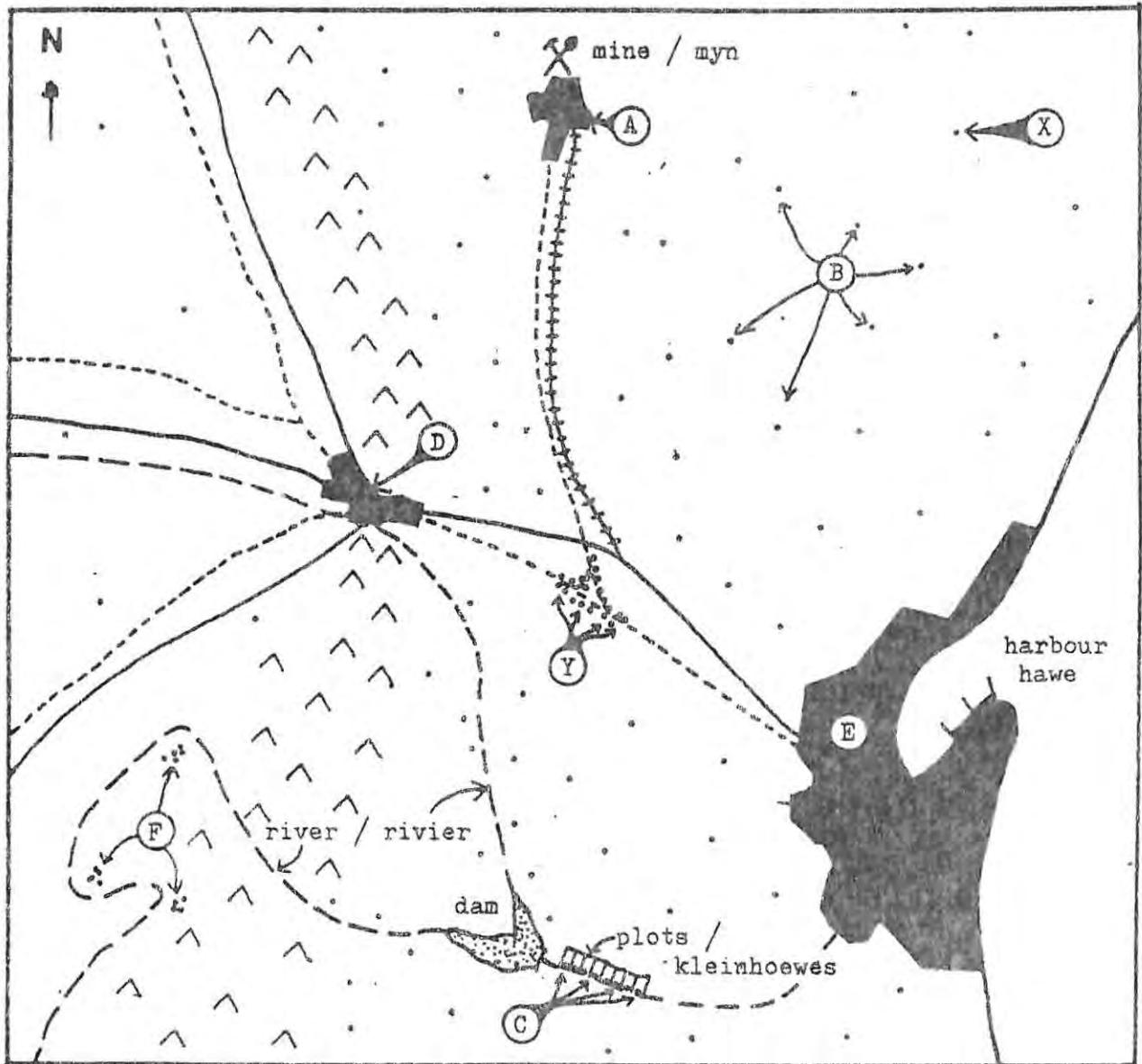


FIGURE 9

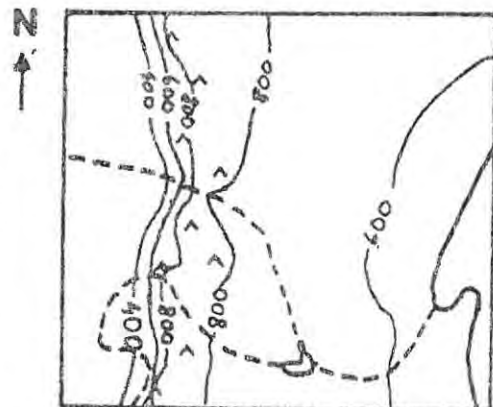
FIGUUR 9



Sleutel / Key:

	Mountains Berge
	Roads Paaie
	Railways Spoorweë
	Service railway line Diensspoorlyn
	Rural settlements Landelike nedersettings
	Built-up area Beboude gebied

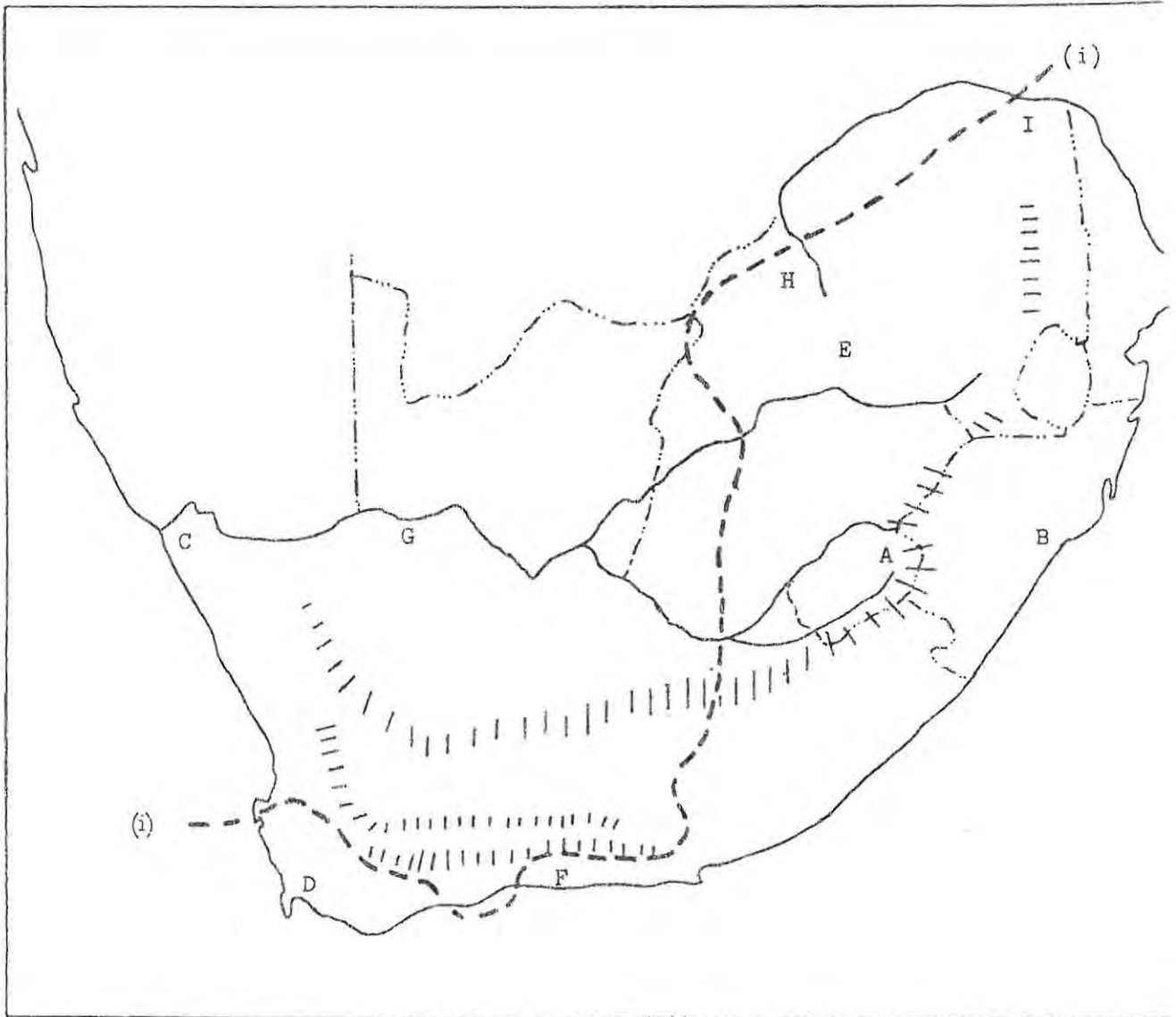
Isohieetkaart / Isohyet map:



Reënval in mm — 600 —
Rainfall in mm — 600 —

Question 7
Figure 10

Vraag 7
Figuur 10



Key/Sleutel



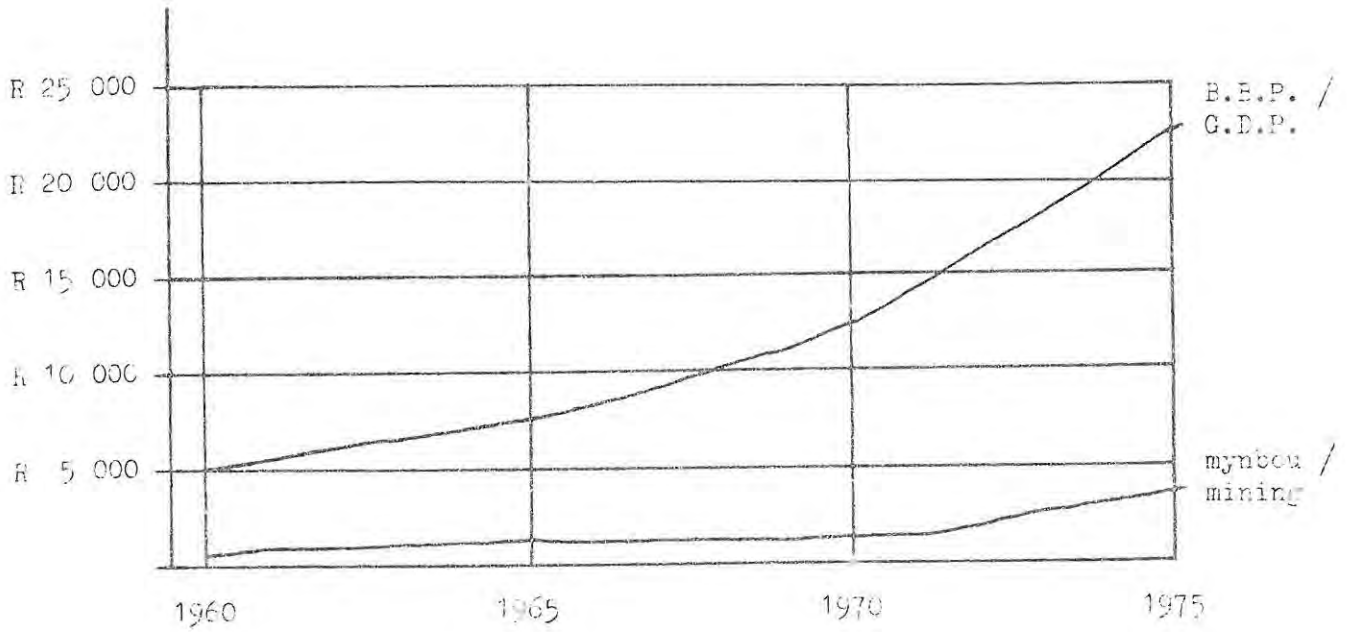
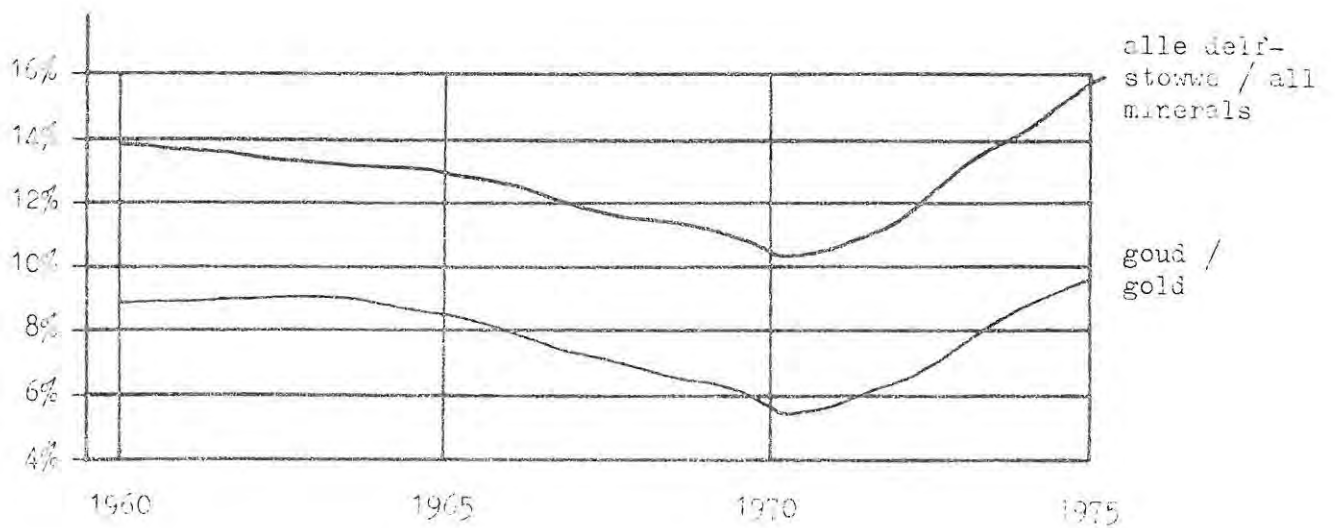
	Isohyet/Isohieet
	Mountains/Berge

FIGURE 11
FIGUUR 11

A. CONTRIBUTION OF MINING TO THE G.D.P. OF SOUTH AFRICA
BYDRAE VAN MYNBOU TOT DIE B.B.P. VAN SUID-AFRIKA



B. CONTRIBUTION OF MINING AS A PERCENTAGE OF THE SOUTH AFRICAN G.D.P.
BYDRAE VAN MYNBOU AS 'N PERSENTASIE VAN DIE SUID-AFRIKAANSE B.B.P.

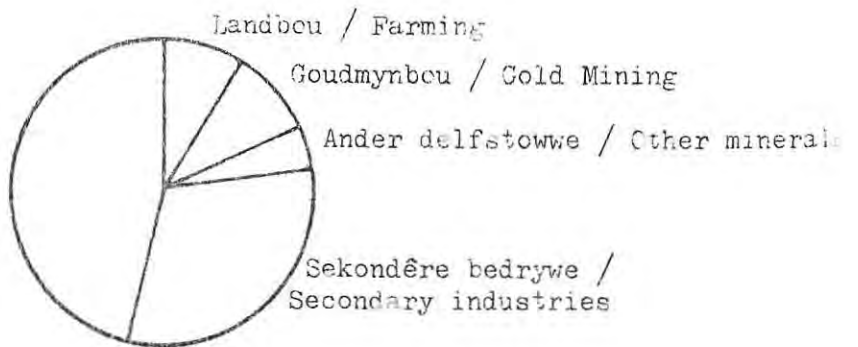


C. PERCENTAGE CONTRIBUTION OF THE VARIOUS SECTORS OF THE SOUTH AFRICAN ECONOMY

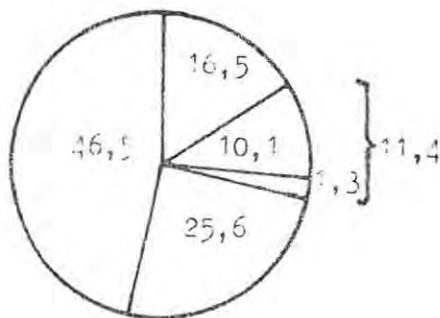
PERSENTASIE BYDRAE VAN DIE VERSKEIE SEKTORE VAN DIE SUID-AFRIKAANSE EKONOMIE

SLEUTEL / KEY :

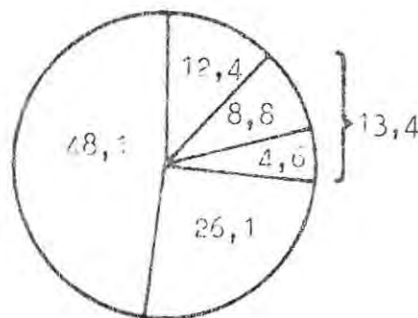
Tersiêre bedrywe /
Tertiary industries



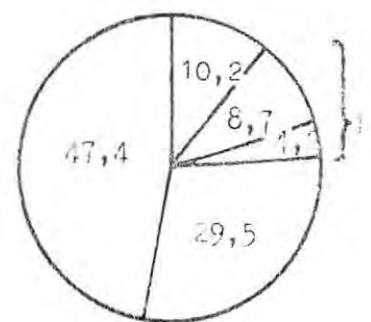
1953:



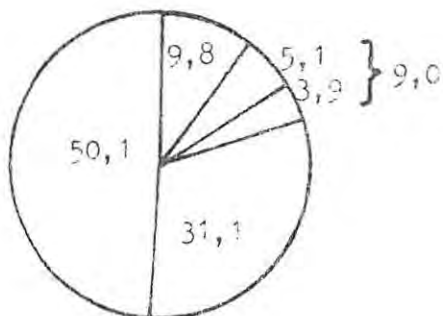
1959:



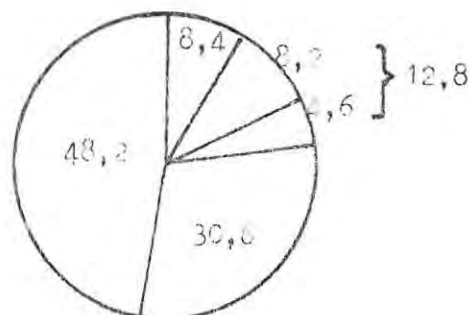
1964:



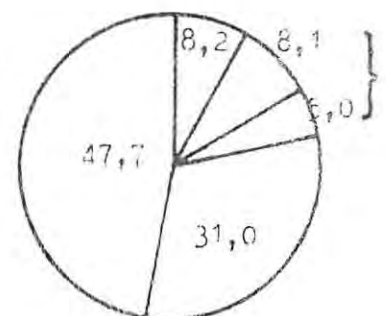
1971:



1973:



1975:

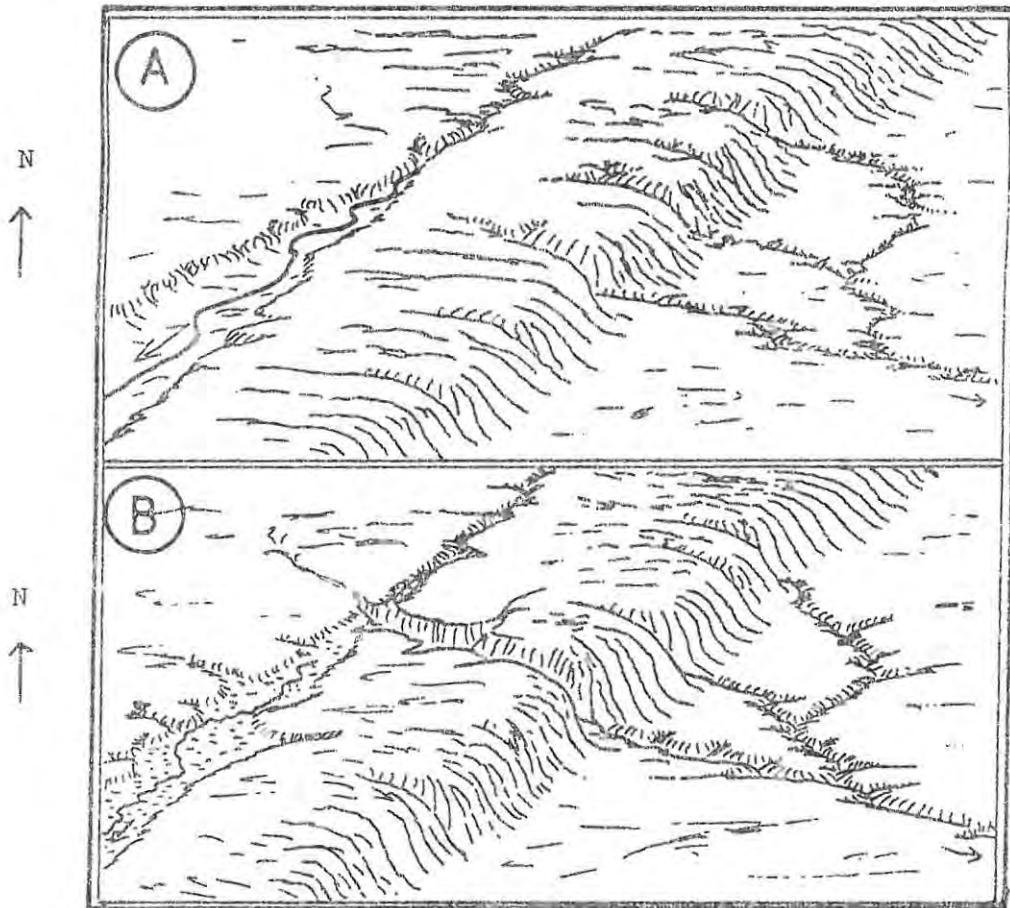


Rank as a holder of world reserves and percentage of world's reserves Plek op wêreldranglys van voorrade en persentasie van wêreldvoorrade				SOUTH AFRICA SUID-AFRIKA		Percentage of world production and rank as a world producer Persentasie van die wêreldproduksie en plek op die wêreldranglys van produsente			
1	5	10	15			15	10	5	1
1			49%	Goud / Gold	59%				1
1			86%	Platinum	55%				1
1			64%	Vanadium	46%				1
1			83%	Chroom / Chrome	30%				2
1			48%	Mangaan / Manganese	24%				2
2			7%	Diamante / Diamonds	17%				3
4			17%	Uraan / Uranium	13%				3
5			10%	Asbes / Asbestos	10%				3
3			10%	Nikkel / Nickel	3%			7	
6			2%	Steenkool / Coal	2%			9	
4			8%	Fosfate / Phosphates	2%			10	
		15	1%	Tin	1%			11	
	10		2%	Koper / Copper	2%			12	
6			4%	Ystererts / Iron ore	1%			12	
5			4%	Lood / Lead	1%	41			
			--	Petroleum	--				

To be placed inside your answer-book.
Moet in u antwoordboek geplaas word.

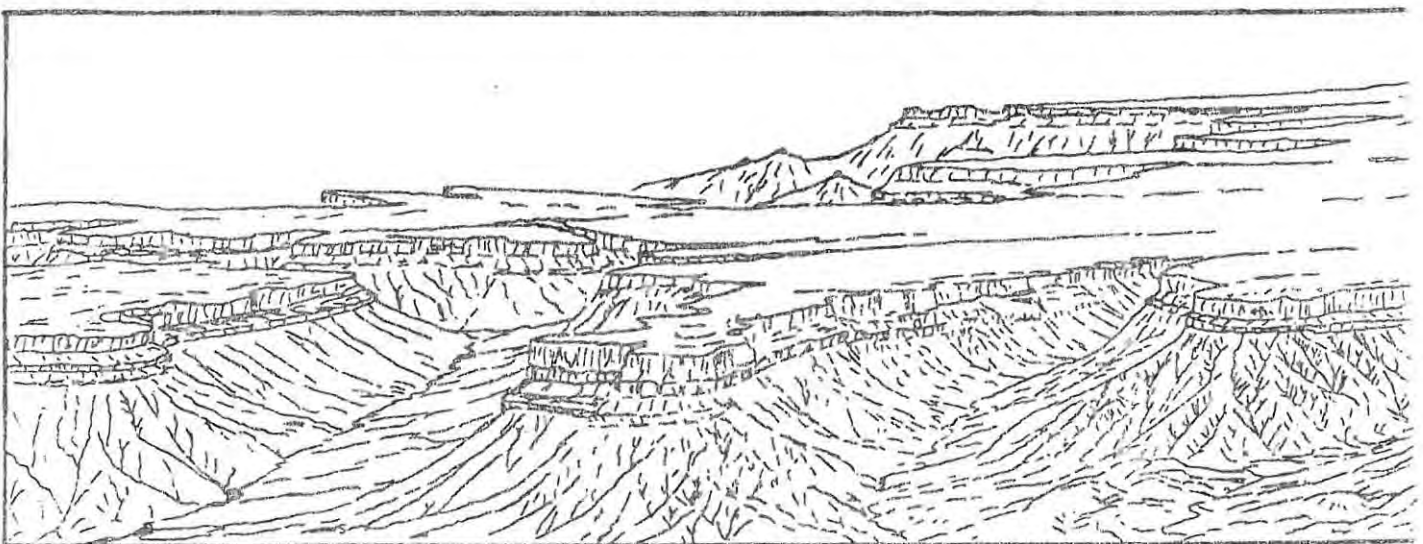
VRAAG 1(c) / QUESTION 1(c)

FIGUUR 4 / FIGURE 4



VRAAG 1(d) / QUESTION 1(d)

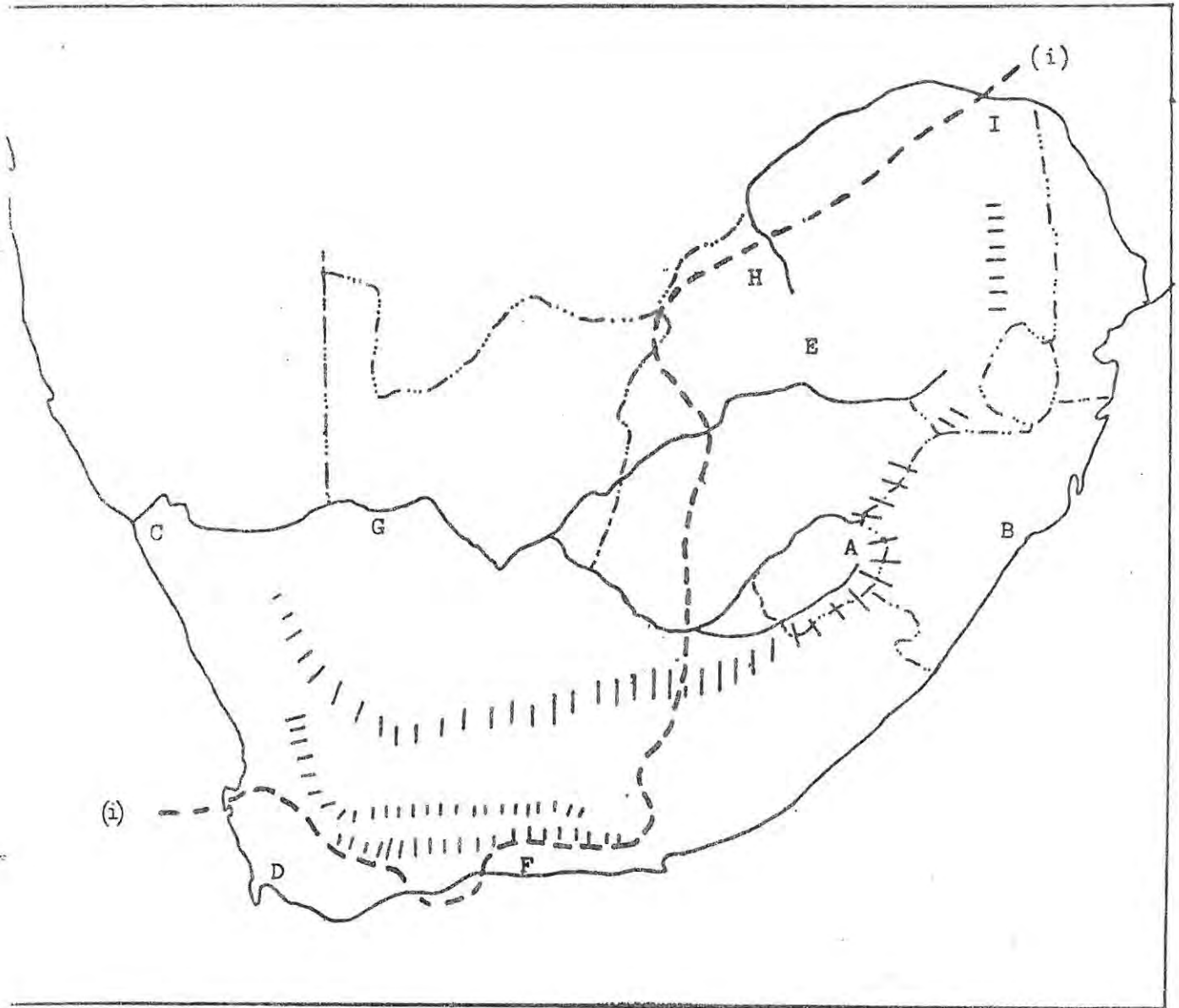
FIGUUR 5 / FIGURE 5



To be placed in your answer-book.
Moet in u antwoordboek geplaas word.

Question 7
Figure 10

Vraag 7
Figuur 10



Key/Sleutel

/	Isohyet/Isohfeet
//	Mountains/Berge

- (b) Make use of the same map (Figure 10). Indicate and name the following directly on the map, and place the map in your answerbook.
- (i) A region where temperate forests are found. (2)
 - (ii) The largest natural harbour in R.S.A. (2)
 - (iii) The largest reservoir in R.S.A. (2)
 - (iv) A Karst Region (2)
 - (v) South Africa's Standard Time Meridian, and (2)
 - (vi) The newest independent Black state. (2)

- (c) Complete *ONE* of the following two sections.

Discuss the importance of the South African Mining Industry with regard to the country's economy and also in terms of world mining production. Indicate tendencies and changes that have occurred, and account for these. Refer, also, to one specific mineral that you have studied. (You may make use of the information included in Figure 11(a) (b) (c) and (d). (30)

OR

- (d) Discuss the problems which hamper the economic development of South West Africa - Namibia, and stress, amongst other things, regional differences. (30)

/80/

#####

GEOGRAPHY HG
(FIRST PAPER) (MAPWORK)

1

AARDRYKSKUNDE HG
(EERSTE VRAESTEL) (KAARTWERK)

1981

Total marks Puntetotaal

Examination number Eksamennummer

Examiner's initials Eksaminator se paraaf
--

DEPARTMENT OF EDUCATION
CAPE OF GOOD HOPE

DEPARTEMENT VAN ONDERWYS
KAAP DIE GOEIE HOOP

Examiner's number Eksaminator se nommer
--

SENIOR CERTIFICATE EXAMINATION
SENIOR SERTIFIKAAT-EKSAMEN

GEOGRAPHY HIGHER GRADE
(FIRST PAPER)

AARDRYKSKUNDE HOËR GRAAD
(EERSTE VRAESTEL)

This examination paper consists of 18 pages
Hierdie vraestel bestaan uit 18 bladsye

PLEASE TURN OVER / BLAAI OM ASSEBLIEF

Time: One hour

Read the following instructions carefully

- 1. Write your examination number in the space on the front page of this question paper.
- 2. Study the extract of the South African 1:50 000 map sheet 2829DB Ladysmith and the aerial photograph of a part of the same area and answer the following questions.
- 3. Fill in your answers on this question paper.
- 4. All the questions are compulsory, but in Question 5 you have a choice.
- 5. A blank page is supplied for calculations. (see page 18).

1. Indicate the correct or nearest correct answer to each of the following questions by drawing a cross in the appropriate square:

e.g. The scale of this map is

- (i) 1:5 000
- (ii) 1:50 000
- (iii) 1:500 000

(a) The length of the electrified multiple track railway line from Ladysmith station to Glencoe is:

- (i) 17 000 m
- (ii) 36 000 m
- (iii) 8 500 m
- (iv) 44 500 m

(3)

(b) The co-ordinates of Trigonometrical beacon No. 29 on Lombardskop are:

- (i) $29^{\circ} 51' 26''$ South, $28^{\circ} 33' 15''$ East
- (ii) $29^{\circ} 51' 26''$ East, $28^{\circ} 33' 15''$ South
- (iii) $30^{\circ} 58' 45''$ South, $28^{\circ} 36' 45''$ East
- (iv) $30^{\circ} 58' 45''$ East, $28^{\circ} 36' 45''$ South

(3)

(c) The magnetic compass bearing from spotheight .1118 on Bell's Koppie, which lies north of Ladysmith, to Trigonometrical beacon No. 29 on Lombardskop must be calculated by a surveyor working in the field using this topographical map. Which calculation should he use?

- (i) $114^{\circ} 30' + 19^{\circ} 24' = 133^{\circ} 54'$
- (ii) $114^{\circ} 30' - 19^{\circ} 24' = 95^{\circ} 06'$
- (iii) $114^{\circ} 30' + 19^{\circ} 14' = 133^{\circ} 44'$
- (iv) $114^{\circ} 30' - 19^{\circ} 14' = 95^{\circ} 16'$

(3)

2. Explain fully what is meant by the title of the map 2829DB. Use the grid below in your explanation.

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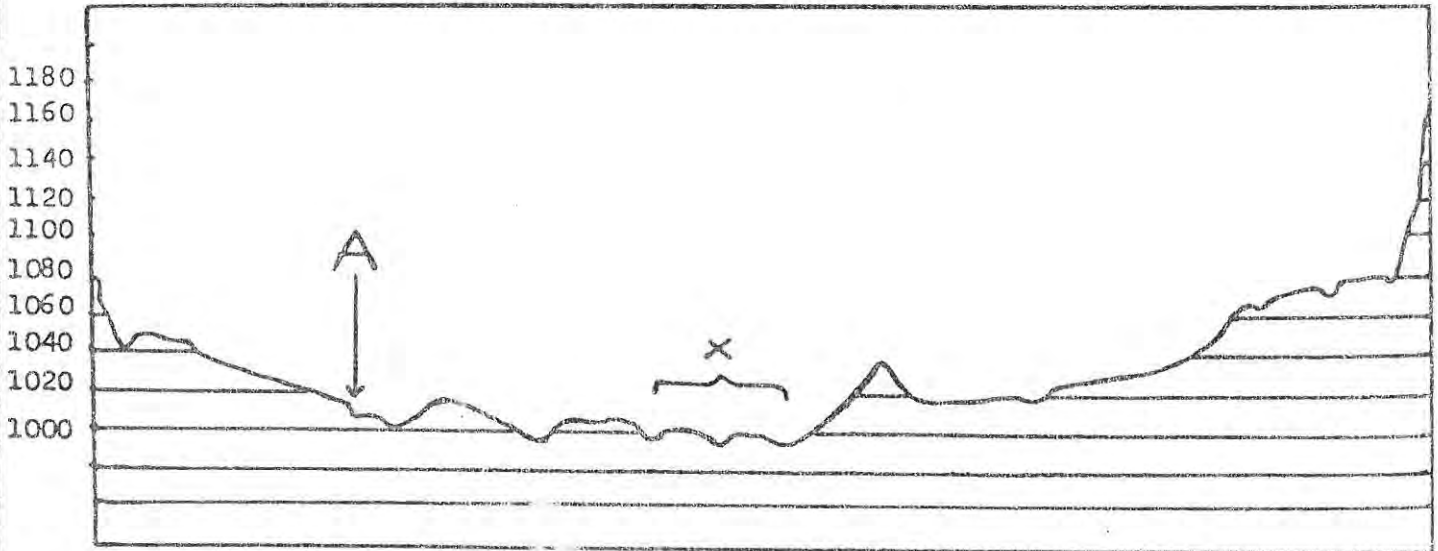
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(8)

3. The figure below is a cross section drawn from the trigonometrical beacon No. 313 on Red Hill, which lies north of the Ladysmith - Colenso national road, to the spotheight .1174 on Gunn Hill, which is approximately 5 km due east of Ladysmith.

HEIGHT IN METERS



RED HILL

GUNN HILL

- (a) Indicate and name a feature of environmental despoilation shown on the cross section at A (3)
- (b) On the cross section accurately mark and label the area covered by:
 - (i) a white residential area (3)
 - (ii) a black residential area (3)
 - (iii) an area which is not built up and which is totally unsuitable for arable farming. Give a reason for your answer. (3)

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..... (3)

/15/

(c) State the human activity practised in the area marked x and briefly explain the factors, which according to evidence found on the map, favour this activity.

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(6)

4. Orientate the vertical aerial photograph and the topographical map and answer the following questions

(a) Name the type of vertical aerial photograph supplied.

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(2)

(b) Calculate the scale of the photograph by making use of the distance marked between A and B as shown on the photograph.

Formula:

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(4)

(c) What technological development which was introduced on a large scale after 1920 has played the most prominent role in the location of the function at C?

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(2)

(d) Identify the land-use in the area marked D on the photograph and state in which land-use zone it is found according to Burgess' Theory of Urban structure.

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(4)

(e) In which direction is the suburb of Reservoir Hill most likely to expand? Briefly give reasons for your answer.

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(4)

(f) The landuse zone marked E was recently developed after much consideration had been given to location and site. Discuss briefly.

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(6)

5. Answer only TWO of the following three sections:

(a) Describe and explain how the underlying geological structure has influenced and physical topographical phenomena in the mapped area.

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(10)

(b) Identify and describe the types of rural settlement patterns shown on the map emphasizing the function of each. Name specific examples and areas where they are found.

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(1)

(c) Discuss and describe how the physical obstacles were overcome in building the service railway line which serves the industrial zone that lies 4 km to the East of Ladysmith.

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(10)

/80/

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EM

GEMEENSKAPLIKE MATRIKULASIERAAD
JOINT MATRICULATION BOARD

D.2 (4 pp &
Kaartboek)

MATRIKULASIE-EKSAMEN, NOVEMBER/DESEMBER 1979
MATRICULATION EXAMINATION, NOVEMBER/DECEMBER 1979

AARDRYKSKUNDE (HOËR GRAAD) : TWEDE VRAESTEL
(320 Punte)

(Tyd/Time: 3 Uur/Hours)

Paneel van Eksaminatore: Mnr. J. Earle
Mev. K. Caselli
Mnr. L.B. Hurry

Moderator: Dr. I.G. Nicol

LEES EERS DIE VOLGENDE:

1. Krediet sal toegeken word vir
 - interpretasie en verklaring
 - noukeurige aandag aan die gestelde vraag
 - bewyse van persoonlike veldwaarneming, waar dit op 'n vraag van toepassing is.
2. Onverwante of net 'n lys van feite, tensy spesifiek daarvoor gevra, sal 'n maksimum van die helfte van die totale moontlike punte toegeken word.
Raaiwerk en versuiming om die gestelde vraag te beantwoord, sal gepeenaliseer word.
Onthou dat deeglike en netjiese werk die waarde van die vraag sal verhoog.
3. Skryf u eksamenommer op al die gebruikte kaarte en diagramme.
4. 'n Rooi balpuntepen of enige ander rooi penne, mag NIE gebruik word nie.
5. Die nommers van die antwoorde moet presies met dié op die vraestel ooreenstem.

Beantwoord VIER vrae soos volg: EEN uit Afdeling A
EEN uit Afdeling B
EEN uit Afdeling C
en nog EEN (enige) ander vraag.

AFDELING A : FISIESE AARDRYKSKUNDE

VRAAG 1

- 1.1 "Deeglike waarnemings van die afloop van 'n rivier vanaf sy oorsprong tot die uitmonding toon dat die vloeiempo of konstant bly of stroomaf selfs effens vermeerder."
Gee met behulp van 'n skets, 'n kort verduideliking van hierdie verskynsel.
- 1.2 1.2.1 Wat word met die term "vereffen" bedoel, wanneer daar na riviere verwys word?
- 1.2.2 Teken 'n lengteprofiel van 'n rivier wat naby aan 'n toestand van vereffening verkeer. U moet na hierdie skets verwys wanneer u die gradasieprosesse beskryf wat in die boonste, middel en laer lope van die rivier voorkom.

- 3 Dit word gesê dat 'n landskap verkeer in 'n toestand van "dinamiese ewewig" wanneer daar 'n balans bestaan tussen die interne (kors) en eksterne (oppervlak) prosesse wat dit beïnvloed.

Raadpleeg figuur 1 op bladsy 1 van die kaartboek. Dit is 'n skuinslugfoto van Barberton in Oos-Transvaal. Veronderstel dat beide die landskappe van Barberton (die dorp) en die bergagtige gebied ten ooste van die dorp, albei in 'n toestand van dinamiese ewewig verkeer.

Verklaar met behulp van diagramme, die opvallende verskille in die topografie van hierdie twee landskappe. (10)

- 4 "Grondvorming is die resultaat van die interaksie tussen die fisiese en biologiese faktore in die ekosisteem."

Raadpleeg figuur 1 weer eens, en bespreek dan die moontlike uitwerking van fisiese toestande op grondvorming by die plek wat P gemerk is.

(10)
40 x 2 = 80

RAAG 2

- 1 Konvergensie en divergensie is twee terme wat dikwels by die bespreking van bewegende lug gebruik word. Figure 2, 3 en 4 op bladsy 2 van die kaartboek, is voorbeelde van toestande waaronder die konvergensie van lug naby aan die aardoppervlak plaasvind. Noem 'n geskikte naam vir elke tipe konvergensie en skryf kort verklarende aantekeninge oor elkeen. (10)
- 2 Bestudeer die onderstaande tabelle en beantwoord dan die daaropvolgende vrae:

DAAGLIKSE HOEVEELHEID SONSKYN (UUR) : DURBAN EN BLOEMFONTEIN				
	DURBAN		BLOEMFONTEIN	
	Gemiddelde daaglikse uur	% van moontlike	Gemiddelde daaglikse uur	% van moontlike
Jan.	6,5	47	9,9	71
Feb.	6,7	51	9,2	70
Maart	6,2	50	8,5	70
April	6,8	60	8,8	77
Mei	7,4	69	8,8	82
Junie	6,9	68	8,7	85
Julie	6,9	63	9,0	86
Aug.	6,9	63	9,6	87
Sept.	5,8	49	9,4	79
Okt.	5,2	41	9,7	76
Nov.	5,7	42	10,3	77
Des.	6,0	43	10,6	76

- 2.2.1 Verduidelik die verskil in die hoeveelheid sonskyn wat die twee stede gedurende Julie ontvang. Noem die toepaslike aspekte in u bespreking van die atmosferiese drukverbreiding gedurende hierdie maand, asook daardie faktore wat die vorming van wolke beïnvloed. (10)
- (Wenk: Figuur 5 op bladsy 2 van die kaartboek toon die relatiewe posisies van die twee stede in die Republiek van Suid-Afrika.)
- 2.2.2 Veronderstel dat elke stad beskik oor dieselfde hoeveelheid skoorstene wat rook gedurende Julie uitlaat. Bespreek die faktore wat die lugbesoedeling van albei stede oor 'n periode van 24 uur sal beïnvloed. (10)
- 3 Figuur 6 (op bladsy 3 van die kaartboek) toon die benaderde posisie van die Intertropiese Konvergensiesone (I.T.K.S.) gedurende Januarie oor suidelike Afrika aan.
- 2.3.1 Beskryf die toestand van die twee lugmassas A en B in terme van temperatuur en

vogtigheid.

(4)

- 2.3.2 Beskryf die algemene weerstoestande in die omgewing van M lanje gedurende dieselfde periode.

(6)

40 x 2 = 80

AFDELING B · NEDERSETTINGSZAARDRYKSKUNDE

VRAAG 3

- 3.1 Voeg die volgende uitdrukkings in 'n duidelik verklarende paragraaf saam: hoër-orde funksies, minimum diensgebied, laer-orde funksies, stedelike hiërargie, maksimum diensgebied, drumpelbevolking.

Die onderstreepte uitdrukking moet die tema van die paragraaf vorm.

(11)

- 3.2 'n Stedelike hiërargie openbaar sekere belangrike kenmerke.

- 3.2.1 Bestudeer figuur 7 op bladsy 5 van die kaartboek. Tabuleer 'n vergelyking tussen V_1 , T_1 , C_1 en R_1 deur die presiese inligting vanaf hierdie grafiek te onttrek. Kopieer die onderstaande tabel en gebruik dit om die vraag te beantwoord.

	Handelsgebied bedien	Totale Bevolking	Bevolkingsdigtheid
V_1			
T_1			
C_1			
R_1			

(12)

- 3.2.2 Sien figuur 7 en figuur 8 (op bladsy 5 van die kaartboek) en gee daarvolgens die belangrikste kenmerke van 'n stedelike hiërargie.

(8)

- 3.2.3 Noem enige ander kenmerke van 'n stedelike hiërargie wat nie uit die inligting in figure 7 en 8 afgelei kan word nie.

(2)

- 3.3 Die sentraleplek-teorie soos deur W. Christaller voorgestel, het 'n aantal oogmerke gehad. Gee kortliks die hooftrekke van hierdie oogmerke.

(4)

- 3.4 Van watter waarde is die analise van die stedelike hiërargie in enige land?

(3)

40 x 2 = 80

VRAAG 4

- 4.1 Raadpleeg figuur 9 (op bladsy 6 van die kaartboek) wat die groei van Melbourne (Australië) vanaf 1838 - 1966 uitbeeld. Hierdie groei het op twee maniere plaasgevind, nl. deur 'n uitwaartse uitbreiding en 'n herorganisasie van binne. Beskryf die prosesse en sê ook waarom u dink dat hulle in hierdie volgorde voorgekom het of nie voorgekom het nie.

(15)

- 4.2 Hoe verskil 'n stad se ligging van sy invloedssfeer?

(4)

- 4.3 Bestudeer figuur 10 op bladsy 6 van die kaartboek. Die lyne op hierdie figuur verbind die landelike kliënte (klein stippeltjies) met daardie stedelike plekke (groot sirkels), waar hulle hul meubels aankoop.

- 4.3.1 Teken die buite grense van die invloedssfeer van meubelaankope vir Omaha en Red Oak op die kaart in.

(2)

- 4.3.2 Wat is die mees opvallende resultaat wat waargeneem kan word en watter invloed oefen dit op die verbruikers uit?

(4)

- 4.3.3 Noem twee maniere waarvolgens die nodige inligting vir die konstruksie van figuur 10, bekom is.

(4)

- 4.3.4 Waarom is hierdie kaart nie 'n geldige voorstelling van die algemene invloedssfeer van hierdie twee stede nie?

(2)

- 4.3.5 Hoe sal u te werk gaan om 'n meer volledige beeld van hierdie invloedssfeer te bekom? (4)
- 4.3.6 Bespreek met verwysing na Christaller se Sentraleplek-teorie, die patroon wat in figuur 10 waargeneem kan word. Noem redes vir die verskille wat voorkom. (5)
- 40 x 2 = 80

AFDELING C

VRAAG 5

5.1 Kies een rivier uit lys A en nog een uit lys B. Tref 'n teenstelling tussen die twee gekose riviere volgens die onderstaande opskrifte:

1. Fisiese verskille (bv. bron, dreineringskom, gradiënt, vloeirigting, seisoenale vloei, spesiale kenmerke).
2. Ekonomiese waarde van hul onderskeie bekkens en hinterlande.

<u>A</u>	<u>B</u>
Limpopo	Sondags
Oranje	Tugela
	Berg

(2)

5.2 Bespreek die volgende stelling met verwysing na 'n aantal Suid-Afrikaanse voorbeelde.

"Die geografiese verbreding van bevolking kan by geen skaal as eweredig beskou word nie."

(18)

40 x 2 = 80

VRAAG 6

- 6.1 Beskryf en verklaar aan die hand van die inligting in figuur 11 (bladsy 7 van die kaartboek) die patroon en vernaamste kenmerke van die pad- en spoorlynverkeer in Suid-Afrika. Noem en verduidelik vier belangrike verskille wat in die patroon waargeneem word. (28)
- 6.2 Die Suid-Afrikaanse Spoorweë het R370 miljoen gespandeer om 'n behoueringstelsel te ontwikkel. Figuur 12 op bladsy 8 van die kaartboek toon 'n gedeelte van 'n advertensie ten gunste van behouering. Verduidelik op watter wyse hierdie vorm van kommunikasie "vinniger, geriefliker, veiliger en baie meer ekonomies is", as die konvensionele vervoer wat dit vervang. (12)

40 x 2 = 80

VRAAG 7

7.1 Richardsbaai is een van Suid-Afrika se groeipunte. Die kaarte en foto's op bladsye 9 en 10 van die kaartboek, toon enkele fasiliteite wat hier vir nywerheidsontwikkeling beskikbaar is.

- 7.1.1 Beskryf in 'n reeks kort paragrawe, die belangrikheid van daardie faktore wat neig om nuwe nywerheidsontwikkeling aan te lok. (16)
- 7.1.2 Volgens watter ander maniere kan 'n nyweraar oorreed word om 'n fabriek by Richardsbaai op te rig? (4)
- 7.1.3 Verduidelik kortliks die noodsaaklikheid om nuwe nywerheidsontwikkeling by groeipunte soos Richardsbaai, aan te moedig. (6)

7.2 OF

Bespreek met verwysing na een belangrike boerderytipe van u eie keuse, die mate waartoe ekonomiese faktore belangriker as fisiese faktore is, om die verbreding daarvan in Suid-Afrika te beïnvloed. Illustreer u stellings aan die hand van gepaste voorbeelde.

OF

Identifiseer en verklaar die veranderinge wat sedert 1945 in die geografie van die ontginning en handel van enige twee belangrike minerale in Suid-Afrika plaasgevind het.

(14)

40 x 2 = 80



OBLIQUE AIR PHOTOGRAPH OF BARBERTON, EASTERN TRANSVAAL

SKUINS LUGFOTO VAN BARBERTON OOS-TRANSVAAL

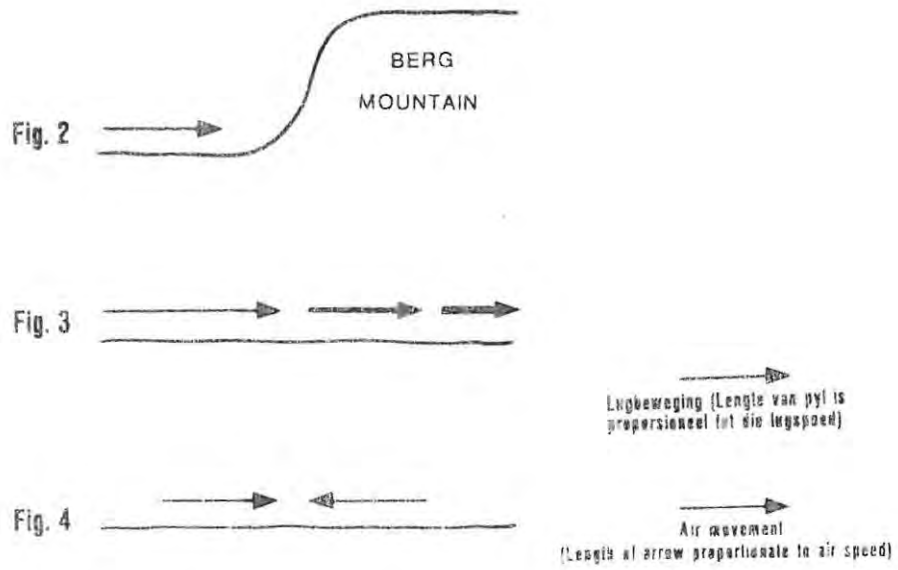
JOINT MATRICULATION BOARD
GEMEENSKAPLIKE MATRIKULASIERAAD

D. 2

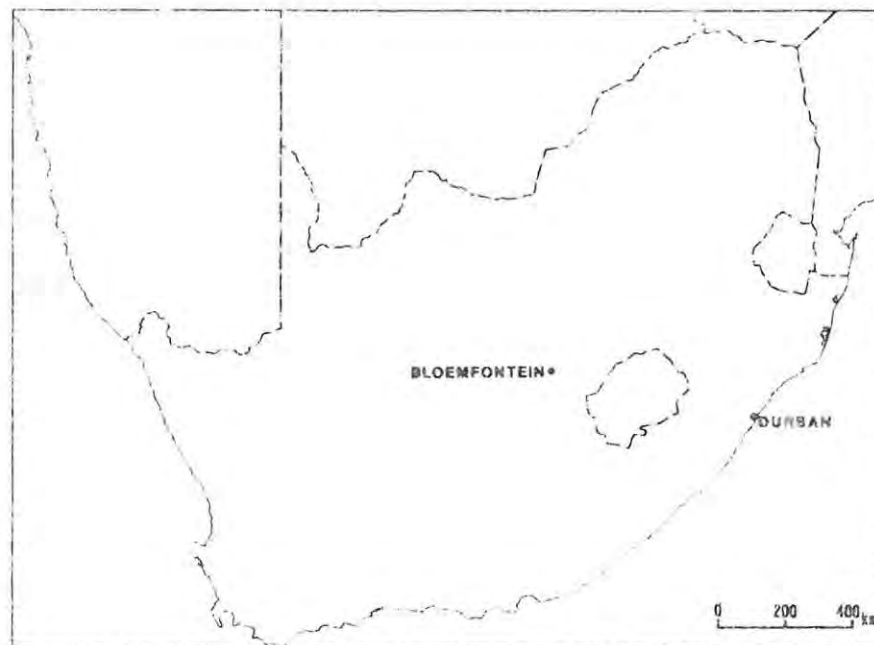
MATRICULATION EXAMINATION, NOVEMBER/DECEMBER, 1979
MATRIKULASIE-EKSAMEN, NOVEMBER/DESEMBER 1979

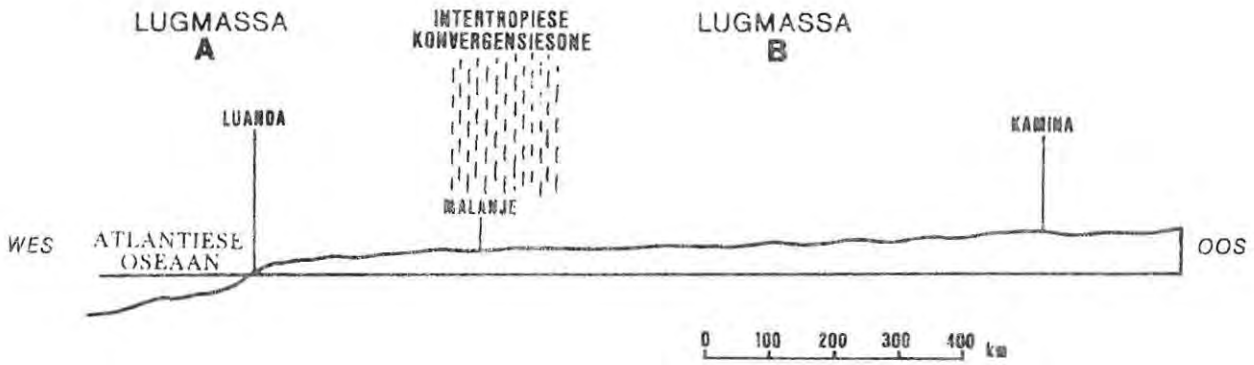
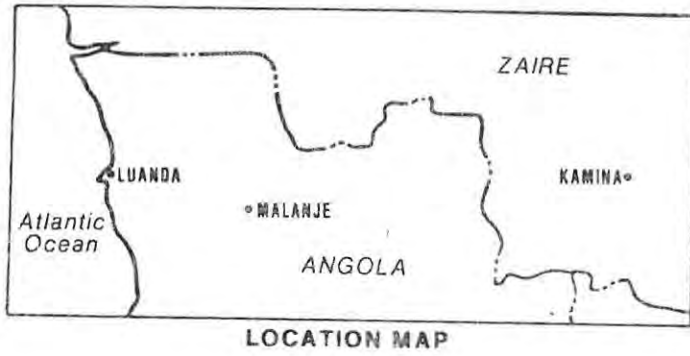
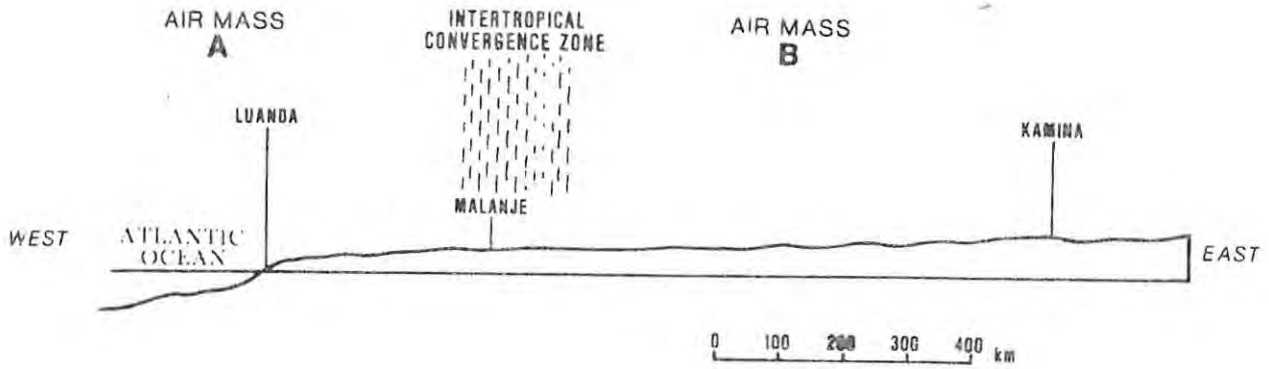
GEOGRAPHY (HIGHER GRADE) : SECOND PAPER
AARDRYKSKUNDE (HOËR GRAAD) : TWEEDE VRAESTEL

MAP BOOK
KAARTBOEK

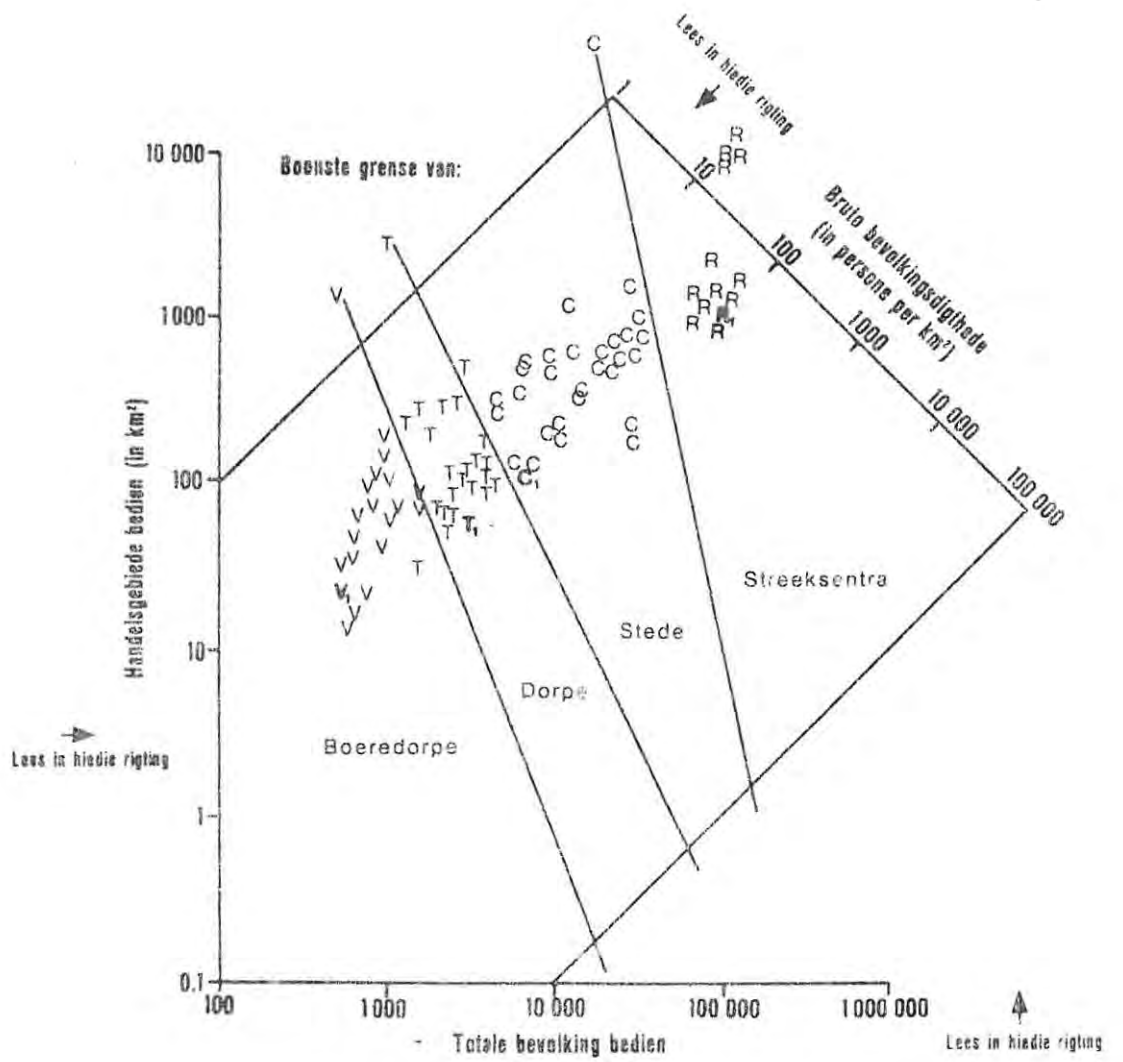


FIGURE/FIGUUR 5

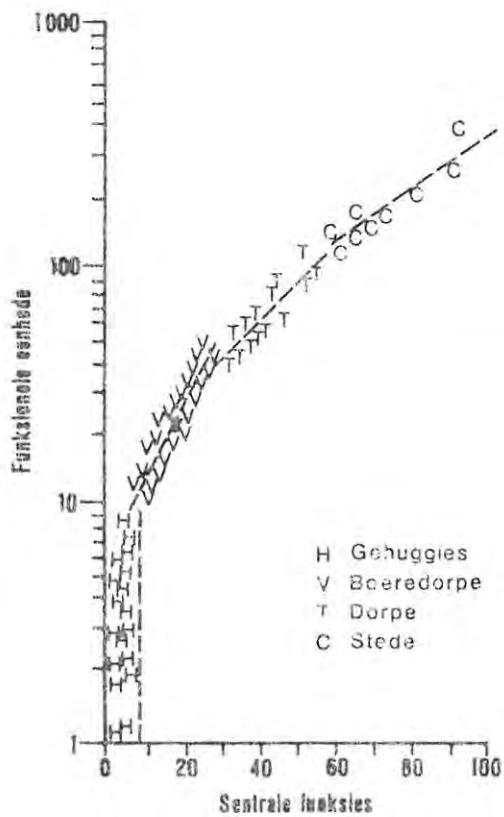




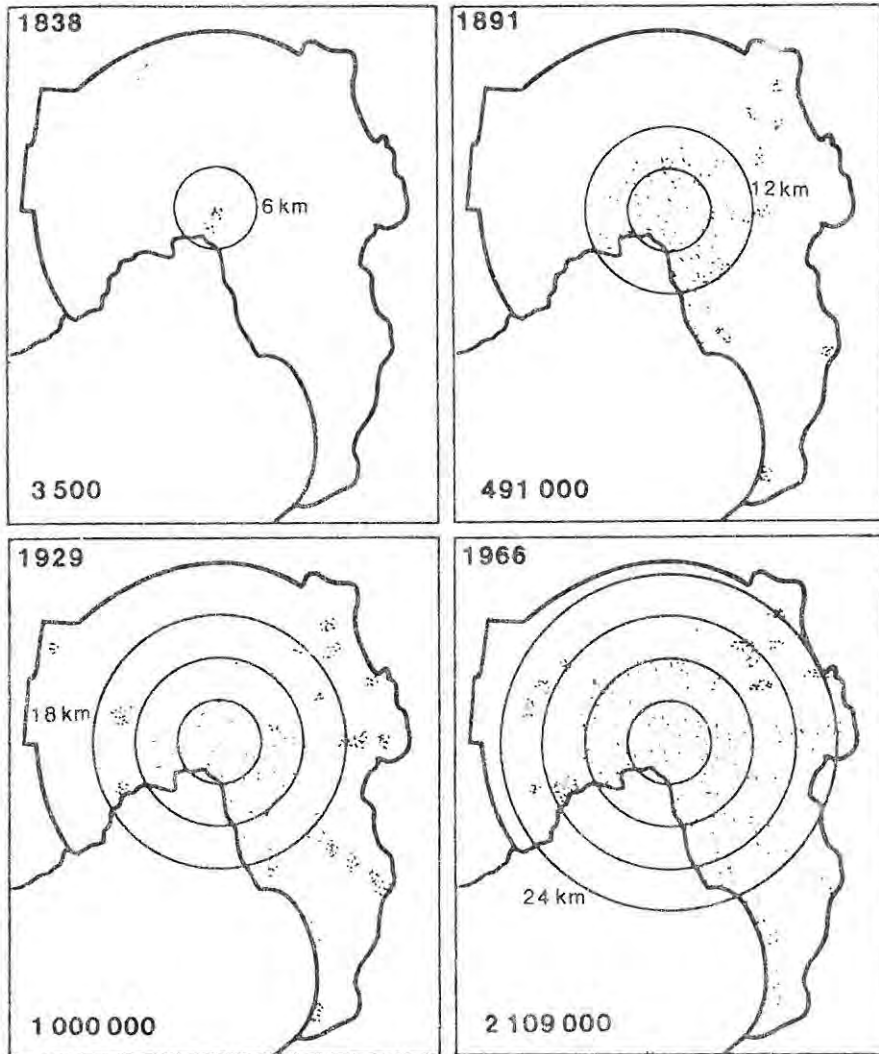
FIGUUR 7



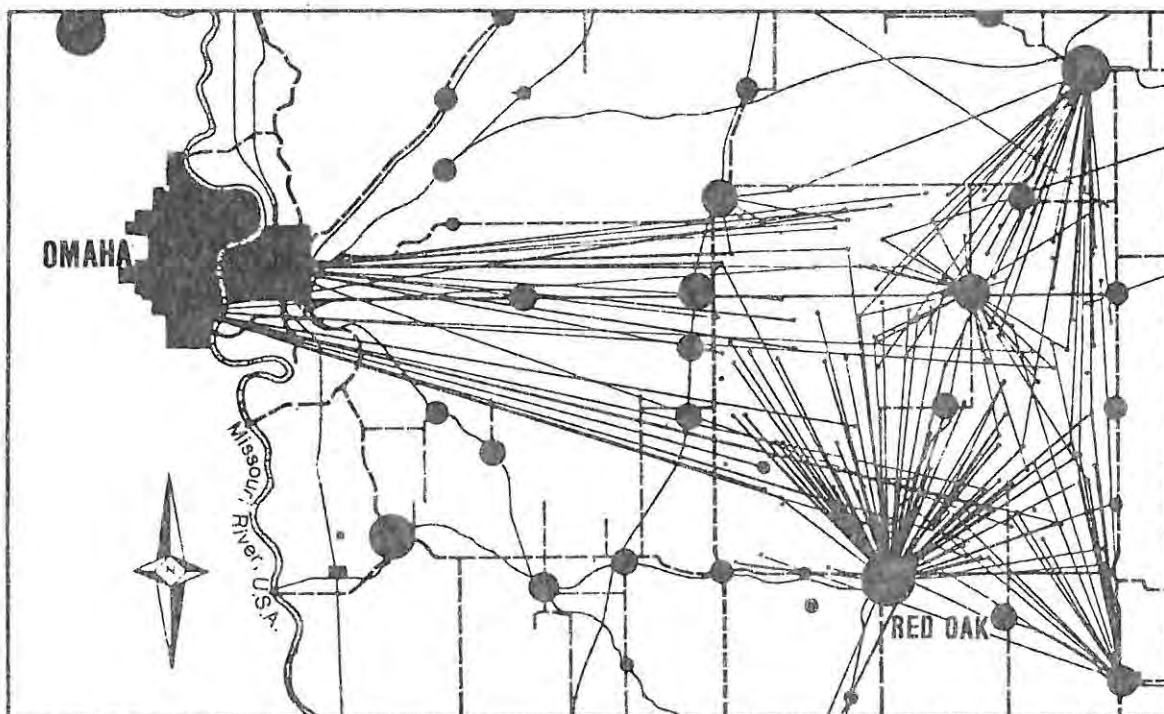
FIGUUR 8



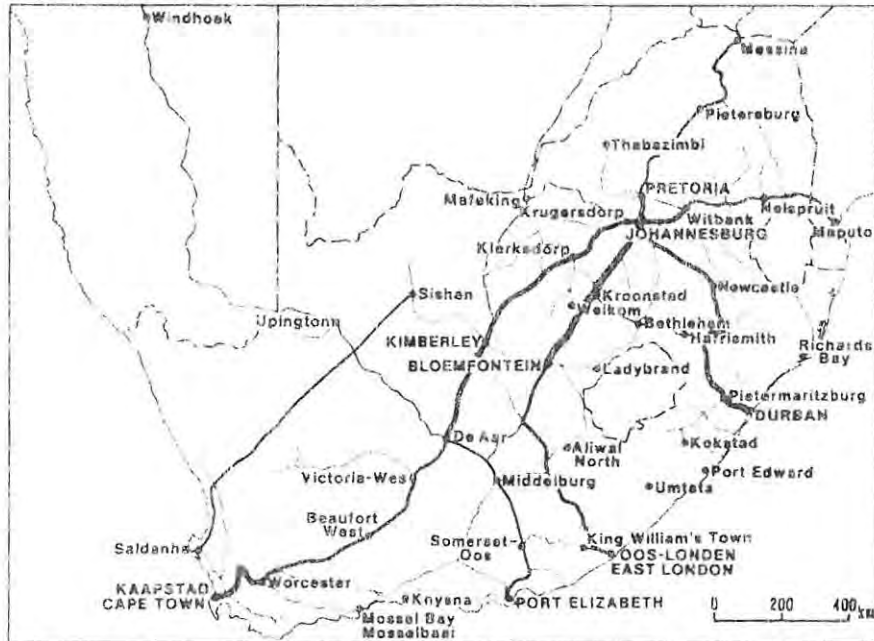
GROWTH OF MELBOURNE, AUSTRALIA (1838-1966)
THE OTHER FIGURES ARE POPULATION TOTALS



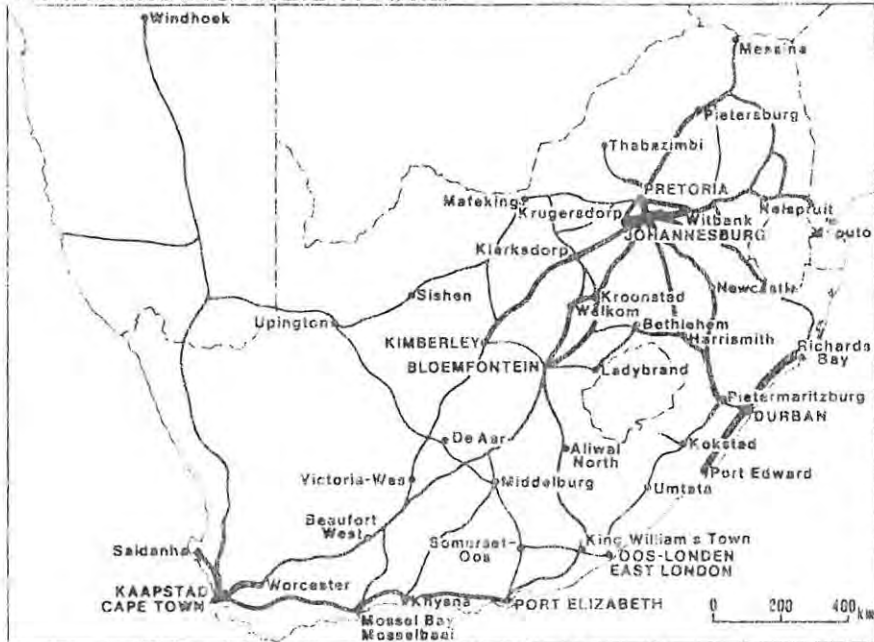
GROEI VAN MELBOURNE, AUSTRALIË (1835-1966)
DIE ANDER FIGURE IS BEVOLKINGSTOTALE



**DENSITY OF TRAFFIC : RAILWAYS
VERKEERSDIGTHEID : SPOORWEE**

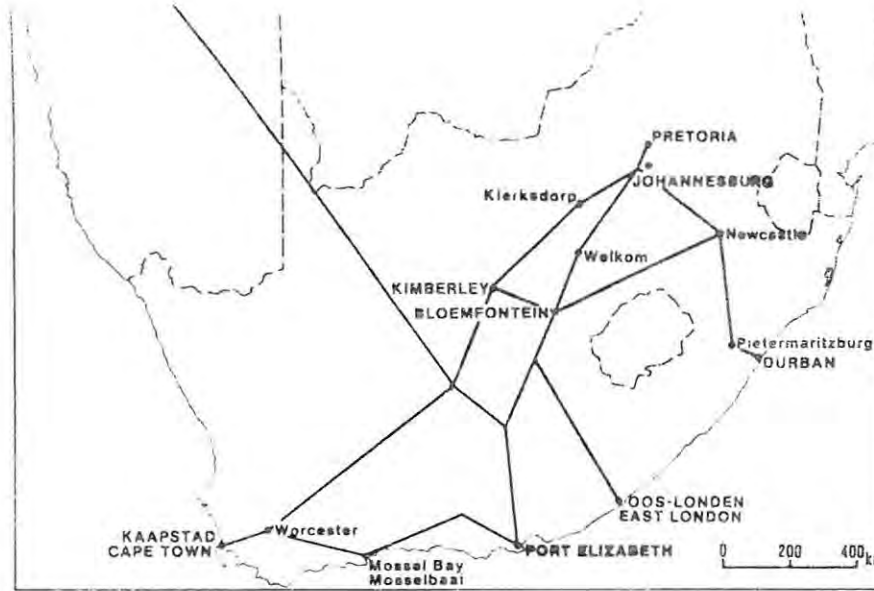


**DENSITY OF TRAFFIC : ROADS
VERKEERSDIGTHEID : PAAIE**



Dis vinniger, geriefliker, veiliger
en baie meer ekonomies as
konvensionele vervoer.

Containerisation pays.
It is faster, more convenient,
safer and much more economical
than conventional transport.



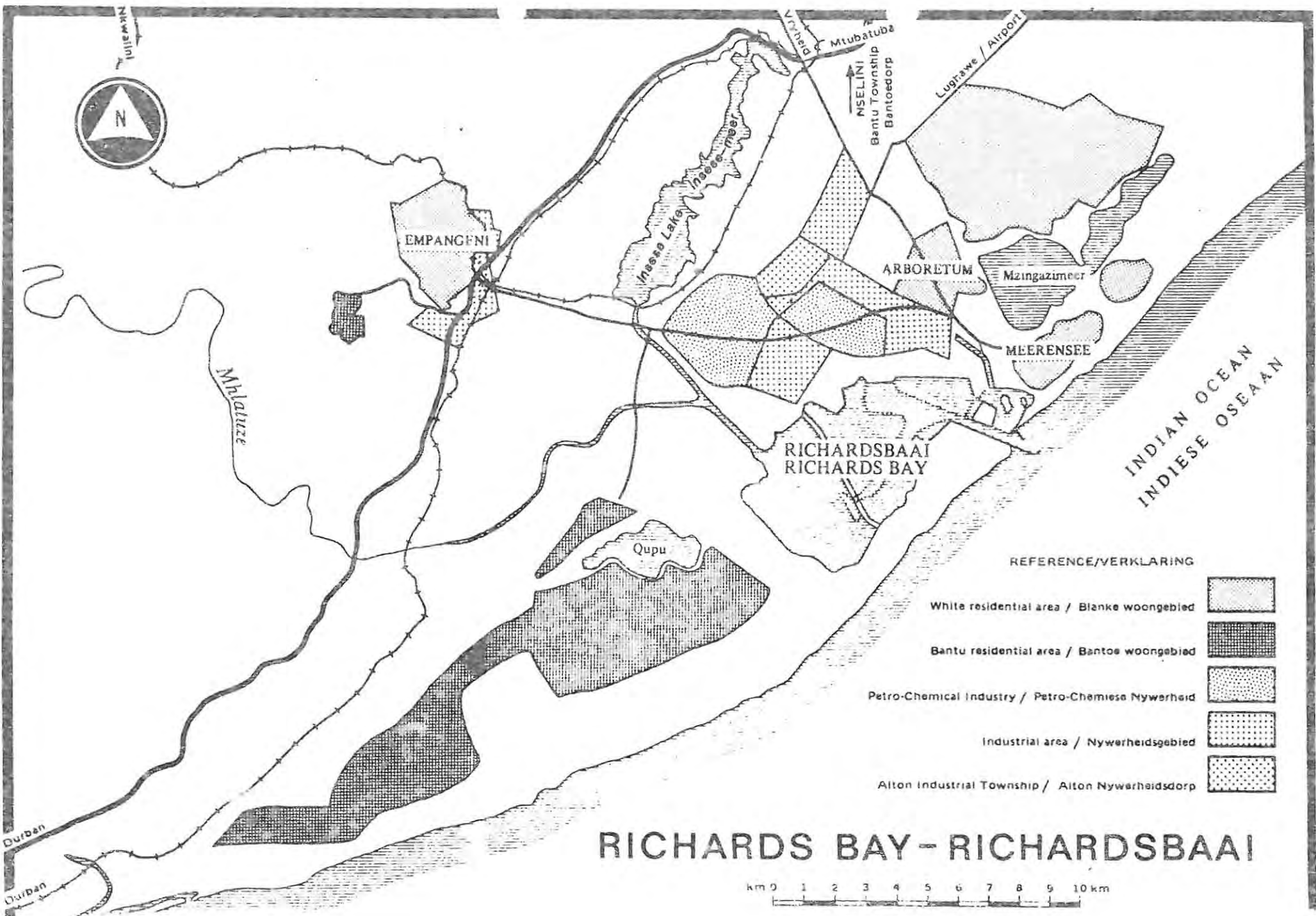
*Sommige van die belangrike behoueringshawes en -geriewe
oor die hele Suid-Afrika.*

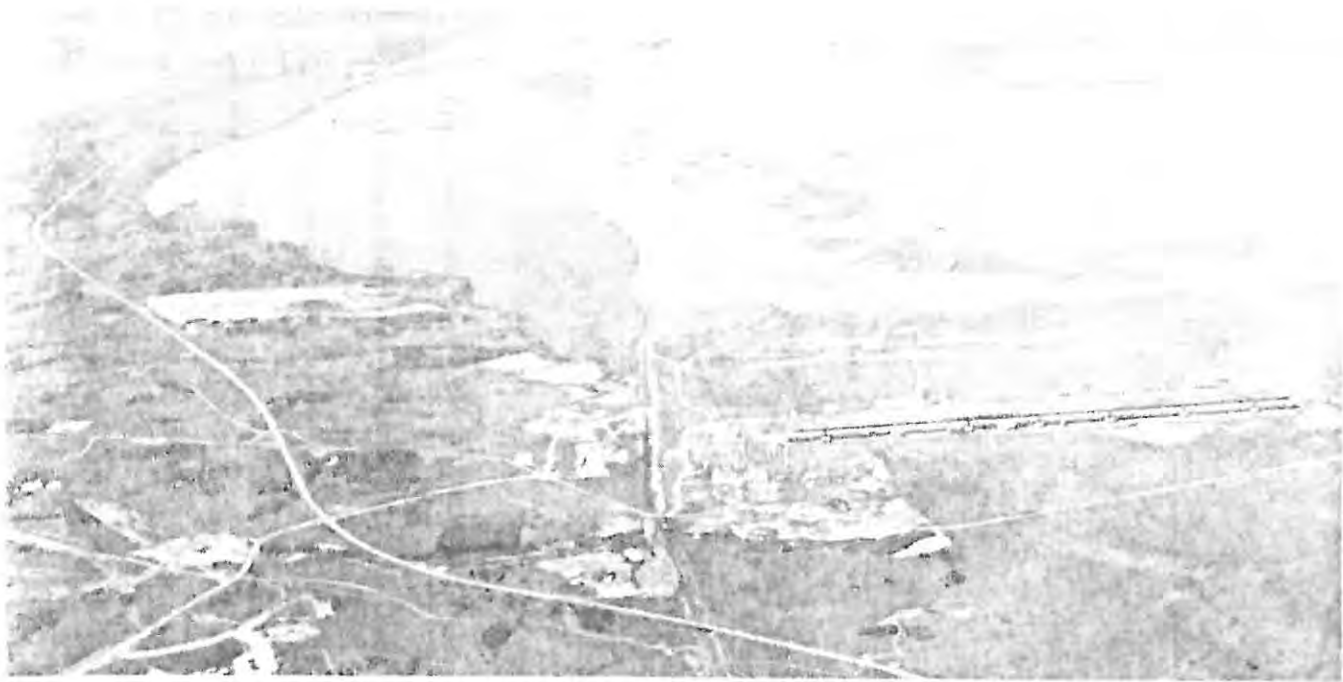
*Some of the major containerisation ports and
facilities throughout South Africa.*

**Suid-Afrikaanse
Spoorweë**



**South African
Railways**

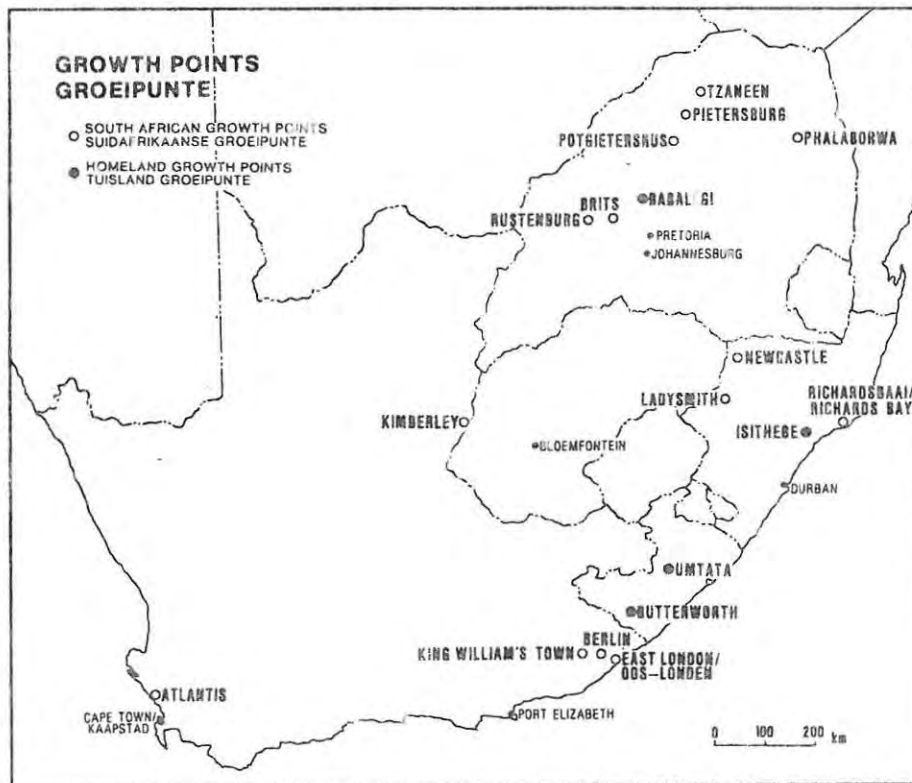




At the mouth of the Umhlatuzi River lies Richards Bay, the aluminium city with a golden future. And Alusaf, South Africa's first primary producer of aluminium, is the pioneering industry of Richards Bay. Alusaf, already an R80-million investment and a growing giant in the industrial world. Alusaf and Richards Bay. The central points of decentralised industrial development.

By die mond van die Umhlatuzi-rivier lê Richardsbaai, die aluminiumstad met die goue toekoms. En Alusaf, Suid-Afrika se eerste primêre aluminiumprodusent en die pionier van nywerheidsvestiging in Richardsbaai. Alusaf, alreeds 'n R80 miljoen belegging is 'n groeiende reus in die nywerheidswêreld. Alusaf en Richardsbaai. Die sentrale punte van desentralisasie.

FIGURE/FIGUUR 15



GEMEENSKAPLIKE MATRIKULASIERAAD
JOINT MATRICULATION BOARD

MATRIKULASIE-EKSAMEN, NOVEMBER/DESEMBER 1979
MATRICULATION EXAMINATION, NOVEMBER/DECEMBER 1979

AARDRYKSKUNDE (HOËR GRAAD) : EERSTE VRAESTEL - PRAKTIES
(80 Punte)

(Tyd/Time: 1 Uur/Hour)

Paneel van Eksaminatore: Mnr. J. Earle
Mev. K. Caselli
Mnr. L.B. Hurry

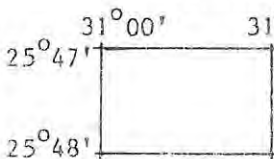
Moderator: Dr. I.C. Nicol

LEES DIE VOLGENDE INSTRUKSIES SORGVULDIG DEUR:

- Bestudeer die 1:50 000 topografiese kaart van Barbertongebied en die skuinslugfoto van die dorp (Barberton) deeglik voordat u die vrae beantwoord.
- Beantwoord al die vrae binne die ruimtes wat op die vraestel voorsien word. Moet asseblief nie hierdie beskikbare ruimte vir elke antwoord oorskry nie. Indien meer ruimte om een of ander rede verlang word, kan die skoon bladsy onmiddellik na die laaste vraag vir hierdie doel gebruik word.
- 'n Blanko bladsy word vir rofwerk aan die einde van die vraestel voorsien.
- Beantwoord al die vrae.
- Hieronder volg 'n seleksie van Afrikaanse en Engelse woorde wat op die kaart voorkom:

dorpsdistrik/gebied	town district
gymkhana-baan	gymkhana ground
natuurreservaat	nature reserve
prospekteergate	prospecting pits
skietbaan	shooting range
skure	sheds
vliegtuiglods	hangar
saagmeule	sawmill
kampong	compound
veekrale	stockpens

- Identifiseer en teken die simbole van drie plantegroeitipes wat in die vierkant 2547/3100 aangetoon word.



-
-
- (3)

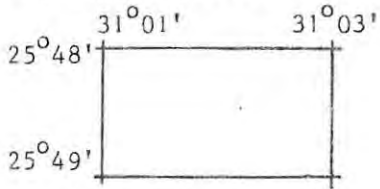
- Noem die natuurlike verskynsels wat by die volgende punte aangetref word:

25° 46' 16" S 31° 03' 10" O

25° 47' 40" S 31° 03' 40" O

(2)

3. Beskryf die hoofkenmerke van die reliëf en dreinerings in die kaartgebied soos hieronder gedefiniëer:



(8)

4. Vergelyk die paddigtheid ten ooste van Barberton met die paddigtheid ten weste van die dorp. Verklaar u waarnemings.

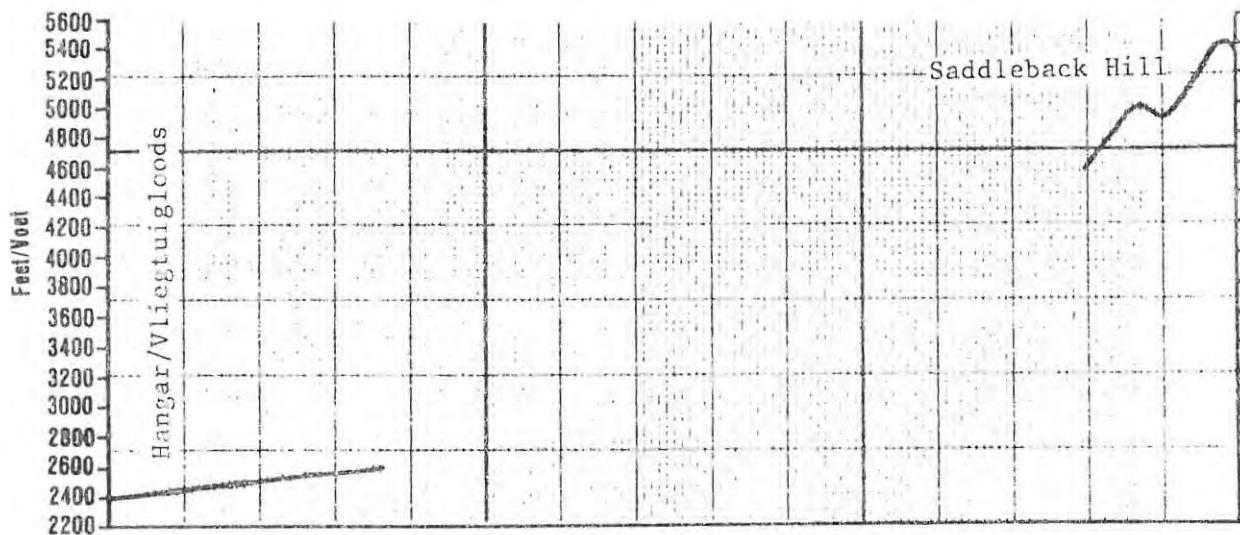
(6)

5. Die foto van Barberton word deur twee geograwe bestudeer. Die een kom tot die gevolgtrekking dat die berge ten ooste van die dorp uit sedimentêre gesteentes bestaan, en die ander een dat hulle uit stollingsgesteentes bestaan. Gebruik bewyse op die foto ter ondersteuning van enigeen van hierdie argumente.

Ter ondersteuning van gesteentesstruktuur _____

(4)

6. Is die vliegtuiglods vanaf die hoogste piek van Saddleback Hill sigbaar? Maak van die onvoltooide deursnee hieronder gebruik om u met die bepaling van die antwoord te help. (Toon die konstruksie aan)



Antw: Die vliegtuiglods is vanaf Saddleback Hill sigbaar/nie sigbaar nie.

7. Noem die mensgemaakte verskynsel wat tussen B20 en D18 op die foto aangetref word.

8. Beskryf die uitleg van Barberton kortliks.

9. U is die enigste geograaf wat op 'n komitee dien, wat advies moet verleen oor die ontwikkeling van die Barbertongebied as 'n toeriste-aantreklikheid. Stel 'n lys saam van die verskynsels in die kaartgebied, wat aangewend kan word om mense vir 'n besoek na Barberton te lok of wat hulle sal oorreed om hulle vakansie daar deur te bring.

NATAL EDUCATION DEPARTMENT
 NATAL SENIOR CERTIFICATE SUPPLEMENTARY EXAMINATION
 HIGHER GRADE

S 21

Page 1

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SC

SUPPLEMENTARY EXAMINATION
 HIGHER GRADE
 GEOGRAPHY

(VIR AFRIKAANS KYK OP KEERSY)

MARCH 1979GEOGRAPHY

Time: 3 hours

- Note: Candidates must answer four questions:
one question from Section A;
one question from Section B;
one question from Section C; and
one further question.

SECTION A

- (a) Thunderstorms are one of the most important weather phenomena in South Africa because for many areas this is the major source of precipitation.
- (1) Referring to Taljaard's model of the thunderstorm explain the formation and dissolution of a thunderstorm. (25)
- (2) Explain why a model, such as this thunderstorm model, is an important aspect of climatology today. (6)
- (3) Important as they are as a source of precipitation, thunderstorms also create problems. Discuss these problems. (9) (40)
- (b) Tropical cyclones are frequently a cause of disaster. Discuss fully the life cycle of a tropical cyclone as well as the effect of tropical cyclones on human settlement. (40)

80

2. (a) (1) Which river in South Africa has the largest drainage basin? Comment briefly on the extent of its drainage area and the volume of water involved in this drainage area. (10)
- (2) Refer to the sketch map of the Sarahs River region taken from a 1 : 50 000 topographical map of Montagu in the South-West Cape and indicate on the sketch map:
- (i) three different drainage patterns (give their names) (6)
- (ii) one watershed (2)
- (iii) the stream order of the river marked A (3)
- (3) Choose any two of the drainage patterns shown on this map of the Sarahs River region. Discuss how they may be formed and their typical features. Name other examples of these patterns. (14)
- (4) Explain briefly why a knowledge of drainage patterns helps in the understanding of a landscape. (5) (40)
- (b) (1) Discuss the various landscape features that occur as a result of inclined strata. Give examples of where such features may be seen. (30)
- (2) Explain briefly how such features may influence human settlement, both urban and rural. (10) (40)

80

SECTION B

3. (a) Brasilia is the new capital of Brazil, having replaced Rio de Janeiro in 1960 (see Map A in the Map Book). Discuss possible advantages and disadvantages of moving a capital from the coast to the interior. (10)
- (b) Study maps B and C in the Map Book which show the siting of these two cities. Brasilia is sited in an undeveloped area of very gently undulating grassland, while Rio de Janeiro is situated on a sunken coastline. What advantages are offered by Brasilia's site above those of Rio de Janeiro? (6)
- (c) Compare and contrast the planning of the two cities as shown on maps B and C. (12)
- (d) Whilst Brasilia was being built the labourers lived in unplanned "squatter camps" outside the city. These camps have now become flourishing, permanent settlements.
- (1) Why do such areas continue to flourish, not only around Brasilia but also around many cities in developing countries? (10)

- (2) Discuss some of the problems that can arise in such areas. (15)
- (3) Some cities however develop satellite towns which are high-income residential areas. Explain why this occurs and why the major town often regards these satellite towns with disfavour. (12) (37)

- (e) The older cities of Europe have gone through several characteristic periods of expansion associated with different forms of transport. Explain the stages which Brasilia, founded in 1960, will not pass through and discuss briefly some of the possible effects this may have upon the city. (15)

80

4. Look at the land-use map of Paris (Map D in the Map Book).

- (a) Discuss the advantages and disadvantages experienced by businesses located in the Central Business District (Marked 'D'). (15)

- (b) The zone of transition (marked E), bordering the Central Business District, is characteristic of all towns and cities. Even though you may not know Paris, what type of activities would you expect to find in this zone of transition? Give reasons for your statements. (10)

- (c) Account for the position of the various types of residential areas that are shown on the map. (15)

- (d) (1) The main industrial areas are along the river banks. Give possible reasons for this. (6)
- (2) Some of the smaller industrial areas are located in apparently unusual places. Give possible reasons for each of the locations of industrial zones A and B. (6) (12)

- (e) In the planning of cities much stress is laid on the importance of recreational areas.
- (1) Why are recreational areas considered so important by town planners today? Give examples of various recreational facilities provided for in modern city planning. (10)
- (2) Discuss the siting of the recreational areas in Paris. (5) (15)

- (f) (1) What model of urban structure most closely fits Paris? (2)
- (2) What major features disrupt the model in the case of Paris? Explain how this disruption has occurred. (5)
- (3) Using Paris as an example, explain why the use of models to describe urban patterns, has distinct disadvantages. (6) (13)

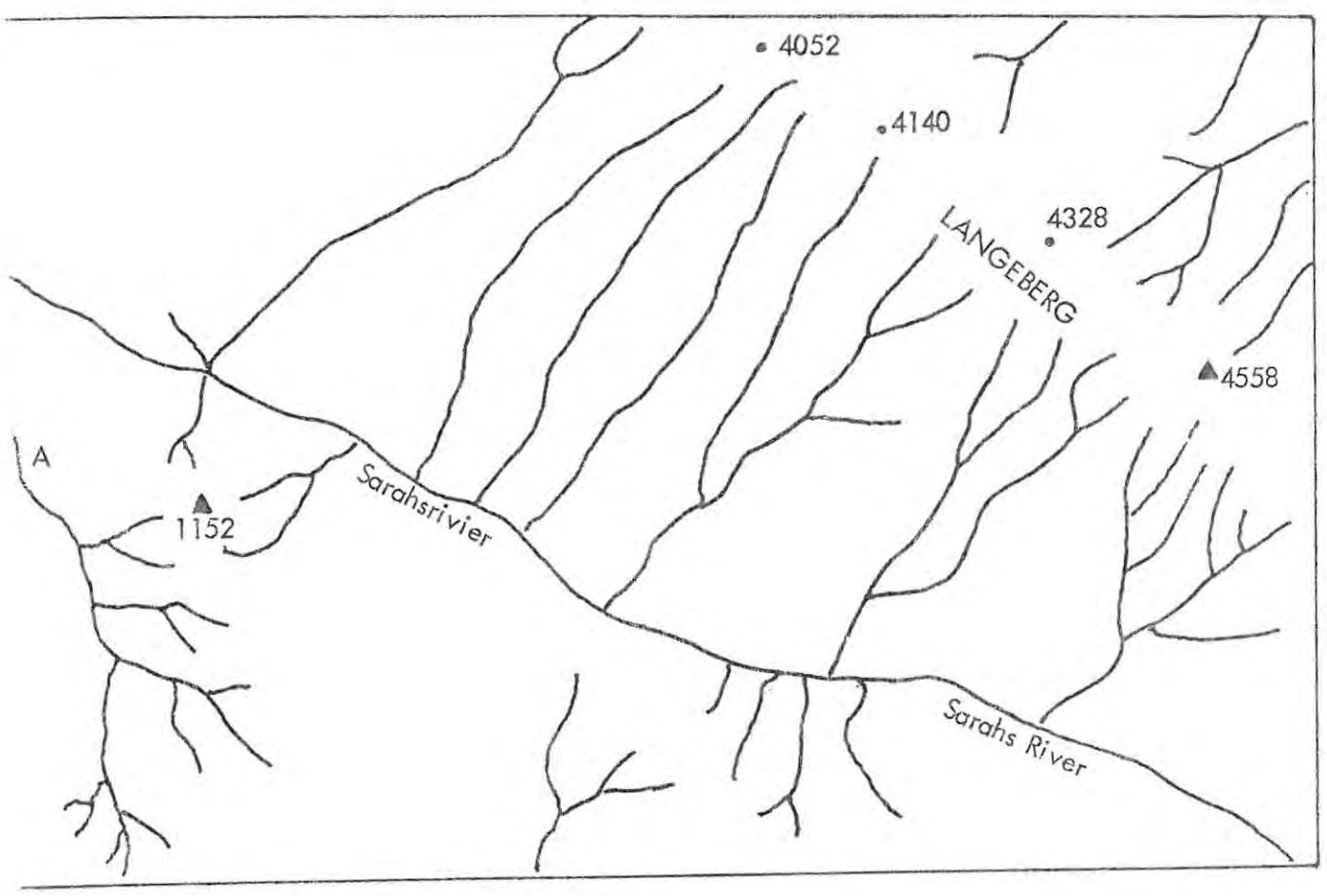
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SECTION C

5. (a) Refer to map E on page 3 of the Map Book which shows the distribution of population in South Africa, and account for the distribution shown by this map. (40)
- (b) Referring to the Table 'Population in the RSA 1904 - 1970' (on page 5 in the Map Book) comment on the composition of South Africa's population. (10)
- (c) Choose any one of the Black Homelands or newly independent states and comment on its ability to cope with the problems created by a rapidly expanding population. (30)
- 80
6. In the last twenty years millions of rands have been spent by the State, by large companies and by private individuals in an endeavour to provide South Africa with an assured water supply.
- (a) Explain briefly why this expenditure has been so necessary in South Africa. (10)
- (b) Discuss any one water conservation scheme or water redistribution scheme recently constructed or at present under construction. Include in your discussion a clear explanation of the purpose of the scheme. (30)
- (c) Discuss the pastoral activity that you have studied and the factors which cause variation in annual production. (40)
- 80
7. Discuss in some detail the possibility of South West Africa becoming a viable economic entity once it attains independence in the near future.
- 80

TOTAL: 320

Candidate's Examination Number
Kandidaat se Eksamennommer



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MARCH 1979

GEOGRAPHY
MAP BOOK




HIGHER GRADE / HOËR GRAAD

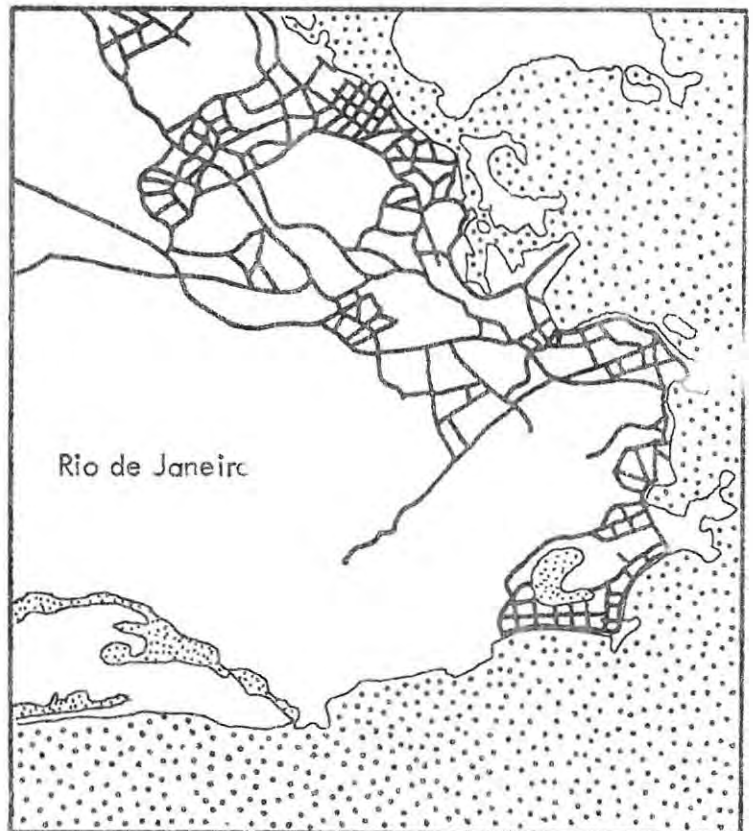
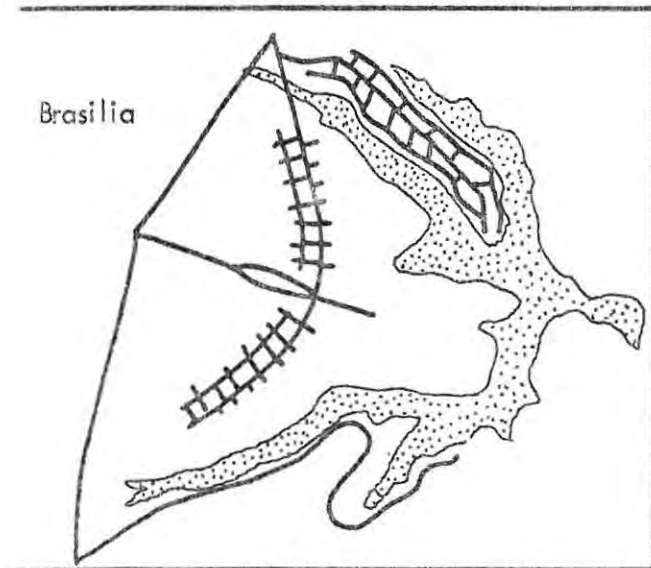
STANDARD GRADE / STANDAARDGRAAD

NATALSE ONDERWYSDEPARTEMENT
NATALSE SENIOR SERTIFIKAATEKSAMEN
MAART 1979

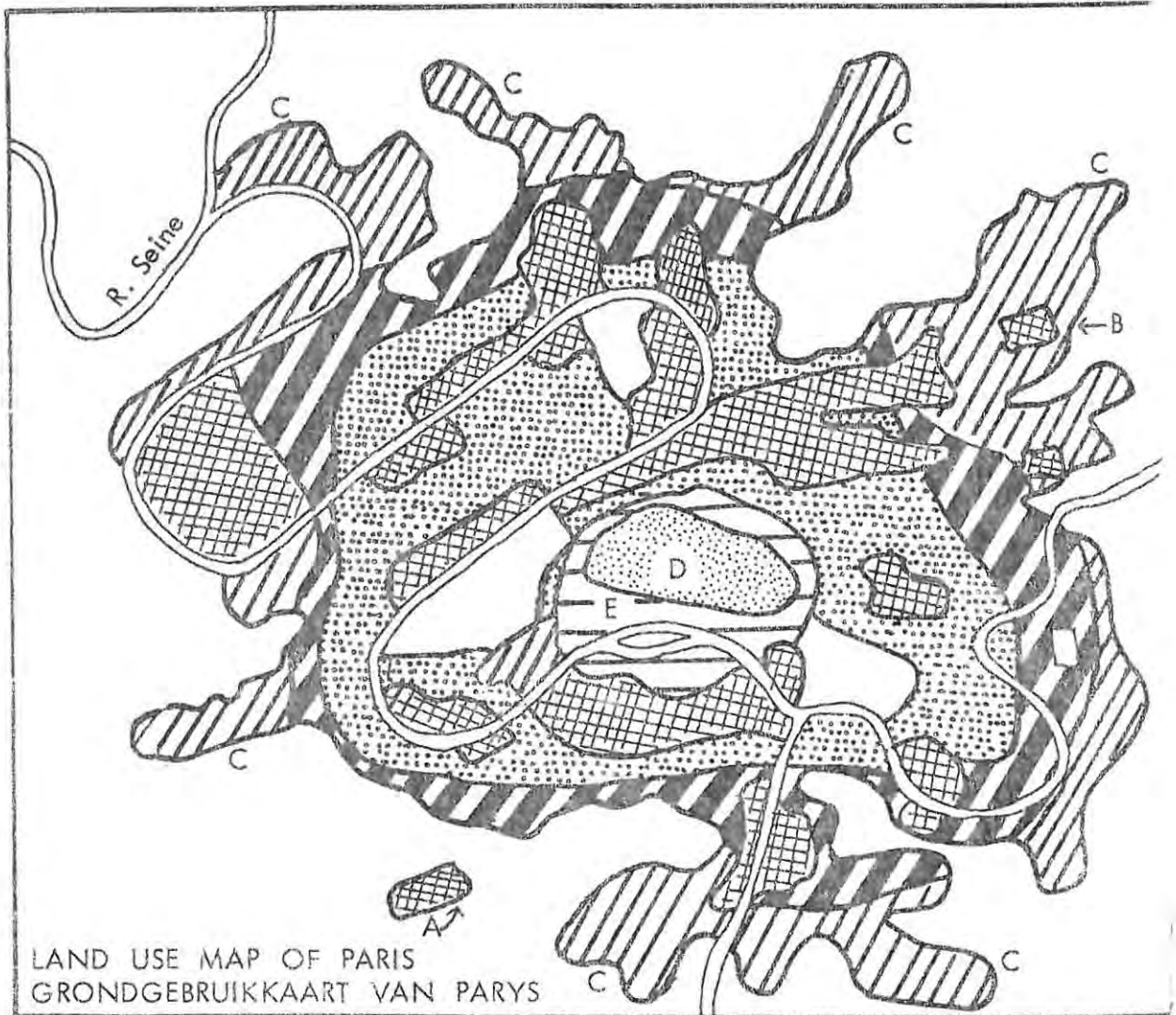
AARDRYKSKUNDE
LANDKAARTBOEK











-  Major Roads / Hoofpaaie
-  Sea / See
-  Lakes and Lagoons / Mere en Lagunes



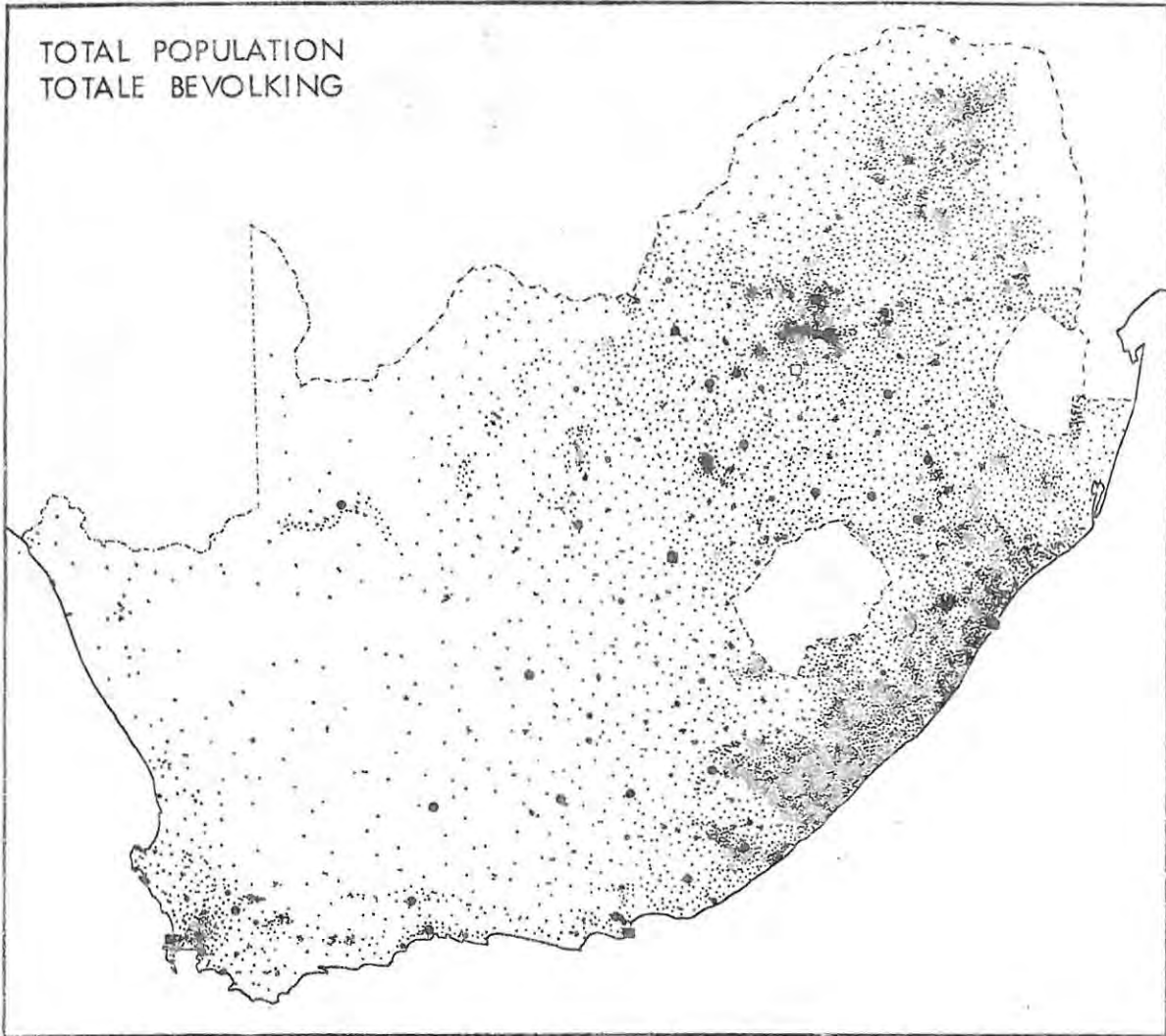
Map D
Kaart D



LAND USE MAP OF PARIS
GRONDGEBRUIKKAART VAN PARYS

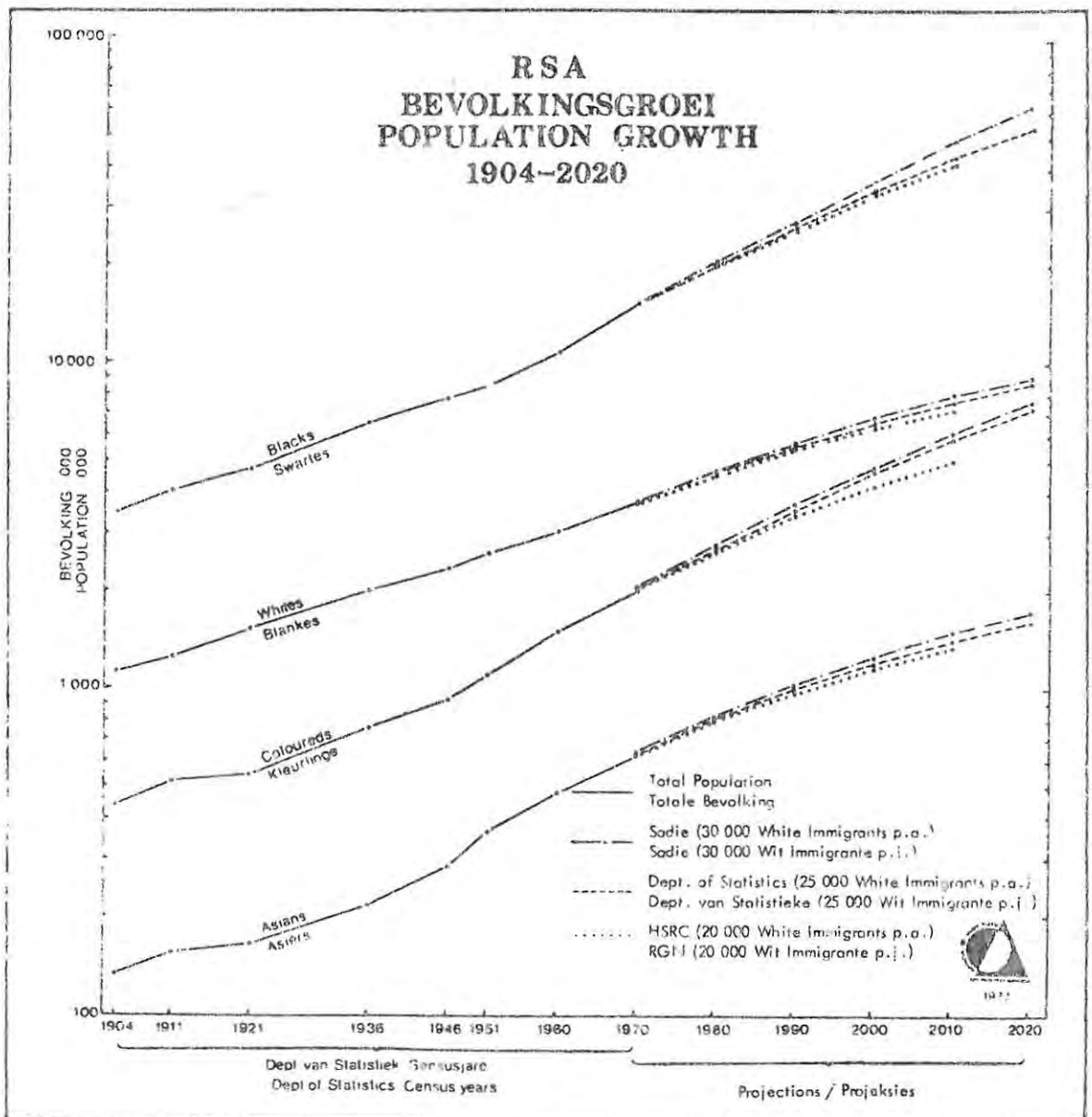
- | | | | |
|---|---|--|--|
|  | Low cost housing area
Lae koste behuisingsgebied |  | Major recreational area
Hoofontspanningsgebied |
|  | Medium cost housing area
Medium koste behuisingsgebied |  | Shops and offices
Winkels en kantore |
|  | High cost housing area
Hoë koste behuisingsgebied |  | Area of transition (Redevelopment)
Oorgangsgebied (Herontwikkeling) |
|  | Industrial area
Industriële gebied |  | River
Rivier |

Map E
Kaart E



Gemiddelde bevolkingsdigtheid per km ² Average population density per km ²	
Nederland / Netherlands	395
Verenigde Koningryk / United Kingdom	228
Egipte / Egypt	34
Republiek van Suid-Afrika / Republic of South Africa	18

Gemiddelde bevolkingsdigtheid per km ² vir elke provinsie Average population density per km ² for each province	
Natal	49
Transvaal	31
OVS / OFS	13
Kaapprovinsie / Cape Province	9



TABEL 1: BEVOLKING VAN RSA¹. 1904 - 1970

TABLE 1: POPULATION IN THE RSA¹. 1904 - 1970

	1904	1911	1921	1936	1946	1951	1960	1970
ASIANS ASIËRS	132 615 ²	157 981 ²	165 731	219 691	285 260	366 664	477 125	630 372
COLOUREDS KLEURLINGE	436 247 ²	519 688 ²	545 181	769 241	298 062	1 103 016	1 509 258	2 050 699
WHITES BLANKES	1 117 741	1 276 210	1 519 206	2 003 334	2 372 044	2 641 689	3 088 492	3 773 282
BLACKS: SWARTES:								
Total / Totaal:	3 488 384	4 018 878	4 697 285	6 595 597	7 830 559	8 560 083	10 927 922	15 339 975
Homelands / Tuislande:	1 904 633	2 006 376	2 304 092	3 056 718	3 256 324	3 309 410	4 125 827	7 138 197
TOTAL TOTAAL	5 174 987	5 972 757	6 927 403	9 587 863	11 415 925	12 671 452	16 002 797	21 794 328
SOURCE: Dept. of Statistics		BRON: Dept. Statistiek						
1. Includes Transkei which became independent on 26 October 1976.		1. Sluit Transkei, wat op 26 Oktober 1976 onafhanklik geword het, in.						
2. Estimates as Asians and Coloureds are not enumerated separately.		2. Ramings van gesien Asiërs en Kleurlinge nie afsonderlik getel is nie.						

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MINISTERIE VAN ONDERWIJS EN WETENSCHAPPEN

Kenmerk C 800245 VO/AV 80-33

Datum 18 augustus 1980

Onderwerp

Concept eindexamenprogramma aardrijkskunde voor het v.w.o.

Groep en
volgnummer

Aan

— de rectoren van de dag- en avondscholen voor v.w.o.

Hierbij doe ik U 4 exemplaren van het concept-eindexamenprogramma aardrijkskunde voor het v.w.o., opgesteld door een op mijn verzoek in overleg met het K.N.A.G. gevormde commissie, toekomen.

Ik verzoek U deze aan de sectie aardrijkskunde van Uw school ter hand te stellen.

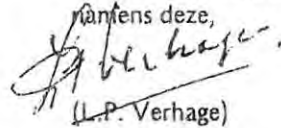
Eventuele reacties in de vorm van commentaar, op- en/of aanmerkingen verzoek ik U vóór 1 januari 1981 te zenden aan Inspecteur A. van Voskuilen, Breedstraat 42 A, 1811 HG Alkmaar.

Voor bijzondere gevallen zijn nog een gering aantal extra exemplaren beschikbaar. Indien onverhoopt het hierbij toegezonden aantal exemplaren van het concept-eindexamenprogramma niet reikend zou zijn, kunt U schriftelijk enkele extra exemplaren aanvragen bij onderstaand adres:

Ministerie van Onderwijs en Wetenschappen,
afd. VO/AV/B
Nieuwe Uitleg 1, postbus 20551,
2500 EN 's-Gravenhage.

Staatssecretaris drs. K. de Jong Ozn.,

vanfens deze,



(L.P. Verhage)

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CONCEPT- EINDEXAMENPROGRAMMA AARDRIJKSKUNDE VOOR HET V.W.O.

VOORWOORD

Sedert 1970, toen de eindexamenprogramma's voor het VWO, HAVO en MAVO bij beschikking van de Staatssecretaris van onderwijs en wetenschappen werden vastgesteld, zijn van verscheidene vakken de eindexamenprogramma's gewijzigd.

Enkele jaren geleden richtte Staatssecretaris Drs. K. de Jong Ozn. zich tot de Inspectie met het verzoek om in overleg met het KNAG een commissie in het leven te roepen die zich bezig zou gaan houden met het opstellen van nieuwe eindexamenprogramma's aardrijkskunde voor het VWO, HAVO en MAVO.

In de commissie die als gevolg van bovenstaand verzoek werd ingesteld namen personen zitting die afkomstig waren uit alle betrokken geledingen van het aardrijkskunde-onderwijs. De bij het opstellen van het nieuwe eindexamenprogramma gevolgde procedure komt in grote lijnen overeen met de procedures zoals die door andere vakken bij het opstellen van nieuwe programma's zijn gevolgd.

Om verscheidene redenen was het opstellen van nieuwe eindexamenprogramma's voor het vak aardrijkskunde gewenst. Mede door de invoering van het verplicht Centraal Schriftelijk Eindexamen voor aardrijkskunde was de behoefte aan minder globaal omschreven eindexamenstof toegenomen. Samenhangend daarmee noopten de problemen van de steeds wisselende onderwerpen voor dat Centraal Schriftelijk Eindexamen tot bezinning. Tevens diende het relatieve aandeel van de sociaal- en fysisch-geografische leerinhouden in het eindexamenprogramma heroverwogen te worden. In net op te stellen programma zou tenslotte ook meer

aandacht geschonken moeten worden aan de huidige onderwijskundige en onderwijs-geografische inzichten. Het bleek voor de commissie geen eenvoudige taak om tot keuze en formulering te komen van de inhouden die op het examen getoetst dienen te worden. De commissie maakte hierbij gebruik van een aantal publicaties, onder andere van het "Eerste rapport inzake opleiding van leraren in de aardrijkskunde" van de Commissie Opleiding Leraren, Het Rapport van de Commissie Doeleinden Aardrijkskunde-onderwijs van het KNAG en het memorandum "Richtlijnen voor leerplanontwikkeling met betrekking tot de aardrijkskunde" van de Commissie Modernisering Leerplan Aardrijkskunde.

De keuze de werkzaamheden te beginnen met het eindexamenprogramma voor het VWO werd in overleg met de afdeling Onderwijs van het KNAG gemaakt. Bij dit schooltype is de behoefte aan eindexamenstof die meer is geëxpliciteerd dan die welke in het huidige programma is omschreven, het grootst. De commissie hoopt spoedig, na de verwerking van de reacties van aardrijkskundedocenten op dit VWO-programma, verder te gaan met het opstellen van concept eindexamenprogramma's voor het HAVO en MAVO.

Dit concept-eindexamenprogramma aardrijkskunde voor het VWO telt drie hoofdstukken. Het eerste hoofdstuk is bedoeld om de betrokkenen bij meningsvorming meer zicht te geven op de overwegingen van de commissie die haar hebben geleid bij het opstellen van het programma en de haar voor ogen staande inhoud van de themata. De hoofdstukken twee en drie, respectievelijk "Het programma aardrijkskunde eindexamen VWO" en "Uitwerking van het programma" kunnen te zijner tijd samen het officiële eindexamenprogramma vormen.

Namens de commissie,

A. van Voskuilen (Inspecteur AVO),
voorzitter

J. A. Koppen,
secretaris

Commissieleden:

f. Bekel
Dr. K. Bouwer
Dr. H.J.M. Claessen
Dr. J.A. van Ginkel
Drs. L.W.S. de Graaff
Dr. H. Hack
Drs. C. de Heus
Drs. G. Hoekveld-Meyer
I.Ch.M. Jorna
Drs. J.A. Koetsier
Drs. F. Lambriks
Drs. W.A.J. Lentjes
Drs. J.M. van Mourik
Dr. L. Serpent

Eelde
Nijmegen
Wassenaar
De Bilt
Ursem
Paterswolde
Amsterdam
Baarn
Odijk
Amsterdam
Broekhuizenvorst
Sprang Capelle
Monnickendam
Epen.

WOORD VOORAF

Het concept-eindexamenprogramma aardrijkskunde voor het V.W.O., samengesteld door de in overleg met het Koninklijk Nederlands Aardrijkskundig Genootschap in het leven geroepen redactiecommissie ter opstelling van een nieuw eindexamenprogramma aardrijkskunde, wil ik graag als discussienota in Uw aandacht aanbevelen.

Het woordgebruik concept-eindexamenprogramma suggereert reeds dat het laatste woord over een definitief programma nog niet is gesproken. Nu is het woord aan U.

Zoals bij alle zaken die een wijziging teweeg brengen — en zeker geldt dit voor eindexamenprogramma's — komen heel wat al dan niet verwachte aspecten om de hoek kijken.

Voordat de redactiecommissie het werk kan afronden wordt U de gelegenheid geboden te reageren op het voorliggende concept. Aan de hand van Uw reacties kan het eindrapport worden samengesteld, waarbij U ervan kunt uitgaan dat zoveel mogelijk rekening zal worden gehouden met op- en aanmerkingen, die door de "veldwerkers" worden gemaakt.

Onder dankzegging aan de commissie voor wat tot op heden is verricht, beveel ik dit concept-eindexamenprogramma aardrijkskunde voor het v.w.o. dan ook van harte ter bestudering bij U aan, zodat op basis van het te zijner tijd te verschijnen eindrapport het gewijzigde eindexamenprogramma gestalte kan krijgen.

Staatssecretaris drs. K. de Jong Ozn.,



HOOFDSTUK 1. OVERWEGINGEN

1.1. Doelstellingen

Aan de geformuleerde eindexameneisen liggen een drietal onderwijsdoelstellingen ten grondslag.

Deze doelstellingen betreffen:

1. de maatschappelijke vorming van de leerling
2. zijn/haar voorbereidend wetenschappelijke vorming
3. zijn/haar persoonlijke vorming.

ad 1. De minimumgarantie dient verkregen te worden dat de geslaagde eindexamenkandidaat de beschikking heeft verkregen over een geheel van kennis-inhouden en vaardigheden die hem/haar in staat stelt zelfstandig de geografische werkelijkheid te benaderen en zo zijn/haar houding te bepalen ten opzichte van de ontwikkeling van de samenleving en haar milieu.

ad 2. Het eindexamenprogramma aardrijkskunde voor het VWO dient krachtens de bedoeling van die opleiding ook voorbereidend wetenschappelijk van karakter te zijn. Dit impliceert dat enige basiskennis van wetenschappelijke methoden in het algemeen en die van de geografie in het bijzonder tot het programma zal behoren.

ad 3. Het eindexamenprogramma dient zodanige voorwaarden te bieden dat ook individuele voorkeuren van de leerling hun kans krijgen. In het bijzonder biedt het veldpracticum de gelegenheid deze persoonlijke wensen te realiseren.

2. Enige opmerkingen over de geografie als wetenschap.

De grote diversiteit aan opvattingen omtrent de geografie als wetenschap maakt het van het grootste belang dat bij een algemeen landelijk schriftelijk eindexamen aardrijkskunde een zekere consensus over de inhoud van het vak bestaat.

Aan het voorliggende programma ligt de voor de geografie kenmerkende ruimtelijk-ecologische benadering van de werkelijkheid ten grondslag.

Hierin komen begrippen, generalisaties en theorieën uit de sociale geografie en de fysische geografie, alsmede uit hun hulp- en zusterwetenschappen, bij elkaar. Essentieel in deze benadering is dat sociale en fysische verschijnselen worden gezien in hun ruimtelijke context. Het kernbegrip ruimte heeft in deze samenhang een veel omvattende betekenis en wordt zowel opgevat als:

- de ecologische basis van de samenleving;
- het fysieke kader waarbinnen mensen hun activiteiten ontplooiën;
- afstand en (te overwinnen) belemmering voor contacten in de meest ruime zin;
- plaats(en) met een eigen symbolische waarde;
- en ook als een gestructureerd geheel van menselijke betrekkingen.

Kenmerkend voor de geografie in deze veelzijdige benadering is dat zij niet alleen analytisch en abstract, maar juist ook integratief en concreet van aard is. Daarom moet gedegen confrontatie van theoretische kennis aan concrete situaties in het

veld, met aandacht voor zowel sociaal- alsook natuur-wetenschappelijke aspecten, onmisbaar worden geacht voor een goed inzicht in de complexe geografische werkelijkheid.

1.3. Methoden en technieken

Het voorbereidend wetenschappelijk karakter van het eindexamenprogramma impliceert dat het gewenst is dat de kandidaten enige basiskennis van wetenschappelijke methoden en technieken in het algemeen en die van de geografie in het bijzonder bezitten en deze kunnen hanteren. De vaardigheid om hiermee te werken kan een bijzonder accent in het veldpracticum krijgen.

Aangezien de geografie een empirische wetenschap is trachten haar beoefenaars hun kennis te vergroten door middel van ervaringen ofwel observaties van de werkelijkheid. Deze observaties zijn niet willekeurig maar zijn gericht op het ten behoeve van een onderzoek gestelde doel. Het moet de leerling duidelijk zijn dat een onderzoek moet uitgaan van een geformuleerde probleemstelling. Hoewel het in het VWO niet gaat om een volledig wetenschappelijk verantwoorde wijze van werken dient de leerling wel een "onderzoekhouding" te worden bijgebracht. Dit houdt in dat hij/zij inzicht moet hebben in de betekenis van en de wijze waarop geobserveerd en gegevens verzameld worden. Daarbij moet hij/zij kennis, inzicht en vaardigheid verkrijgen ten aanzien van verwerving en verwerking van gegevens en de daarop berustende verslaggeving.

1.4. Het veldpracticum

Het veldpracticum is een werkvorm die in het aardrijkskunde-onderwijs en in de examinering een plaats verdient omdat daardoor een directe confrontatie met de concrete werkelijkheid mogelijk is. Bovendien geeft het een bepaalde speelruimte aan de eigen inbreng van de school zowel binnen het onderwijs als binnen de examinering. Deze examinering zal bestaan uit de beoordeling van een schriftelijk verslag als deel van het schoolonderzoek.

Op verschillende gronden kan de opname van het veldpracticum in een VWO-eindexamenprogramma worden verdedigd:

- a. Dit zelfstandig verzamelen en bewerken van gegevens heeft een belangrijke functie in de voorbereidend wetenschappelijke vorming van de kandidaat en kan bijdragen tot een meer geïntegreerd logisch denken.
- b. Een veldpracticum kan voor de aanstaande volwassene een bijdrage vormen tot een kritische waardering van landschap en leefmilieu, opdat hij als burger later kan participeren bij het verbeteren daarvan.
- c. Een veldpracticum kan persoonlijkheidsvormende kwaliteiten bezitten doordat het confronteren met de realiteit van landschap en omgeving de persoonlijke beleving en het recreatief genieten kan verrijken.
- d. Didactisch bezit een veldpracticum een grote motiverende waarde. Aardrijkskunde-onderwijs kan mede hierdoor meer "realiteitsonderwijs" worden.

Enkele mogelijkheden van toepassing zijn:

1. *Stadsgeografie*

- stedelijk grondgebruik
- grondgebruik in de stedelijke randzone
- historisch-geografisch stadsonderzoek
- verschuivingen in het stedelijk grondgebruik (kantoren, winkels)
- bebouwingsdichtheden en grondgebruik in stadsuitbreidingen
- hiërarchie van nederzettingen rond de stad

2. *Geografie van het landelijk gebied*

- het nederzettingenpatroon
- voorzieningenniveau van kernen in relatie tot grootte en afstand tot stedelijke centra
- historisch-geografisch onderzoek naar landschappelijke elementen (boerderijen, houtwallen, verkaveling)
- recreatie en recreatiedruk in relatie met de afstand tot stedelijke kernen.

3. *fysische geografie*

- landschapskartering (inventarisatie van gesteente, bodem, grondgebruik)
- landschapsgenese (verzamelen van gegevens voor de reconstructie van de landschapsgeschiedenis)
- grondonderzoek (analyse van grondmonsters voor de uitwerking van een probleemstelling)
- procesonderzoek (meetbaar maken van fysisch-geografische processen, zo mogelijk door simulaties)
- milieu-evaluatie (het kwaliteitsaspect van het milieu onderzoeken).

In de meeste van de hierboven genoemde thema's kunnen kwantitatieve methoden worden toegepast. Het is denkbaar dat in een overgangperiode na het van kracht worden van het examenprogramma in die gevallen waar een veldpracticum problemen oplevert een vervangende activiteit wordt verricht, bv. een literatuuronderzoek gecombineerd met excursies. Dit laatste om de noodzakelijke confrontatie van theoretische kennis aan concrete situaties in het veld te garanderen.

1.5. *De keuze van thema's en regio's*

Op grond van de hiervoor genoemde doelstellingen zijn thema's wenselijk die:

- a. op basis van geografische vakinhouden kunnen bijdragen tot een zekere voorbereidend wetenschappelijke vorming;
- b. maatschappelijke relevante processen, relaties en kenmerken aan de orde stellen ten aanzien waarvan de leerling zijn/haar houding kan leren bepalen; en waarmee hij/zij als toekomstig volwassene zal kunnen worden geconfronteerd;
- c. door hun inhoud de leerlingen in staat stellen ontplooiing te geven aan persoonlijke interesses en gelegenheid bieden een persoonlijk accent

in de eindexamenstof aan te brengen.

Binnen de geografie bieden zich daartoe aan

- de sociaal-geografische thema's:
 - Bevolking
 - Stad en platteland
 - Territorialiteit
 - Ruimtelijk beleid
 - Ontwikkelingsproblematiek
- de fysisch-geografische thema's:
 - Klimaat
 - Landschapsfeer
- het ecologisch-geografische thema:
 - Mens en milieu.

Deze thema's worden in paragraaf 1.6. en hoofdstuk 3 verder toegelicht.

Bovengenoemde thema's dienen te worden toegepast op een vergelijkender wijze behandeld te worden aan enkele regio's. Uitgaande van de doelstellingen en de motivering van de keuze der thema's kunnen criteria worden vastgesteld met behulp waarvan de regio's kunnen worden gekozen. Deze criteria zijn:

1. de verscheidenheid aan maatschappelijke stelsels
2. de verscheidenheid in ontwikkelingsniveau
3. de betekenis in het wereldgebeuren
4. de verscheidenheid in fysisch milieu
5. de sociale en ruimtelijke situatie van de leerling.

Op grond van deze criteria worden de volgende toepassingsgebieden aangewezen:

1. Nederland
2. De Verenigde Staten van Amerika
3. De Unie van Socialistische Sovjet Republieken
4. Een, nader aan te wijzen, stedelijk-industriële regio
5. Een, nader aan te wijzen, ontwikkelingsregio.

1.6. *Toelichting op de thema's*

1.6.1. *Inleiding*

De in het programma genoemde thema's zijn zowel uitgewerkt in de vorm van doelstellingen in termen van leerlingengedrag als door middel van een minimum opgave van kernbegrippen. Naar de mening van de commissie verdient het uitwerken van thema's in de vorm van doelstellingen de voorkeur boven het opsommen van kernbegrippen. Op het eindexamen immers dienen de kandidaten door middel van gedrag te demonstreren dat ze de doelstellingen bereikt hebben. Tevens wordt de mogelijkheid tot verbetering van het CSE-A vergroot daar een dergelijke wijze van omschrijven het stellen van reproductievragen tegen gaat en men wel gedwongen is de nadruk te leggen op de achter de feiten opererende processen.

Tenslotte dient gezegd dat aan het opsommen van begrippen duidelijke nadelen kleven. Dergelijke opsommingen zijn namelijk nooit volledig en kunnen snel achterhaald worden. Bovendien dragen deze opsommingen een sterk element van schijn-zekerheid in zich. In de geografie ontbreekt het namelijk nog vaak aan eenstemmigheid over de precieze inhoud of betekenis van begrippen. Dat toch is besloten om bij de binnen de geformuleerde thema's onderscheiden onderwerpen een opgave te doen van de belangrijkste daarbij behorende kernbegrippen, is te beschouwen als een poging enigermate tegemoet te komen aan de meermalen door aardrijkskunde-docenten en CSE-A commissie geuite wens om grotere zekerheid te krijgen over de precieze inhoud van het examen.

Bedacht dient echter te worden, dat de geformuleerde doelstellingen maatgevend horen te zijn voor de bepaling van deze inhoud, dat de onderscheiden onderwerpen hieraan nader vorm beogen te geven en dat de niet-limitatieve opsomming van kernbegrippen slechts als een vingerwijzing zijn te beschouwen (zie verder par. 3.2.).

De hierna volgende toelichtingen op de thema's dienen om meer zicht te geven op de bedoelingen van de commissie. Deze is zich er overigens van bewust dat de gekozen thema's enerzijds niet elkaar uitsluitende categorieën vormen en dat daardoor regelmatig overlappingsen voorkomen. Dit heeft echter het voordeel dat hierdoor de eenheid van het totale pakket wordt bevorderd. Als gevolg hiervan kunnen ook dezelfde begrippen bij verschillende onderwerpen voorkomen.

Zij functioneren dan echter steeds in een ander kader. Anderzijds wordt met de gekozen thema's niet het totale veld van de wetenschappelijke geografie gedekt. Dit hangt samen met de eigen doelstellingen van het aardrijkskunde-onderwijs, en met de realiseringmogelijkheden daarvan in de schoolpraktijk.

2. Bevolking

De demografische eigenschappen van de diverse over de aardse ruimte verspreide bevolkingsgroepen staan centraal in dit thema. Die groepen verschillen vooral in grootte en samenstelling, beide het resultaat van de processen van natuurlijke groei of -afname en migratie. Deze processen staan in wederkerige relatie met de natuurlijke omgeving, de technologische ontwikkelingen, de sociaal-economische situatie en/of het waarden- en normenpatroon van de desbetreffende bevolkingsgroep. Veranderingen in bevolkingsgrootte of -samenstelling hebben op velerlei terrein repercussies. Er bestaan nauwe relaties tussen veranderingen in de demografische eigenschappen van bevolkingsgroepen en veranderingen in hun woonomgeving. De beschrijving en verklaring vereisen niet alleen kennis van een aantal demografische ken-

merken, zoals omvang, leeftijdsopbouw, geboorteen sterftcijfer, maar ook van de sociaal-economische samenstelling en van de culturele en ethnische herkomst van de bevolkingsgroepen. In de beschouwingen over het differentiatieproces dienen betrokken te worden veranderingen onder invloed van migratie, wijzigingen in geboorte en sterftcijfer en in de sociaal-economische en culturele opbouw van de bevolking.

Omdat demografische ontwikkelingen van groot belang zijn trachten overheden daar vaak invloed op uit te oefenen, bv. in de vorm van het stimuleren, of juist afremmen van de bevolkingsgroei. Ook het opwekken of bijsturen van migratiestromen is het onderwerp van overheidshandelen.

1.6.3. Stad en platteland

Stad en platteland staan niet los van elkaar. Agrarische producten worden naar de stad vervoerd en industriële producten gaan weer naar het platteland, er ontstaat woon-werk-verkeer en er is een trek van het platteland naar de stad en omgekeerd. De meeste samenlevingen, ook de niet-westerse, kennen deze situatie van ruimtelijke differentiatie en interactie. Tussen stad en platteland, maar ook in de stad en op het platteland ontstaat een aantal geografische systemen. Deze hebben over de hele wereld min of meer karakteristieke trekken en kunnen door middel van vastomlijnde begrippen (bv. agglomeratie) en generalisaties (bv. afstandsverval) omschreven worden.

Begrippen en generalisaties worden toegepast op eigenschappen die per type stad en platteland verschillen. Het is de bedoeling dat de kandidaten de begrippen, generalisaties en theorieën kennen welke dienen om het functioneren van de verschillende typen stad en platteland te verklaren. Dit thema omvat ook de ontwikkeling van de stad en het platteland.

Daarbij staan die ontwikkelingen waarvan de gevolgen in de hedendaagse stad en op het platteland nog aanwezig zijn en die de huidige organisatie, inrichting en functies mede bepalen, op de voorgrond.

1.6.4. Territorialiteit

Territorialiteit heeft betrekking op gedragingen verbonden aan en veroorzaakt door het organiseren van de ruimte in invloedssferen of begrensde gebieden, die geheel of gedeeltelijk worden opgeëist door de bewoners of door hen die aanspraak maken op het gebied.

Voor een goed inzicht in dit verschil is kennis nodig van de verschillende ruimtelijk geörienteerde politieke systemen, variërend van stam tot en met staat. Deze samenlevingsverbanden worden gekenmerkt door uiteenlopende maatschappijvisies, die hun weerslag vinden in het gebruik en in de indeling van de ruimte. Voornaamste uitingen hiervan zijn: ruimtelijke ordening, economisch beleid

en bevolkingsbeleid. Naast een streven naar economische, sociale en politieke integratie o.i.v. schaalvergrotingsprocessen en de vorming van internationale organisaties zien we ook separatisme, conflict en agressie. Deze verschijnselen kunnen zich op verschillende niveaus voordoen. Bij politieke processen blijken factoren van ideologische aard, manipulatie en perceptie een grote rol te spelen.

1.6.5. *Ruimtelijk beleid*

Onder ruimtelijk beleid wordt hier verstaan de bestemming en inrichting in ruime zin van een bepaald territoir, zoals deze tot stand komen onder invloed van gezagsrelaties, die het desbetreffende gebied heeft met een voor dit gebied formeel erkende overheid. Ruimtelijk beleid wordt gevoerd op een breed spectrum van ruimtelijke schalen, uiteenlopend van de gemeentelijke tot een boven-nationale (bv. Europese) schaal.

Vereiste is echter dat een bepaalde vorm van gezagsrelatie bestaat, waardoor dit beleid geëffectueerd kan worden. Daarbij wordt het ruimtelijk beleid naar inhoud, omvang en realiseringmogelijkheden bepaald door enerzijds de hoedanigheden van de door de mens ingerichte ruimte, en anderzijds het niveau van technische, economische en organisatorische ontwikkeling, alsmede het geldende sociale, politieke en economische stelsel en de onder de betrokken groepen mensen vigerende waarden en normen, onder meer ten aanzien van het milieu en de rol van de staat. In verschillende landen hebben zich in de loop van de tijd zeer uiteenlopende vormen van ruimtelijk beleid ontwikkeld. Inzicht in deze verscheidenheid van vormen en de daarmee verbonden problemen en resultaten kan van groot belang worden geacht voor de zelfstandige meningsvorming van de kandidaten ten aanzien van het in ons land gevoerde ruimtelijk beleid, zowel op het vlak van de ruimtelijke ordening als op dat in de regionaal-economische ontwikkeling.

1.6.6. *Ontwikkelingsproblematiek*

Gebieden met ontwikkelingsproblemen worden gekenmerkt door processen van fragmentarische modernisering waardoor er sprake is van sociale, politieke, economische en culturele ongelijkheid bij de bevolking.

Ruimtelijke ongelijkheid is hiervan de resultante. Vooral in delen van de Derde Wereld houden armoede, honger, slechte gezondheid, bodemuitputting en beperkte scholing grote aantallen mensen gevangen in vicieuze cirkels. De oorzaken liggen (gewoonlijk) in het verleden, waar, met name voor de Derde Wereld, de invloed van het westen (kolonialisme, neo-kolonialisme), de interne maatschappelijke structuur en de verstoring van het evenwicht tussen bevolkingsaantal en bestaansbronnen een cruciale rol speelden. De voortduren-

de afhankelijkheidsrelaties, van interne en externe aard, bevestigen en versterken de bestaande verschillen tussen ontwikkelde en ontwikkelingslanden, en eveneens de ongelijkheid in de ontwikkelingslanden tussen de grote massa van de bevolking en de kleine bovenlaag. Daarmee wordt de ontwikkelingsproblematiek bestendigd. Maar ook buiten de Derde Wereld komt ruimtelijke ongelijkheid voor.

Met name daar waar regionaal grote verschillen zijn te constateren in economische ontwikkeling. Deze situaties leiden dikwijls tot interne ontwrichtingen, identiteitscrises en interne en externe migraties. Genoemde problemen liggen zowel op intra- als internationaal niveau.

1.6.7. *Klimaat*

Zonstraling is de voornaamste energiebron voor het aardse ecosysteem. De hoeveelheid ontvangen straling is niet overal op aarde gelijk. De equatoriale zone ontvangt het meest, de arctische zone het minst. Deze zonale ongelijkheid leidt tot energietransporten. Zij komen tot stand via de lucht circulatie en de door de oppervlaktewind geïnduceerde zeestromingen. De luchtcirculatie bewerkstelligt geen directe energietransporten tussen evenaar en pool; het systeem wordt gecompliceerd door de aardrotatie, de land/zee verdeling en het reliëf.

Nauw gerelateerd aan de luchtcirculatie is de waterkringloop met de voor het ecosysteem vitale neerslagverschijnselen.

Tijdelijke veranderingen in de luchtcirculatie veroorzaken veranderingen in het weer, op regionale verschillen in gemiddelde temperatuur en neerslag zijn klimaattypen gebaseerd. Kennis van weer en klimaat is van belang voor het inzicht in het functioneren van ecosystemen.

1.6.8. *Landschapsfeer*

Onder landschapsfeer wordt verstaan de natuurlijke gesteldheid van het aardoppervlak en de ruimte in de nabijheid daarvan. Zij is ontstaan waar een aantal sferen elkaar ontmoeten en wederzijds beïnvloeden (litho-hydro-, atmo- en biosfeer).

De landschapsfeer wordt beïnvloed door ruwweg drie systemen met kenmerkende structuren en processen en met kenmerkende tijdschalen. In de eerste plaats het geotektonische systeem waarmee de macrotopografische verschijnselen kunnen worden verklaard. Endogene energie speelt de hoofdrol in het geotektonisch systeem.

In de tweede plaats het pedo-geomorfisch systeem waarin de exogene processen (verwerking, denudatie, erosie, sedimentatie, bodemvorming) een belangrijke rol spelen.

In de derde plaats het ecosysteem waarin de relaties tussen organismen en het fysisch milieu centraal staan.

De belangrijkste eigenschappen van deze systemen en hun betekenis voor de landschapsfeer zijn van groot belang voor het inzicht in de structuur van

de landschapsfeer en derhalve voor het inzicht in de draagvlak-functie die het natuurlandschap voor de samenleving heeft.

Inzicht in de structuur van de landschapsfeer is van groot belang voor de evaluatie van het leefmilieu van de mens. Dit inzicht dient mee te wegen bij ruimtelijke beheer- en inrichtingsmodellen.

Mens en milieu

Het thema "Mens en milieu", één van de oudste van de geografie, omvat de relaties tussen menselijke groepen en het hen omringende milieu (fysisch en artefactueel), in het bijzonder voorzover die relaties beïnvloed worden door resp. van invloed zijn op ruimtelijke kenmerken. Menselijke groepen zijn voor hun levensonderhoud, welvaart en welzijn onder meer aangewezen op de mogelijkheden die het natuurlijke milieu biedt. Door de functies van het natuurlijke milieu in toenemende mate te belasten ontstaan verschuivingen in het natuurlijk evenwicht die wij in een aantal gevallen ervaren als milieuverstoringen. Deze verstoring kan verschillende oorzaken hebben, zoals bevolkings- en welvaartsgroei, technologische en politiek-maatschappelijke ontwikkelingen.

Doordat de bevolking en haar activiteiten ongelijkmatig over de aarde zijn verspreid is de verstoring regionaal verschillend, maar gevaar van aantasting van het natuurlijk evenwicht bestaat overal. Kennis van en inzicht in de interactie van biotische en abiotische elementen in het milieu, alsmede in het natuurlijk evenwicht verstorende processen en de daarachter liggende factoren is van belang voor een verantwoorde meningsvorming over milieuvraagstukken.

DSTUK 2. HET PROGRAMMA AARDRIJKSE EINDEXAMEN V.W.O.

Het eindexamen aardrijkskunde V.W.O.

Bij het eindexamen wordt een onderzoek ingesteld naar:

1. de kennis van en het inzicht in de algemene begrippen, generalisaties en theorieën van de sociale en fysische geografie;
2. de kennis van en inzicht in de geografische thema's: Bevolking, Stad en platteland, Territorialiteit, Ruimtelijk beleid, Ontwikkelingsproblematiek, Klimaat, Landschapsfeer, Mens en milieu;
3. het vermogen van de kandidaten deze, waar mogelijk, toe te passen en vergelijkenderwijze te behandelen aan de hand van de regio's: Nederland, de Verenigde Staten van Amerika, de Unie van Socialistische Sovjet Republieken, een stedelijk-industriële regio, een ontwikkelingsregio;
4. het vermogen van kandidaten om vanuit een geografische probleemstelling zelfstandig ge-

gevens te verzamelen, deze te bewerken en daaruit conclusies te trekken.

2.1.2. *Het schriftelijk eindexamen*

Het schriftelijk eindexamen strekt zich uit over de onder 2.1.1.a., 2.1.1.b. en 2.1.1.c. vermelde stof;

2.1.3. *Het schoolonderzoek*

- a. het schoolonderzoek strekt zich uit over de gehele onder 2.1.1. vermelde stof;
- b. een veldpracticum en een daarop gebaseerd verslag vormen een onderdeel van het schoolonderzoek.

Toelichting

- a. Telkens wordt voor een meer-jaarlijkse periode bekend gemaakt op welke stedelijk-industriële- en welke ontwikkelingsregio de algemene begrippen, generalisaties en theorieën van de sociale en fysische geografie alsmede de geografische thema's zullen worden toegepast.
- b. Bij de regionale toepassing dient dat eigene naar voren te komen dat het algemene uit de thema's individualiseert.
- c. Bij het oplossen van vraagstukken en het beantwoorden van vragen zullen de kandidaten gebruik kunnen maken van atlanten, overig kaartmateriaal en tabellen.
- d. Het onder 2.1.3.b bedoelde verslag van het veldpracticum telt mee voor het eindcijfer van het schoolonderzoek.

HOOFDSTUK 3. UITWERKING VAN HET PROGRAMMA

3.1. Inleiding

De aan dit programma ten grondslag liggende visie is gebaseerd op een ruimtelijk-ecologische benadering van de werkelijkheid in het aardrijkskunde-onderwijs. Hierin komen begrippen, principes, generalisaties en theorieën uit de sociale geografie en de fysische geografie, alsmede hun hulp- en zusterwetenschappen, waaronder de culturele antropologie, bij elkaar.

De kernbegrippen, die aan dit programma ten grondslag liggen, zijn:

- a. Ruimte, als mogelijkheden biedend en grenzen stellend integreringskader, met speciale aandacht voor:
 - absolute en relatieve ligging, afstand, ruimte, regio en schaal;
 - ruimtelijke verdeling (spreidingspatroon en dichtheid), associatie en interactie;
 - nabijheidsbetekenis en afstandsverval;
 - bereikbaarheid en toegankelijkheid;
 - ruimtelijke organisatie en inrichting;
 - ruimtelijke differentiatie en integratie;
 - ruimtelijk gedrag, perceptie en diffusie.
- b. Cultuur, voor zover van belang voor de beschrij-

ving en verklaring van ruimtelijke verschijnselen, met speciale aandacht voor:

- structuur - economisch stelsel (eigendomsverhoudingen, productie, consumptie, distributie);
- sociaal stelsel (groeperingen en relaties tussen groeperingen);
- politiek stelsel (gezags- en machrelaties in zaken van openbaar belang);
- stelsel van centrale waarden (religie, ideologie);
- proces - cultuurverandering (innovatie, diffusie, acculturatie);
- perceptie - beeldvorming (ethocentrisme, visies op de cultuur als bv. cultureel materialisme, functionalisme en evolutionisme).

c. Natuur, in zoverre van belang bij de bestemming en inrichting van de ruimte met speciale aandacht voor:

- structuur - geotektonisch stelsel (verklarend voor endogene reliëfvorming);
- pedo-geomorfisch stelsel (verklarend voor exogene reliëfvorming);
- atmosferisch stelsel (verklarend voor de luchtcirculatie);
- ecologisch stelsel (verklarend voor de biochemische kringlopen);
- proces - endogene processen (continentvorming, gebergtevorming, aardbevingen, vulkanisme);
- exogene processen (verwering, massabeweging, erosie, massa-transport, sedimentatie, bodemvorming);
- atmosferische processen (straling, absorptie, wind, neerslag);
- ecologische processen (fotosynthese, respiratie, mineralisatie);
- perceptie - beeldvorming (natuurbeleving, natuurbehoud, milieu-evaluatie, milieu-inrichting).
- bodem - bodemvormende processen
- bodemvormende factoren
- landschap - ecotoop
- dynamisch evenwicht.

3.2. Doelstellingen van de thema's

De navolgende doelstellingen zijn geformuleerd in termen van leerlingengedrag, zij staan gegroepeerd naar thema.

3.2.1 Bevolking

Van de kandidaten wordt verwacht dat zij:

1. — de demografische processen die leiden tot

regionaal gedifferentieerde veranderingen in bevolkingsgrootte en —samenstelling kunnen omschrijven en in hun werking verklaren;

- de factoren die bovengenoemde processen beïnvloeden kunnen onderkennen en omschrijven en dat zij de invloed van deze factoren op die processen kunnen aangeven;
 - de samenhangen kunnen omschrijven tussen demografische verschijnselen enerzijds en politieke, economische, sociale en technologische verschijnselen anderzijds;
 - de ruimtelijke gevolgen van bovengenoemde demografische processen en verschijnselen kunnen aangeven;
 - de processen van geografische mobiliteit, inzonderheid de migratie op de geëigende schaal-niveaus kunnen omschrijven en zowel hun oorzaken als, met name, ruimtelijke gevolgen, waaronder segregatie, kunnen verklaren;
 - inzien hoe door middel van overheidspolitiek demografische ontwikkelingen kunnen worden beïnvloed;
 - de voor een goed begrip van bovenstaande doelstellingen noodzakelijke demografische begrippen en verschijnselen kunnen omschrijven, berekenen en grafisch weergeven.
2. Deze theoretische verworvenheden kunnen toepassen op concrete voorbeelden en, waar mogelijk, kunnen komen tot een gefundeerde stellingname inzake demografische vraagstukken, in het bijzonder waar deze ruimtelijke oorzaken en/of gevolgen hebben.

Kernbegrippen

Samenlevingsvormen: huishoudens, gezin, grootfamilie, verwantschap, huwelijk, endo-/exogamie, polygynie/andrie.

Indicatoren van bevolkingsgroei: geboortecijfer (bruto)*, huwelijksvruchtbaarheidscijfer, huwelijksfrequentie, huwelijksleeftijd, huwelijkspatroon, sexratio*, geboortenoverschot*, sterftecijfer (bruto)*, gestandaardiseerd sterftecijfer, leeftijdsspecifiek sterftecijfer, sterftekans, gemiddelde leeftijd*, gemiddelde levensduur, gemiddelde levensverwachting, leeftijdsopbouw, vergrijzing, kindersterfte, zuigelingen sterfte, cohorte, generatie, bevolkingsgroei/aanwas*, toenemende/ stationaire/afnemende bevolking, bevolkingsdichtheid*.

Gegevens en kaarten: bevolkingspyramide, bevolkingsdiagrammen, bevolkingsdichtheidskaarten, bevolkings spreidingskaarten, sterftetafels.

Gevolgen van bevolkingsgroei: demografische druk, overbevolking (sociaal, economisch, ruimtelijk), bevolkings spreiding/ concentratie, demografische investeringen, afhankelijkheidsratio*, activiteitsgraad*, bevolkingsprognose.

Sociaal-economische, culturele en politieke aspecten: allochtoon/autochtoon, soc.ec. welstands-

klasse of status, leefmilieu, woonmilieu, geboortenregeling, familyplanning, bevolkingspolitiek ghetto, segregatie, segregatie-index.

Bevolking en beweging: migratie, im/emigratie, arbeidsmigratie, seizoenmigratie, forensisme, toerisme, migratie-saldo*, selectieve migratie, inter/intraregionale migratie, vestigings/vertrekcijfer, push/pull factoren, kolonisatie.

Demografische theorieën: van Marx/Malthus, demografisch transitie-model.

* Deze begrippen moeten berekend kunnen worden.

2.2. Stad en platteland

Van de kandidaten wordt verwacht dat zij:

1. — de geografische ruimte in stedelijke en landelijke gebieden kunnen geleiden, hun onderlinge complementariteit kunnen omschrijven, met name in het licht van de invloed hierop van onderscheiden politieke, economische en sociale stelsels en daarbij:
2. — blijk geven van kennis van en inzicht in de ontwikkeling, geleiding en functies van steden;
 - urbanisatie (verstedelijking) kunnen omschrijven, toepassen op verschillende ruimtelijke schaal en kunnen onderscheiden in fysiek, sociaal-economische, functionele en sociaal-psychologische verstedelijking (svormen);
 - urbanisatie en haar vormen in verband kunnen brengen met technologische-economische, politiek-ruimtelijke- en bevolkingsontwikkelingen, zoals die zich in onderscheiden maatschappelijke stelsels voordoen en voor de westerse landen sinds de industriële revolutie hebben voorgedaan;
 - de interne structuur van steden m.b.v. gangbare modellen kunnen omschrijven en deze kunnen toepassen op steden van diverse grootte, de ontwikkelingen van deze structuur in verband kunnen brengen met politieke, sociale en economische factoren en processen en met veranderde waardepatronen van mensen;
 - blijk geven van kennis van en inzicht in functionele typologieën en hiërarchieën van steden.
3. — blijk geven van kennis van en inzicht in de ontwikkeling, geleiding en functies van landelijke gebieden;
 - de ontwikkeling kunnen beschrijven m.b.v. het peasant- en specialisatiemodel en beide in verband kunnen brengen met specifieke nederzettingvormen, sociale structuren, politieke organisatie en waardepatronen van mensen;
 - de ontwikkeling van peasant- tot specialisatielandbouw kunnen omschrijven en in verband brengen met economische, techno-

logische en politieke ontwikkelingen op nationale en internationale schaal en met veranderingen in de organisatie en inrichting van het platteland;

- de interne structuur en de ontwikkelingen daarvan kunnen omschrijven en in verband brengen met politieke, economische en natuur-ruimtelijke factoren en processen en met waardepatronen van mensen;
 - blijk geven van kennis van en inzicht in de typologie van agrarische gebieden naar bedrijfsvoering en functioneel aspect op verschillende ruimtelijke schaal.
4. — de theoretische verworvenheden toe kunnen passen in verschillende regionale situaties van onderscheiden schaal en kunnen komen tot een gefundeerde stellingname inzake problemen tussen en binnen stedelijke en landelijke gebieden, in het bijzonder waar deze problemen ruimtelijke conflicten oproepen.

Kernbegrippen

Stedelijke en landelijke gebieden: stedelijk gebied, landelijk gebied; agglomeratie, stadsgewest, conurbatie, stedelijke zone, ruimtelijk beleid, grondgebruik, ruimtelijk conflict, conflicterend ruimtegebruik, rural urban fringe, grondprijsmechanisme, complementariteit, ruimtelijke interactie, politiek-, economisch- en sociaal stelsel.

Stad: geleiding (scriteria), binnenstad, stadscentrum, C.B.D.; stedelijke functie; verstedelijking, verstedelijkingsproces, -graad, -tempo; ruimtelijke schaal, fysieke-, sociaal-economische, functionele en sociaal-psychologische verstedelijking; maatschappelijk stelsel, industriële revolutie; structuur, vestigingsplaatstheorie (v. Weber), groeipooltheorie, schaalvoordelen, agglomeratiefactoren, cumulatieve groei; model, geleidingsmodellen, factoren, processen, waardepatroon; typologie (van steden), hiërarchie (van steden), theorie van Christaller.

Platteland: peasant-economie, farmer; nederzettingvorm(en), sociale structuur, politieke organisatie; marktgerichtheid, commerciële landbouw, zelfvoorzienende landbouw, ruilverkaveling, Europese landbouwpolitiek, subsidies, heffingen; intensivering, extensivering, schaalvergroting.

3.2.3. Territorialiteit

Van de kandidaten wordt verwacht dat zij:

1. kennis van en inzicht in hebben van:
 - de algemene problematiek van de territorialiteit, vormen van politieke organisatie en functies van bestuurlijke eenheden;
 - de ontwikkeling van de politieke organisatie van minder complexe vormen tot en met de staat;
 - de voornaamste sociaal-politieke maatschappij visies en hun sociaal-ruimtelijke gevolgen;
 - de verschillende manieren waarop sociale,

economische en demografische problemen worden benaderd onder de verschillende typen bestuur;

- de betekenis van schaalvergroting, politieke integratie en internationale organisaties;
 - ontstaan, verloop en gevolgen van conflicten tussen territoriale eenheden op verschillende niveaus.
2. Deze theoretische verworvenheden kunnen toe- passen op concrete voorbeelden en kunnen kom- men tot een gefundeerde stellingname inzake territoriale problemen.

Kernbegrippen

Territorium: territorialiteit, territoriumgedrag, soevereiniteit, grondgebied, invloedssfeer, politiek areaal, staatsidee, iconografie, circulatie, natievorming, staat, eenheidsstaat, federale staat (bonds- staat), confederatie, centralisatie/decentralisatie van het bestuur, bestuurslagen, bureaucratie, kolonie, protectoraat, trustgebied, overzees gebied, dominion, satelietland, enclave, bestuurlijke eenheden met een bijzondere functie, wetgevende, uitvoerende en rechtsprekende macht, verzorgings- staat.

Structuur: egalitair, gerangordend, gestratificeerd, pre-industriële staat, nationale staat, horde, clan, stam, tribale gemeenschap, sedentarische, samenleving, open/gesloten maatschappij, vrije markt- economie, planeconomie, bevolkingsbeleid.

Ideologie: nationalisme, natie, volk, patriotisme, internationalisme, federalisme, regionalisme, irredentisme, feodalisme, kapitalisme, socialisme, maoïsme, marxisme, democratie, totalitarisme, imperialisme, kolonialisme, tribalisme, religie, racisme.

Integratie: schaalvergroting, functionele (nodale) regio, bestuurlijke herindeling, gewestvorming, supranationaal, statenbond, vrijhandelzone, tol- unie, douane-unie, marktgebied, kapitaalvervlech- ting, multinationale onderneming, invoerrechten, exportheffing, verbod op concurrentievervalsing, regionale specialisatie, harmonisatie van wetge- ving, internationale samenwerking.

Begrenzing: grens, frontier, territoriale wateren, visserijgrens, continentaal plat, separatisme, ste- reotype, ethnocentrisme, conflict, koude oorlog, agressie, escalatie.

3.2.4. Ruimtelijk beleid

Van de kandidaten wordt verwacht dat zij:

1. kennis van en inzicht in hebben van:
 - betekenis en achtergronden van ruimtelijk gedifferentieerde ontwikkeling;
 - structuren en vormen van ruimtelijk beleid en de werking hiervan, in het bijzonder waar het Nederland betreft;
 - de regionale processen en samenhangen in het bijzonder van sociale, economische en

fysische aard die in relatie staan met het ruimtelijk beleid en waarbij verschillen in maatschappelijk stelsel van grote betekenis zijn;

- de voornaamste in ruimtelijk beleid gekozen strategieën.
2. deze theoretische verworvenheden kunnen toe- passen op concrete voorbeelden, welke zowel op gemeentelijk, regionaal als boven-nationaal niveau kunnen liggen en kunnen komen tot een gefundeerde stellingname inzake problemen van ruimtelijk beleid.

Kernbegrippen

Welvaart en welzijn: begrippen, indicatoren en maatstaven en hun problemen, regionale verschij- ningsvormen, regionale verschillen.

Regionalisatie: vormen van regio's, problemen van aanwijzing en afbakening.

Regionale problemen: typen van regionale pro- blematiek, vormen van intra- en inter- regionale ongelijkheid, oorzaken en ontwikkelingen hierin, intra- en inter-regionale samenhangen, herstructu- rerings- en stimuleringsgebieden.

Regionaal beleid: instrumenten en organen van ruimtelijk beleid, horizontale en verticale coör- dinatie in het ruimtelijk beleid, centralisatie resp. decentralisatie in het ruimtelijk beleid, samen- hangen tussen staatkundige organisatie en het ruimtelijk beleid, samenhangen tussen politieke stelsels in het algemeen en het ruimtelijk beleid, samenhangen tussen ruimtelijk beleid en econo- mische politiek, sectorale aspecten van het ruimte- lijk beleid, groeigebieden en groeipuntenbeleid, landhervormingspolitiek en ruimtelijk beleid, bevolkingspolitiek en ruimtelijk beleid, landinrich- tingsbeleid.

Theorieën en modellen: negatieve en positieve cu- mulatieve causatie (Myrdal), spreidingseffecten, backwasheffecten, centrum-periferie theorie van Friedman, groeipooltheorie van Perroux.

3.2.5. Ontwikkelingsproblematiek

Van de kandidaten wordt verwacht dat zij:

1. kennis van en inzicht in hebben van:
 - de algemene aspecten van de ontwikkelings- problematiek;
 - de aard en de oorzaken — met name de historische bepaaldheid — van de ontwikke- lingsproblematiek;
 - de krachten en factoren die deze problema- tiek bestendigen;
 - de voornaamste ontwikkelingsstrategieën,
2. deze theoretische verworvenheden kunnen toe- passen op concrete voorbeelden welke op natio- naal, regionaal of lokaal niveau kunnen liggen, en dat zij kunnen komen tot een gefundeerde stellingname inzake de ontwikkelingsproblema- tiek.

Kernbegrippen:

Fragmentarische modernisering, ruimtelijke ongelijkheid, niveaus van ongelijkheid, dualisme, centrum-periferiemodellen, dependencia, vicieuze cirkels, ruimtelijke innovatiediffusie, europeanisering, handelskapitalisme, industrieel kapitalisme, industrieel-financieel kapitalisme, kolonialisme, dekolonialisatie, identiteitscrises, absolute en relatieve armoede, acculturatie.

Bevolkingsontwikkeling: exponentiële bevolkingsgroei, demografische transitie, nataliteit, mortaliteit, geografische mobiliteit, push-pull, sociale mobiliteit, elite-massa, analfabetisme, family planning.

Bedrijven en bedrijvigheid: peasant versus farmerlandbouw, eigendoms- en pachtverhoudingen, agrarische hervormingen, kolonisatie, agrarische techniek (irrigatie, bemesting, arbeids-, kapitaalsintensief), productieplan (monocultuur, polycultuur), community development, groene revolutie, verwoestijning, brandhoudcrisis, bodemverzilting, ontbossing, bodemerosie, agrarische involutie, industrie versus ambacht, formele versus informele sector, importvervangende industrialisatie, multinationals, joint venture, (verborgen) werkloosheid, shared poverty, handel- en dienstverlening in formele en informele sector, urbane involutie, bedienen maatschappij.

Sociaal-politieke aspecten: politieke organisatie, dictatuur, democratie, sociale desintegratie, patron-client relaties, bewustwordingsprocessen.

De stad: inter-urbane ongelijkheid, intra-urbane ongelijkheid, primate city, slums (bidonvilles etc.), successie en invasie, groei-pool, overurbanisatie, subsistence urbanisation, sociale woningbouw, intra-urbane mobiliteit.

Relaties tussen ontwikkelde en ontwikkelingslanden: handelsstromen, ruilvoetontwikkelingen, ontwikkelingshulp, investeringen, gastarbeid, humanitaire hulp, cultureel imperialisme, acculturatie, verwestering, modernisering, ethnocentrisme, ontwikkelingssamenwerking, bilateraal, multilateraal, gebonden hulp, ongebonden hulp, aangepaste technologie, internationale organisaties.

3. Klimaat

Van de kandidaten wordt verwacht dat zij:

1. kennis van en inzicht in hebben van:
 - de stralingsbalans van de aarde;
 - de gemiddelde luchtcirculatie in de troposfeer;
 - de invloed van de aardrotatie op de luchtcirculatie;
 - de invloed van de land/zee verdeling op de luchtcirculatie;
 - de verschijnselen die samenhangen met het polair front;
 - de samenhang tussen luchtcirculatie en temperatuurverdeling;
 - de samenhang tussen luchtcirculatie en neer-

slagverdeling;

- de grondbeginselen van de klimaatclassificatie;
 - de invloed die de mens kan uitoefenen op de eigenschappen van het klimaat.
2. deze theoretische verworvenheden kunnen toepassen op concrete voorbeelden op verschillende ruimtelijke schaalniveaus.

Kernbegrippen

Stralingsbalans: zonstraling, aardstraling, temperatuur, warme, gematigde en koude luchtstreek, reflectie, verstrooiing, absorptie, broeikas-effect.

Luchtcirculatie: luchtdruk, verticale luchtdrukgradiënt, horizontale luchtdrukgradiënt, wind, divergentie, convergentie, verticale temperatuurgradiënt, adiabatische temperatuurgradiënt, passaten, westelijke winden, polair front.

Invloed aardrotatie: corioliskracht, wet van Buys Ballot.

Invloed land/zee verdeling: maritimiteit, continentaliteit, zeewind, moesson, zeestroom.

Polair front: luchtsoort, depressie, frontale activiteit.

Temperatuurverdeling: isotherm, maximum en minimum temperatuur, temperatuur-amplitudo, gemiddelde temperatuur.

Neerslagverdeling: verdamping, condensatie, latent warmtetransport, convectieve, advectione, orografische en frontale neerslag.

Klimaatclassificatie: klimaat, klimaatdiagram, klimaatkaart.

Menselijke beïnvloeding van het klimaat: invloed van de toename van de CO² gehalte van de troposfeer, invloed van de afname van het Ozongehalte, invloed van de toename van het stofgehalte, stads-klimaat.

3.2.7. Landschapsfeer

Van de kandidaten wordt verwacht dat zij:

1. kennis van en inzicht in hebben van:
 - het geotektonisch model en de daarmee samenhangende verdeling van geotektonische verschijnselen op aarde;
 - de belangrijkste exogene processen die de eigenschappen en het aanzien van de aardoppervlakte beïnvloeden;
 - de grondbeginselen van de fluviatiele, glaciële en eolische reliëfontwikkeling en de daarmee samenhangende reliëfvormen;
 - de grondbeginselen van de zonale en genetische bodemclassificatie;
 - de grondbeginselen van de ecologische kringlopen die zich in de landschapsfeer voltrekken;
 - de tijdschalen waarmee de gebeurtenissen uit het geotektonisch, pedogeomorfisch en ecologisch stelsel kunnen worden gemeten.
2. deze theoretische verworvenheden kunnen toepassen op concrete voorbeelden op verschillen-

de ruimtelijke schaalniveaus.

Kernbegrippen

geotektonisch model: hooggebergte, continent, continentale helling, oceaan, oceanische rug, diepzeetrog, verdeling van seismologische en vulkanische verschijnselen.

Exogene processen: mechanische, chemische en biologische verwerking, massabeweging, erosie, bodemerrosie, massatransport, sedimentatie, bodemvorming.

Reliëfontwikkeling en reliëfvormen: jong, rijp, oud reliëf, schiervlakte, fluviatiel transport, rivier, insnijding, dal, dalbodem, dalhelling, terras, meander, stroomgebied, waterscheiding, debiet, estuarium, delta, meer, glaciaal transport, landijs, gletsjer, glaciaal dal, morene, smeltwater, smeltwaterafzetting, ijstijd, interglaciaal, stuwwal, eolisch transport, deflatie, duinvorming, dekzand, löss, keienvloer.

Bodemklassificatie: bodemvorming, bodemhorizont, bodemvormend proces (accumulatie, verplaatsing, afvoer), Bodemvormende factor (klimaat, flora en fauna, topografie, moedermateriaal, grondwater, tijd, mens), bodemsoort, klimaxbodem, bodemwater, grondwater, gley, pseudogley, drainage, irrigatie, bodemkaart.

Ecologische kringlopen: energiestroom, materiekringloop, waterkringloop, koolstofkringloop, bruto-fotosynthese, respiratie, netto-fotosynthese, biomassa, voedselketen, mineralisatie, producenten, consumenten, reductanten, zonne-energie, chemische energie, entropie, abiotische en biotische processen, abiotische en biotische milieu-factoren, ecologische tolerantie, ecologische diversiteit, milieubelasting, milieuverontreiniging.

Tijdschalen: landschapsfeer, dynamisch en statisch onderzoek, cyclisch karakter van het geotisch, pedo-geomorfisch en ecologisch stelsel, tijdschaal waarbij het geotisch systeem is op te vatten als dynamisch, tijdschaal waarbij het pedogeomorfisch systeem is op te vatten als dynamisch, tijdschaal waarbij het ecologisch systeem is op te vatten als dynamisch, plaatsing van elementen uit de verschillende stelsels in de landschapsfeer.

3.2.8. Mens en milieu

Van de kandidaten wordt verwacht dat zij:

1. kennis van en inzicht in hebben van:
 - de geografische ruimte als een ecologisch kader waarbinnen menselijke activiteiten natuurlijke procesgangen kunnen beïnvloeden;
 - de belangrijkste begrippen en theorieën uit de ecologie voorzover van belang voor het bestuderen van milieuvraagstukken;
 - methoden waarmee de kwaliteit van het milieu kunnen worden gemeten en gewaardeerd;
 - de aard en het ontstaan van milieuproblemen in het algemeen, alsmede van de oplossingsideologieën welke worden voorgestaan;
 - de kenmerken, oorzaken en mogelijke oplossingen van een aantal specifieke milieuproblemen.

2. deze theoretische verworvenheden kunnen toepassen in regionale situaties van verschillende schaal waarin milieuvraagstukken van invloed zijn op geografische kenmerken en dat zij kunnen komen tot een gefundeerde stellingname inzake milieuproblemen.

Kernbegrippen

De geografische ruimte als ecologisch kader:

milieu, milieukunde, milieuproblemen, milieubeheer, milieubeleid, landschapspark, natuurmonumenten, milieufactoren, milieufuncties,

Ecologie: ecologie, ecosysteem, ecotoop, biomassa, voedselketen, dynamisch evenwicht, diversiteitsnatuurkringloop, culturele ecologie.

Milieumeting, kartering en waardering: milieunormen, milieukartering, milieuwaardering, kwantificeringsproblemen.

Aard en ontstaan milieuproblemen, oplossingsideologieën: vormen van milieubeïnvloeding (aantasting, exploitatie, verontreiniging, vernietiging), oorzaken (demografie, technologische, maatschappelijk-politieke, gedrag), wereldmodellen, oplossingsideologieën.

Enkele specifieke milieuproblemen: waterverontreiniging (organisch, eutrofiëring), lucht- en bodemverontreiniging, milieu-effecten van energiewinning, landbouw en secundaire productie, afvalverwijdering, landschapsaantasting.

3.3. Methoden en technieken

Van de kandidaten wordt verwacht dat zij kennis en begrip hebben van:

- primaire bronnen van onderzoek;
- de bruikbaarheid van gegevens voor het oplossen van probleemstellingen;
- het beschrijven en presenteren van verzamelde waarnemingen in de vorm van tabellen, diagrammen en cartogrammen;
- eenvoudige methoden voor het toetsen van uitspraken over probleemstellingen.

Kernbegrippen

Enquête, steekproef, data matrix, frequentieverdelingen (absoluut, relatief, cumulatief), centrummaten (modus, mediaan, rekenkundig gemiddelde), spreidingsmaten (modaliteit, percentieldeviatie, standaarddeviatie) associatiematen (chi-kwadraat, rangcorrelatie, reëssielijn).

3.4. Het veldpracticum

Van de kandidaten wordt verwacht dat zij:

- in staat zijn een probleemstelling te formuleren;
- kennis hebben van primair en secundair bronmateriaal om daaruit die informatie te kunnen selecteren die bruikbaar is voor de oplossing van de geformuleerde probleemstelling;
- de verzamelde gegevens zo mogelijk kunnen verwerken tot gehelen dat de oplossing van de probleemstelling mogelijk wordt;
- uit de analyse conclusies kunnen trekken en deze kunnen verbinden aan bestaande theorieën;
- het eigen standpunt ten aanzien van de conclusies gefundeerd kunnen verwoorden.



Ministry
of
Education

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Minister of Education
Hon. Bette Stephenson, M.D.

CURRICULUM GUIDELINE FOR THE

Senior Division

GEOGRAPHY

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INTRODUCTION

This guideline supersedes the previous geography guidelines *Curriculum RP. 7, 1962*, and *Curriculum RP. 7, 1968*; it provides guidance for the organization of courses of study in geography in the Senior Division of schools in Ontario, including credit courses for the Secondary School Honour Graduation Diploma.

The guideline is a pattern for planning as opposed to a plan for teaching. The various sections are designed to give help and direction to teachers who will be planning detailed courses of study. "The Nature of Geographic Education" gives reasons for offering geography in the school curriculum. "Developing a Senior Geography Program" outlines the kinds of learning that should be taking place in Senior Division courses. Five outlines are given from which courses may be developed, and suggestions are made for the evaluation both of student achievement and the program.

Each course outline in this document contains a rationale, aims for the course, an outline of the basic course content, and suggestions for organizing a course of study. The outlines are intended to assist curriculum planners in achieving the appropriate breadth of study for Senior Division courses, to allow for a varied selection of topics, and to encourage a wide range of strategies and activities in order to challenge students.

Note: Schools may continue to develop Senior Division courses based on the Ministry guidelines entitled *Urban Studies, 1971*, *Environmental Science, 1973*, and *Geology, RP. 47, 1963*.

The development of detailed courses of study, at the appropriate level of difficulty, is a local responsibility.

The following outlines may be used to develop courses for credit towards the Secondary School Graduation Diploma:

- Studies in Physical Geography 561-071
- Studies in Human Geography 561-072
- Studies in Regional Geography 561-073

Note: A student may earn a maximum of one credit from each outline.

The following outlines may be used to develop courses for credit towards the Secondary School Honour Graduation Diploma:

- Canada: Geographical Realities H61-074
- World Issues: Geographical Interpretations H61-075

Note: A student may earn a maximum of one credit from each outline.

It is expected that this guideline will foster a complete review of existing geography courses and that this review will lead, where necessary, to appropriate changes in existing courses to bring them within the rationale of this guideline.



THE NATURE OF GEOGRAPHIC EDUCATION

In many ways virtually everyone is a practising geographer. In order to organize a shopping trip, to plan a vacation, to decide on which home to buy, or to perform a host of other tasks that involve movement, choice among alternatives, and decision-making, we must possess information about the world around us, arrange it in some logical order, and use the information to decide on a course of action. In following these basic steps, we will consider a number of the many variables involved in geographic studies, such as knowledge of places, location, distances, technology, and the use of resources. Often without consciously thinking about it, we use geographic skills, techniques, and concepts.

Similarly, when we act as part of a larger society, we make decisions that have geographic dimensions. The purchase of an automobile, for example, may be viewed as an economic decision, but its effects are manifest in the extraction of ore from the earth's crust and in the demand for parking space in a city. The political act of voting for a candidate who supports legislation to protect wilderness areas reflects a value placed on natural landscapes. These and countless other actions by individuals ultimately determine the ways in which the earth is used to support human life. It follows from this that the quality of the future depends upon our ability to make rational choices based on sound intellectual and moral reasoning.

STUDIES IN GEOGRAPHY

Studies in geography are rooted in the human need to know about the nature of the earth and its capacity to support human life, and to understand the ways in which skills and knowledge are applied to use the earth's potential.

This need to know and to explain is not only inherent in human nature but also necessary if we are to rely on the earth to sustain our existence into the future. Throughout recorded history there have been people who have gathered knowledge about the earth and its occupants for study. As centuries of migration, exploration, discovery, occupance, and modification of much of the earth's surface took place, this accumulated knowledge was organized and related to provide an ever clearer understanding of human/earth relationships. Thus, in many respects, there have always been geographers.

The emergence of geographic study as an academic discipline and school subject, however, is relatively recent. Furthermore, studies in geography are not easily described. In searching for explanations, geographic studies include both human and physical elements, employ a wide variety of investigative techniques and proce-

dures, study phenomena at a number of scales, borrow knowledge and principles from many sources, combine variables whose relative importance may be difficult to measure, and present information in patterns and combinations that may raise as many questions as they answer. The definitions, procedures, content, and boundaries that are characteristic of other disciplines or subjects are usually missing here. Often there is a difficulty in determining the content and focus that are most appropriate for the study of any given area or situation. As a consequence, even the most rigorous studies may lead to conclusions that can only be tentative in nature.

None of the difficulties inherent in comprehending the nature of human relationships with the earth, however, reduces the need to do so. In the past, seemingly unlimited space and resources allowed humans the luxury of such courses of action as the settlement of unoccupied lands; the harvest of virgin resources; the exploitation of abundant, cheap energy supplies; the use of substitutes; and the application of expanded scientific knowledge to the production of materials and commodities. Many of these traditional courses of action are no longer open. On a world scale,

rising population, rising economic expectations, and pressing environmental issues make many contemporary geographic questions universal in scope. On a local scale, the demands for adequate shelter, food, high-quality water and air, material goods, mobility, and artistic and recreational opportunities within a limited space make it necessary to cope with the present and to plan for the future using creative yet responsible strategies. This requires a solid base of knowledge derived from both the physical and social sciences and from practical experience in appraising the consequences of alternative courses of action. Studies in geography should assist students to search for principles that have universal scope and application. To balance this, however, topics must be investigated in sufficient depth to recognize the limitations of generalizations in their application to specific areas and issues.



Despite its short history as a school subject and its lack of a clearly defined body of content, geographic education has evolved a number of traditions which provide direction and focus for studies. These traditions and the techniques they employ have been refined over time and serve as useful guides in the organization of both units and courses. The four prominent traditions comprise:*

- studies of the physical environment, including the natural forces that act to shape the landscape and support life of all kinds;
- studies of areas or regions and the human and physical factors that give character to places;
- studies of locations and distributions, that is, patterns of human and natural phenomena and where and why they are so located; and
- studies of how people interact with their environment, including the influence of an environment on human activities and, conversely, the effects of human activities on environments.

Each tradition in geographical study is reflected in this guideline, and studies related to these are fundamental to all geographic education.

*William D. Pattison, "The Four Traditions of Geography", *The Journal of Geography* 63 (May 1964): 211-16.

GEOGRAPHY IN THE SCHOOL CURRICULUM

Geography deals with area, pattern, and interrelationship. The study of geography in school contributes to the young person's understanding of the physical character of the earth's surface, the human occupancy and use of the earth, the spatial organization of societies, and maps and their uses. The student of geography should have an opportunity to gain experience with the various modes of inquiry that are used in the areas of both natural and social sciences, and to become aware of the social, political and ethical questions associated with human use of the land and variations in the land's wealth.

Concepts. Geographical studies should aim to help students acquire a familiarity with and a degree of mastery of the ideas that characterize the distinctive conceptual framework of the subject. This framework consists of a few major concepts which are, in turn, supported by a large number of ancillary concepts. The ideas that develop during the study of geography will relate to one or more of the following major concepts, which have already been outlined in the geography guideline for the Intermediate Division: the support of life, people as choosers, constant change, spatial interaction, areal differentiation, resources, regionalism, and a global viewpoint.

This general framework, combined with a selection of concepts that are specific to a particular course, should be the basis for planning school geography courses. Facts can be organized around the selected concepts, and generalizations about them will emerge. The important concepts are introduced in the early stages of geographic study and are subsequently refined and developed. As understanding of a concept develops, increasingly sophisticated generalizations will emerge. The ability to organize the factual information of specific cases around useful concepts, and subsequently to make intelligent generalizations, is central to the growth of geographical understanding.

Skills. The skills that are practised and applied in geography range from those taught more directly in other school subjects to those that are central to geographic studies. It is important to stress the skill of using language well in order to write an orderly narrative, to present oral and written arguments, and to summarize the main points of a study. A variety of basic mathematical skills are also important to geographical studies, as students will use scales, interpret climatic data, and process numerical data in the course of their studies.

More specific to geography, students will have to observe, record, and classify information that has been obtained at first-hand or from secondary sources, and to develop problem-solving techniques in order to make good use of that information. Much spatial information can only be understood or communicated by the use of graphic, photographic, and cartographic methods. "Graphicacy", a term that subsumes all these modes of communication, is more central to geography than to any other school subject. The interpreting of all kinds of graphic information, the locating of oneself accurately on the earth, and the reading of maps at a variety of levels (from decoding to sophisticated interpretation) are not only critical to the understanding of geographical ideas but useful to the general education of all students.

Content. The factual content of a course in geography will be determined in part by the need to base the development of concepts and skills on the study of appropriate and relevant examples. It follows that courses in geography should deal mainly with the contemporary world. No course of study should remain static for too long; the choice and treatment of specific content should reflect an awareness both of the changing world scene and the attempts by the world's people to comprehend and respond to these changes. In the process, students should extend their knowledge of specific places and topics from the local area to include the home country and a range of localities in other parts of the world. Study areas should be selected to broaden the student's knowledge of different cultures, environments, political systems, and stages of technological development.

Attitudes. Geographical knowledge and understanding should lead to an interest in, and concern for, present-day problems, whether they be local, national, or global. This should include an informed concern for the environment and reasonable judgements of the need for conservation of both scenery and resources. Geographic studies should also encourage enlightened insights into the reasons for the conflicts between the environment and human needs and wants.

These general statements about the place of geography in the school curriculum are readily applicable to the achievement of the four basic goals of education in Ontario. Each student should be provided with opportunities:

- to acquire the basic skills fundamental to his or her continuing education;
- to develop and maintain confidence and a sense of self-worth;
- to gain the knowledge and acquire the attitudes that he or she needs for active participation in Canadian society;
- to develop the moral and aesthetic sensitivity necessary for a complete and responsible life.

In the Senior Division, geographic education should address itself to the fulfilment of these goals, placing particular emphasis on the student's ability to make rational and well-informed judgements on human occupancy of the earth.

GEOGRAPHY IN THE SENIOR DIVISION

The study of geography as a discrete subject rather than as an integrated aspect of social and environmental studies begins in the Intermediate Division (Grades 7 to 10). The Intermediate program is designed to give students opportunities to become knowledgeable about the physical characteristics and human use of a significant percentage of the earth's major land masses. It includes a one-credit course dealing with significant aspects of the geography of Canada. In addition, studies of the local area at a variety of scales are an integral part of the total program.

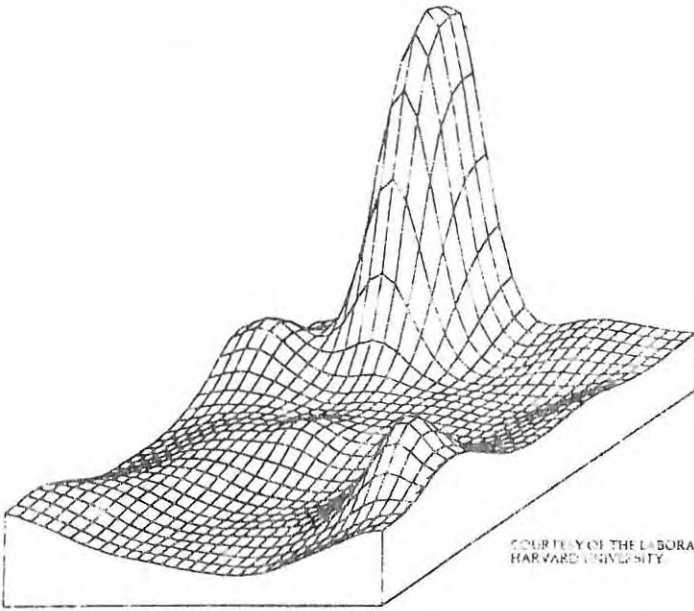
In the process, students should gain some facility with the skills and techniques used in geographic studies. They are encouraged to practise and develop all of the kinds of skills outlined in the previous section. They should also be introduced to and start to refine the major concepts and organizing ideas of geographic education outlined above.

Students who choose to study geography in the Senior Division bring knowledge, skills, and attitudes that they have acquired from this and other disciplines. Their expanding intellectual and emotional development allows them to refine and enlarge upon developing concepts, to add to their

conceptual framework, and to apply increasingly sophisticated techniques to the investigation and explanation of the world around them. Senior Division courses should build on this foundation in order to investigate a broad spectrum of ideas, to examine a wide range of content, and to encourage a variety of learning experiences. Geographic studies should be characterized by a systematic treatment of topics and an attempt to understand interrelationships.

The selection of relevant material is important. In recent years, issues such as population growth, energy supply, urbanization, Third World development, human settlements, and the resources of the sea have become world concerns. Topics related to these issues should be brought into the classroom in order that Senior students may understand them better. As well, where learning materials and techniques appropriate to the intellectual level of the students are available, they should be used to illuminate the issues. These include special-purpose maps, air photographs, satellite imagery, quantitative techniques, conference proceedings, journal articles, films, models, and slides. They may be used as the basis of information for units of study or as supplements to materials in textbooks.

Further guidance on the nature of studies in Senior Division geography is provided in a later section of this guideline.



COURTESY OF THE LABORATORY FOR COMPUTER GRAPHICS AND SPATIAL ANALYSIS,
HARVARD UNIVERSITY



STUDIES FOR THE SECONDARY SCHOOL GRADUATION DIPLOMA

The three course outlines in this section may all be used to develop credit courses at the Senior level. Each student may earn a maximum of one credit from each outline towards the Secondary School Graduation Diploma.

In devising Senior level courses, teachers should keep two factors in mind. First, students will have acquired a number of geographic skills in the compulsory courses at the Intermediate level. In addition to this background in geography, students are, in the Senior Division, considerably more mature than they were at an earlier age. Therefore, teachers are advised to consult the skill development sections of the Intermediate Division geography guideline and the section of this document entitled "Developing a Senior Geography

Program". These sections will help them capitalize on the students' background in geography and on their increased capabilities in the application of skills.

The courses of study from the Intermediate Division will also suggest new ideas for topics to be studied at the Senior level. In most cases, topics or areas studied at the Intermediate level should be repeated only when they can achieve freshness through an in-depth treatment made possible by the students' increased maturity. Such in-depth topics, however, should be balanced by other areas of study that give the students as broad a knowledge of world geography as possible.

STUDIES IN PHYSICAL GEOGRAPHY S61-071

The earth can be described as a dynamic globe, moving in space and possessing physical characteristics that are capable of supporting many forms of life. A Senior Division course in physical geography should provide students with opportunities to examine in a systematic way the elements that compose the earth's structure and the interacting system in land, sea, and air that support human life. Because the earth is dynamic, an understanding of its component systems is important in order to understand it in its entirety. Because people affect and are affected by the earth's systems as they seek to support themselves, it is also important for students to recognize the significance of the earth's physical characteristics to human life.

Students in the Senior Division will bring to this course knowledge, skills, and attitudes derived from many sources, including family and home, previous studies, the media, and direct observation of the world. As well, many Senior students bring with them a desire to systematize their learning, to find order and patterns in knowledge and to develop concepts and principles around which knowledge can be organized and related. They are increasingly capable of analysing information presented in many forms, of synthesizing it to produce new patterns, and of visualizing the interaction of different systems. At a personal level, they are searching to define their own places in the world.

A course in physical geography should capitalize on these attributes in providing opportunities for students to develop coherent mental atlases of the patterns and processes that exist in the physical world.

Aims

Courses in physical geography should give students opportunities to:

- develop a conceptual framework for organizing information about the physical world;
- analyse systematically the physical properties of the biosphere (the lithosphere, the atmosphere, and the hydrosphere);
- identify patterns that reveal the existence of order in the physical and biotic world;
- understand processes that help explain the existence of order in the physical and biotic world;
- evaluate theories that attempt to explain the properties of, and forces acting within, the biosphere;

- evaluate the effects of specific components of the biosphere on human life in selected location
- evaluate the effects of human activity on the biosphere in selected locations;
- practise and improve skills in field work and the use of the tools and techniques of geographical investigation;
- examine critically a variety of attitudes to the physical world: for example, people as users, exploiters, managers, conservers, or conquerors of their environment;
- reaffirm or revise their own attitudes and behaviour towards the physical and biotic world.

Course Content

Components of the Biosphere

To gain an overview of the natural environment on a global scale, it is necessary to develop a perspective on the components of the biosphere – the lithosphere on which we live, the atmosphere in which we breathe, and the vast hydrosphere on which we depend for our water needs.

In order to develop the proper perspective, it will be necessary to study basic information on topics such as the following:

- the elements of the biosphere – their properties and their significance for the survival of life;
- the patterns and distribution of land and sea;
- the critical balances maintained by natural cycles such as the hydrologic cycle and energy flow;
- some effects of human activities within the biosphere.

Energy in Nature

All movement or growth in the biosphere requires energy in some form. Because of this, study of the forms, sources, and functions of energy could be an introductory unit, a concluding unit, or an integral part of all units of study. Studies should include a consideration of the following:

- the importance of the sun as an energy source in nature;

- forms of energy in nature;
- the function of energy in a variety of processes such as plant growth and decay, global circulation systems, crustal movement of the earth, and the formation of fossil fuels.

Tectonic Forces

Although changes are barely perceptible over most of the earth, over millions of years great earth-building forces have changed the surface of the earth. Earthquakes and volcanic activity illustrate that the forces creating relief features continue to act in the present.

Studies that help to relate tectonic activity to existing patterns of relief should include basic information on topics such as the following:

- the origin, composition, and internal structure of the earth;
- theories related to earth formation and plate tectonics;
- the nature, variety and significance of earth-building forces – including diastrophism and volcanism;
- geological time;
- the distribution of major relief features, ocean basins, and continental platforms;
- human response to tectonic features and forces;

Gradational Forces

In opposition to the tectonic forces, gradation, through its erosive agents of wind, water, ice, and waves, works to reduce the earth's lithosphere to a uniform surface.

Since this area of study could occupy extensive periods of time if all agents and processes were treated, teachers are encouraged to be selective in the number and depth of the studies undertaken. These studies might involve individual and group work to develop an understanding of the basic processes that act to create depositional features. The following considerations will be useful:

- Degradation and aggradation may be used as a conceptual framework so that a systematic organization of knowledge may be developed regarding the erosion and deposition of materials over the surface of the earth.
- The geomorphic cycle may be used as a basis to establish ideas regarding the processes of landform development.
- Students can consider the work of gradational agents such as surface and ground water, wave action, wind, ice, weathering, and gravity to produce representative landforms.
- The beneficial and detrimental aspects of gradational forces can be considered.
- People can be examined as gradational agents.

Climate

Weather and climate have profound influences on individual lives. On a global scale, climate is a major determinant of the distribution of plant species. Its significance to human life may be judged by the far-reaching effects that follow a period of below-average precipitation in many parts of the world. Studies should include information such as the following:

- the global patterns of temperature, pressure, winds, and precipitation;
- patterns of climatic regions, including one system of climatic classification;
- the basic physical elements that cause day-to-day changes in the weather;
- human responses to climatic conditions and attempts to modify and control the weather; and
- the effects of human activities on the atmosphere.

Water

Water has always been an indispensable resource for all forms of life. In the twentieth century, the pressure on resources of all kinds has led to intensive study of the use of water in all parts of the world. Water worlds include the oceans and seas, freshwater lakes and rivers, ground water, and fossil water. Studies should include:

- the hydrologic cycle;
- the magnitude, distribution, and significance of the world's oceans and seas;
- the structure and configuration of ocean basins;
- the causes and effects of the circulatory systems of the world's oceans;
- the physical and biotic characteristics of representative sections of the world's oceans;
- the magnitude, distribution, and significance of the earth's fresh-water supplies;
- the magnitude, distribution, and significance of the earth's subsurface water supplies;
- the significance of water to biotic life;
- the significance of water in the distribution of human population.

Forms of Life

Plant and animal life exist wherever the environment permits. Large-scale patterns of vegetation are distributed over the globe and provide habitats for distinctive animal species. The patterns are significant because each environment provides opportunities and constraints for human occupation. Studies of forms of life should include:

- the pattern of major vegetation regions in the world;
- relationships among climate, vegetation, fauna, and soils;
- processes by which various forms of plant and animal life have been dispersed and modified;
- ecological relationships within distinctive natural environments (ecosystems);
- the effects of human activities on selected natural environments.

Soils

Soils are highly organized physical, biological, and chemical complexes which play the fundamental role of supporting vegetable life, thereby providing sustenance for both animals and people. As a result of their studies, students should be more aware of information related to the following:

- the nature and characteristics of soils;
- the characteristics and occurrence of significant soil types;
- types of soil parent material;
- factors contributing to the texture and quality of soils;
- processes of soil formation;
- relationships among climate, vegetation, and soils;
- the significance of soils to human life.

Alternative Approaches

Some planners may prefer to meet the aims of this outline by organizing a series of units that integrate basic ideas about the physical elements of geography. An understanding of basic principles and processes could be provided by referring to them at appropriate times during the study of areas, issues, themes, or topics. The following list of topics may assist teachers to select and organize content in alternative ways. Where these are further refined to provide clear direction and well-defined tasks, the ideas may also provide appropriate material for studies by individual students or groups.

- Humid areas and the work of water
- Dry areas and the work of the wind
- Littorals
- Limitations on the production of food
- Physical disasters
- Ideal climates
- Stability in nature
- Prediction techniques for natural phenomena
- Measuring, managing, and harvesting the products of natural ecosystems
- Ecosystems and population limits
- The International Geophysical Decade
- Satellites and remote sensing in gathering data
- Diffusion, dispersal, and succession of species
- Adaptation, modification, and intervention in ecosystems
- Legacy of the Ice Age in North America
- Theories of continental drift
- The effects of climatic change on ecosystems
- Distinctive biomes
- Preserving wilderness areas
- Persistent substances in nature



Organizing a Course of Study

In organizing a course of study, curriculum planners should review a number of important considerations, some of which are presented here.

Courses should be developed as a series of units, each of which develops a number of basic ideas. The units should proceed in a logical sequence, and each should relate to the overall aims of the course.

One desired outcome of studies in physical geography is an increased student awareness of order and pattern in the physical world. Although the physical aspects of the environment are not a static framework and homogeneity is not common over large areas of the earth's surface, in the context of any unit students should be able to:

- find evidence of the existence of an order or pattern;
- gain knowledge about the instrumentation used to collect data;
- develop or become knowledgeable about principles and theories that help to explain order or pattern;
- test the validity of principles and theories by gathering evidence that supports or refutes them.

Students should recognize as well that human occupation normally complicates the natural order.

Studies in physical geography take many of their basic facts from physical and natural sciences such as geology, geomorphology, climatology, meteorology, biology, and pedology. This knowledge is organized and related to help explain the many and varied physical processes that create and modify landscapes. Care should be taken that excessive time is not devoted to studies of such sciences in isolation. Instead, students should come to see how knowledge derived from these

sources helps to explain the processes, patterns and distributions that result from many variables acting simultaneously. The focus should be on synthesis of relevant information from these sources in order to explain the effects of the variables in combination. The human dimension is important because people affect and are affected by the physical environment.

Teachers are encouraged to include a variety of alternative teaching strategies as they organize units of study. The foregoing suggests two broad approaches to studies in physical geography. One is a systematic study of the physical processes in the biosphere and their significance to human activity. The other approach begins with particular issues, questions, or problems that are suggested by human attempts to make use of the earth; in the course of the study, these are related to the underlying physical processes. Teachers utilize both of these basic approaches and many variations of them to ensure that there is variety in classroom activities, and that the physical world and its significance to human activity are related.

It is intended that students should gain an overview of the earth and its component systems. Eight broad areas of study have been included in the content for this course. Course planners should ensure that adequate time is devoted to each so that students can gain a comprehensive view of the physical world. This does not mean that each broad area must be the basis for an individual unit of study. Correlations among climate, vegetation, and soils, for example, may make it desirable to study these within one or more ecosystems in order to establish the relationship of each component to the others. Planners should design their own series of units and strategies in order to achieve the aims of the course. The approaches to content and depth of study chosen should be appropriate to the students for whom the course is intended.

STUDIES IN HUMAN GEOGRAPHY S61-072

Human geography is about people – people developing a distinctive way of life and, in the process, making their imprint on the surface of the earth. The challenge of human geography is that the list of human imprints on the earth is almost endless and constantly changing; a boundary is relocated and patterns of spatial interaction are drastically altered; a new factory covers 10 ha of good farmland and mineral deposits 800 km away are developed to provide it with raw materials; an offshore well blows wild, and 30 km of white sandy beach and 10 000 sea-birds are blackened with oil; a city redevelops its downtown core, and new buildings change both the skyline and the micro-climate.

Human geography is a systematic study of the areal manifestations of people's activity on the surface of the earth. The basic needs of people include food and shelter, which must be provided in some way by the environment. Few humans, however, are content with the gratification of mere basic needs. History records ever-increasing expectations for higher standards of living in such areas as clothing, comfort, convenience, mobility, communication, health care, personal services, and forms of creative expression. Moreover, it is

characteristic of human groups to develop a strong bond with the territory they occupy, to establish its boundaries, to organize its space and resources, and usually to exclude outsiders. The pursuit of these goals has resulted in the development of complex political institutions which control many aspects of life including such things as the organization of agriculture and industry, the location of transportation facilities, the types of settlements that may be developed, and the amount of pollution that may be released into the environment.

In the process of establishing themselves in the particular space on the globe, many human groups have tended to develop a cultural homogeneity based on language, religion, racial characteristics, education systems, and other such features that give a group a common identity and coherence.

The student of human geography studies the characteristics of human groups, the ways in which they interact with their environment, and their imprints on the surface of the earth.



Aims

Courses in human geography should give students opportunities to:

- recognize that all human use of the earth is subject to the opportunities provided and the constraints imposed by the natural environment;
- examine a selection of the dynamic processes by which people occupy and organize the earth's surface;

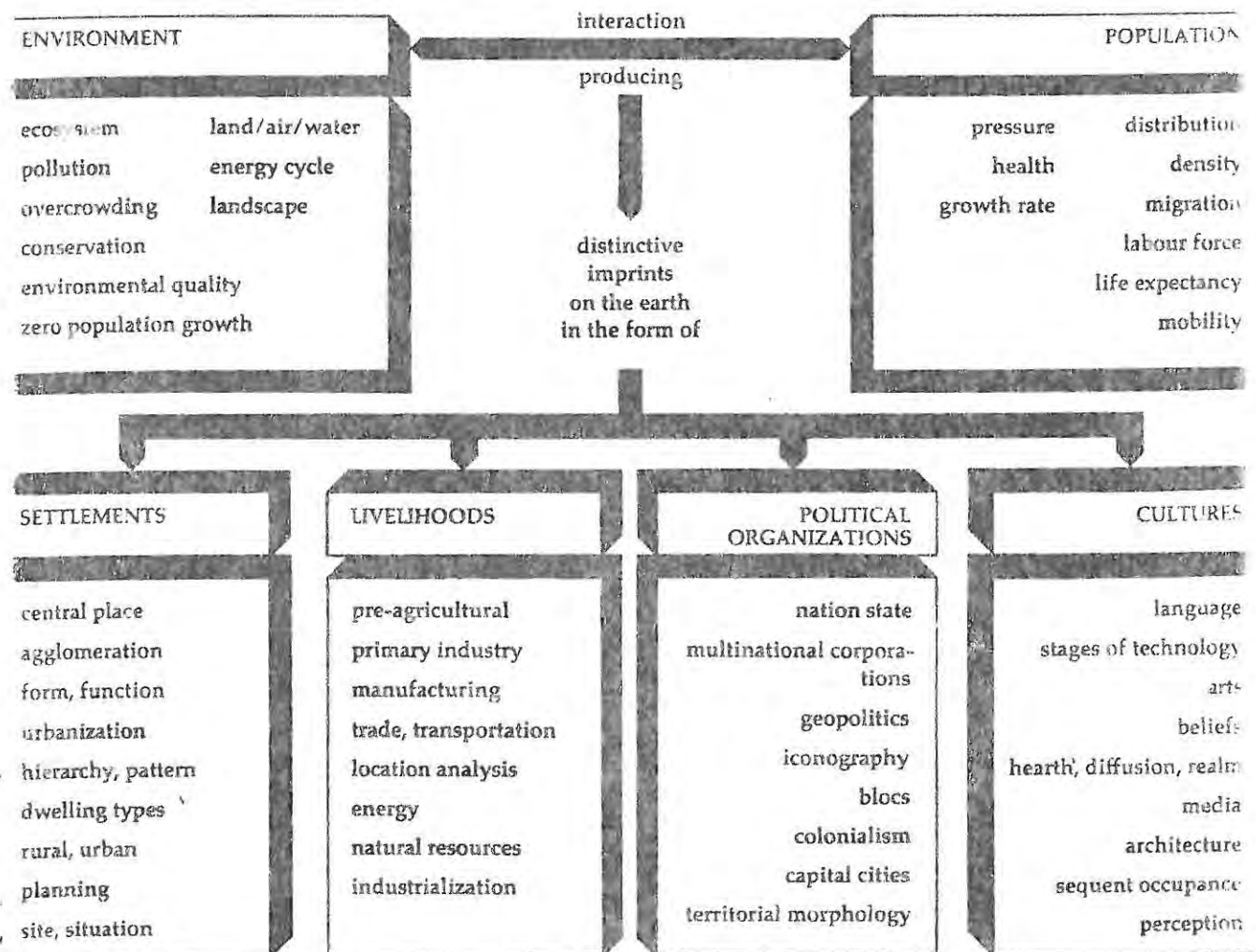
- develop criteria for categorizing the distinctive imprints that various human groups make on their area of the earth;
- account for differences in the ways of life that can be identified from one part of the world to another; and
- evaluate various environments and ways of life (including their own) with the help of increased factual knowledge and advanced intellectual skills.

Course Content

Every course in human geography will deal with a number of key elements, the relationships among them and the patterns that emerge from their interaction. For the purposes of Senior Division

courses, six such elements have been defined. These are shown on the diagram below, accompanied by some significant ancillary concepts.

THE ELEMENTS OF HUMAN GEOGRAPHY



People occupy space on the earth's surface and use that space to sustain their lives. Thus, the two basic elements present in all studies are:

population – the number and distribution of people, their movement, and the characteristics they develop as they organize themselves in a particular location;

environment – the critical background to all human use of the earth, one that is never static and that may be drastically modified by the people who use it.

Superficially, it may appear that people are the dynamic force and environment a passive medium in the relationship; however, it is increasingly clear (to scientists and informed citizens) that this is far from the case. As people interact with their environment to meet basic needs, the environment responds by changing in accordance with physical principles. It is important, therefore, that students develop an understanding not only of the effects that human activity has on the earth, but also of the ways in which the earth responds to human activity.

The interaction between these two basic elements, through processes such as diffusion or industrialization, results in the distinctive imprints that have been classified as follows:

settlements – the way people organize their living space, from the widely spaced settlements of a desert to the huge conurbations of the industrial regions;

livelihoods – the way people make a living and the imprint that this makes on the surface of the earth;

political organizations – the systems that people devise for sharing space and its resources, and for deciding how they shall be used;

cultures – the accumulated heritage of a people including their perceptions of the world, their beliefs, their stage of technology, and the values they cherish.

Obviously none of these elements exists independently, and an examination of the interrelationships among them will develop an understanding of the following ideas and processes.

Opportunities and Constraints of the Environment

The distribution of the world's people suggests that while the range of "livable" environment is very great, some are more desirable than others. There are, of course, practical considerations – the ability of the environment to support large populations – soil, water, and thermal conditions for food production – and of the availability of useful materials to provide livelihoods for large numbers of people. However, technological innovation and human perception have extended the range of both "desirable" and "livable" environments.

Inevitably, however, there are constraints. Every area on the earth's surface has disadvantages as well as advantages. To improve a lifestyle in warm sunny environments, it may be necessary to incur high costs for air conditioning or water supply. To exploit the resources of cold or moist environments, even heavier investment may be required in building and energy costs. In all cases, there are environmental costs for which an acceptable limit must be established. Students must learn to identify these constraints and to recognize them as environmental influences rather than controls.

Dynamic Processes

People and their environments are constantly both initiating and experiencing processes that change the nature of the human imprints on the surface of the earth. Corporate decision-making is an example of a dynamic process that can have implications for human geography. People exercise choice in terms of comparative advantage. The factory that relocates in the American South from a more northerly climate may have added transportation costs, but land for expansion and modernization may be cheaper and the labour force may be easier to "keep happy" in the more moderate climate. The human imprint on the landscape is thus changed in two places. Students should have the opportunity to examine some of these dynamic processes and to investigate relevant examples. Some of the most obvious processes are spatial interaction, technological innovation, diffusion, migration, natural cycles, industrialization, sequent occupance, urbanization, colonial development, and political expansion.

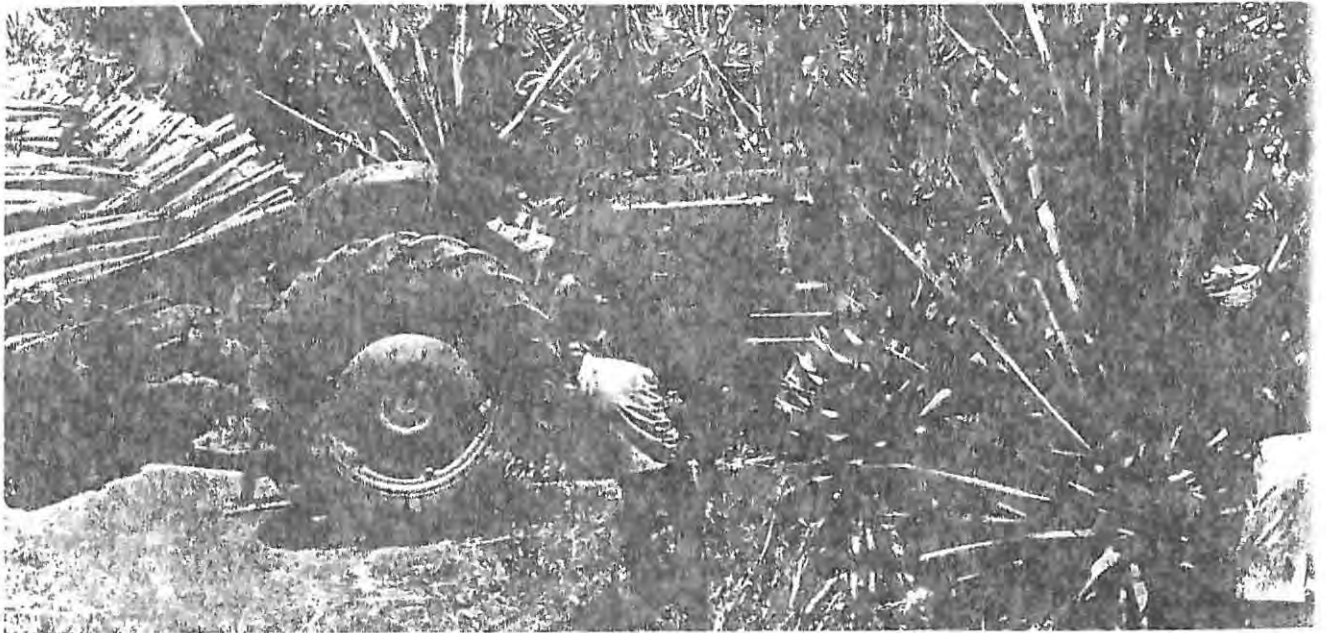
Description and Explanation of Human Imprints

Evidence of human activities can be found almost everywhere on the earth's surface. The nature of the imprint tells something about the people who made it. For instance, farm settlement in Southern Ontario has been characterized by relatively small, rectangular fields marked out by sturdy fences. The dispersed farmsteads contrast with the linear pattern of rural settlement in Quebec

and may be examined as a cultural preference. The fences, too, may have been the result of cultural preference, or merely a practical need to contain livestock. They may also say something about the environment in which the settlement took place: a stump fence almost certainly testifies to the struggle to clear the land of its forest cover while a line of stones represents hours of back-breaking labour to prepare glacial till for the cultivation of crops. Such factual observations of human imprints permit the formulation of concepts about the results of human activity on a rural landscape. Students should have opportunities to practise observation, in the field and from maps and photographs, and to organize knowledge to form concepts that help explain the distinctive imprints that they are describing.

Ways of Life

The development of the students' ability to account for ways of life – especially those that are markedly different from their own – must be a central aim of every course in human geography. The way of life of a people is a complex mixture of environmental and cultural heritage, political organization, numbers of people, settlement patterns, and ways of making a livelihood. The number of facts to be interrelated could become overwhelming. However, human geography provides a framework of elements by which factors may be organized. Students must then use the organization to account for varying ways of life in an objective, non-judgemental, and useful way



Organizing a Course of Study

A course organized around the six content elements would be the basis of a systematic study of human geography. However, such a study would be a formidable undertaking. Planners should consider the advantages of selecting a particular focus – economic, cultural, or environmental.* The selection of a focus will enable planners to develop courses that allow for an in-depth treatment of content material and the acquisition and practice of geographic skills consistent with the expectations for Senior-level study.

The selection of course content will be governed by the conceptual framework that is chosen to be the major focus for a course. The development of this framework will involve course planners in the task of selecting organizing concepts. Most of these will be directly related to the primary focus. However, in each topic there will be opportunities to develop ideas that are related more specifically to other elements of human geography.

Economic focus

A course that takes as its focus "livelihoods" (economic geography) will use as its central organizing principles those concepts and processes associated with economic activity. Other elements of human geography will be examined in the context of economic activity. Thus, a unit designed to develop the concept of primary industry could involve the consideration of conservation practices (environment) and the growth of distinctive types of settlement such as company towns (settlements). To develop a thorough understanding of primary industry, one would need the help of such concepts as availability of labour force (population), the operation of multinational corporations (politics), and stages of technological development (culture). Such a course could be organized by using the following topics:

1. Types of economic activity, their distribution, and characteristics:

- subsistence activities, extensive and intensive; the effect of technological change on subsistence economies;

- primary or extractive commercial activity, food and non-food crops, animal husbandry, mineral resources, and sources of energy; systems for the allocation of scarce resources; resource management; conservation and the political implications of resource development;

- manufacturing, cottage industries, assembly line and complex design operations; location analysis and theory; comparative advantage; effects on the physical environment; the relationship between industrialization and the standard of living and quality of life;

- tertiary activities, trade, transportation, financial and professional services, education, entertainment, government; specialization of work; multinational corporations; trade agreements.

2. Central places and their relationship to economic activities:

- agglomeration; reasons behind the tendency to cluster and resulting spatial patterns;

- site, situation, function, sphere of influence;

- relationships between the range of tertiary activities and the size of central places; hierarchy and pattern; growth of megalopoli;

- physical and cultural implications of the process of agglomeration; disruption of environmental equilibrium; population densities, population pressure, physical and mental health, age structure, birth rates.

3. Contemporary economic issues:

- the effects of increasing world demand for raw materials such as petroleum, iron ore, fibres, asbestos, potash, coffee, bauxite;

- the concentration of economic power in a few hands;

- the influence of large corporations on small nations;

- the effects of shortages in important commodities such as oil, coffee, sugar, cocoa;

- the effects on individuals of increasing specialization of tasks;

- the pressure on land because of competing uses

- the effects of the increasing interdependence of world economies.

*The Ministry guideline entitled *Urban Studies, 1971* provides for the organization of a course in the area of human geography, with a special focus on settlements.

Cultural Focus

For a course that focuses on *cultural* geography, the organizing concepts would be selected from the elements "cultures", "population", and "political organizations". The other essential elements would be studied in the context of the topics selected to develop these organizing concepts. Thus, a unit designed to develop the concept of sequent occupance in a selected area might involve considerations of overcrowding (environment), mobility (population), economic opportunity (livelihoods), and colonialism (political organization). Such a course could be organized around the following themes:

1. The human landscape as evidence of the values, economic and political organization, and technological capabilities of the people who use the area:

- indications of cultural identity such as land use, spatial organization, architecture, transportation and communication links;
- the processes by which an area assumes an identity from the culture of its inhabitants;
- the evolution of a cultural identity over time, including sequent occupance.

2. Processes of diffusion and their effects on people and the environment:

- causes of migration and the effects of migrants on receiving areas;
- the significance of the physical environment, such as mountain barriers, in the diffusion of ideas;
- the effects of modern technology on processes of diffusion;

- the spread of knowledge, ideas, beliefs, inventions, and such things as plant species and diseases;

- the effects of one culture on another in areas such as political organization and economic systems.

3. Race, language, and religion as factors in the development of the human landscape:

- definition of the terms;
- places of origin of major races, languages, and religions, and their present distribution;
- how each can shape the social, spatial, and economic patterns within an area;
- their changing roles in the contemporary world.

4. Cultural identity:

- factors that contribute to a composite cultural identity and the part played by territory in its development;
- cultural homogeneity compared with multiculturalism; the process of acculturation.

5. Political activity:

- examination of a variety of organizations (tribe, the nation state, the empire, the "bloc") and their effects on the use of the earth;
- the interrelationships between political organization and cultural factors within selected areas especially those that create tension;
- present trends — the drive of small groups towards political autonomy and the contrary trend towards large political units.

Environmental Focus

Another possible approach to a course in human geography would be an investigation of the human use of the earth, in which case the focus would be on the basic elements of *environment* and *population*. Such a course could be organized around the following topics:

1. Environmental variation:

- basic factors of terrain, soil, atmosphere conditions, and water as criteria for identifying natural environments;
- spatial distributions of the earth's physical environments;
- the tolerances of ecosystems to changes in their web of interrelated processes;
- relationships between population distributions and environmental conditions.

2. Resources for people:

- the methods used by past and present societies to meet human needs for food, shelter, and an acceptable standard of living;
- environmental (air/land/water) and economic resources and their adequacy in meeting the needs of all the world's people;
- the significance of energy flows in the development and maintenance of natural landscapes and environments created by people;
- applications of scientific principles and technological advances in making use of natural resources and conserving the environment.

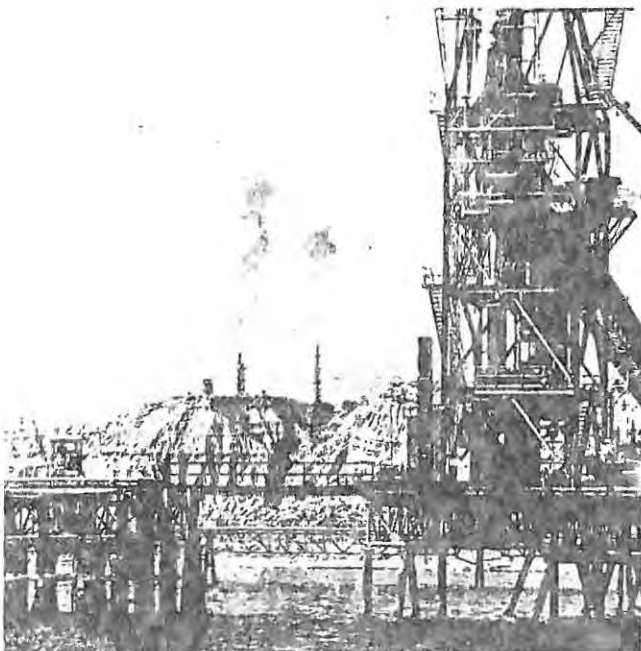
3. Effects of human activity on the environment:

- the characteristics of environments that have been significantly modified to meet human needs such as agricultural lands, industrial regions, and urban areas;
- the consequences of increasing population and rising economic expectations for natural environments;
- human landscapes as spatial reflections of a society's philosophy and values in modifying the natural environment for human needs and wants.

4. Quality of life:

- the effects of modified environments on the quality of human life;
- the role of political organizations – local, national, and international – in determining the human use of the earth;
- the opportunities and the constraints that different environments present to humans who have aspirations to create an acceptable way of life;
- implications for the future of present trends in the human use of the earth.

Whatever focus is selected, teachers will be guided in their choice of ancillary concepts and topics for study by the need to accomplish the basic aims of human geography courses and the essential learnings outlined in the section on course content.



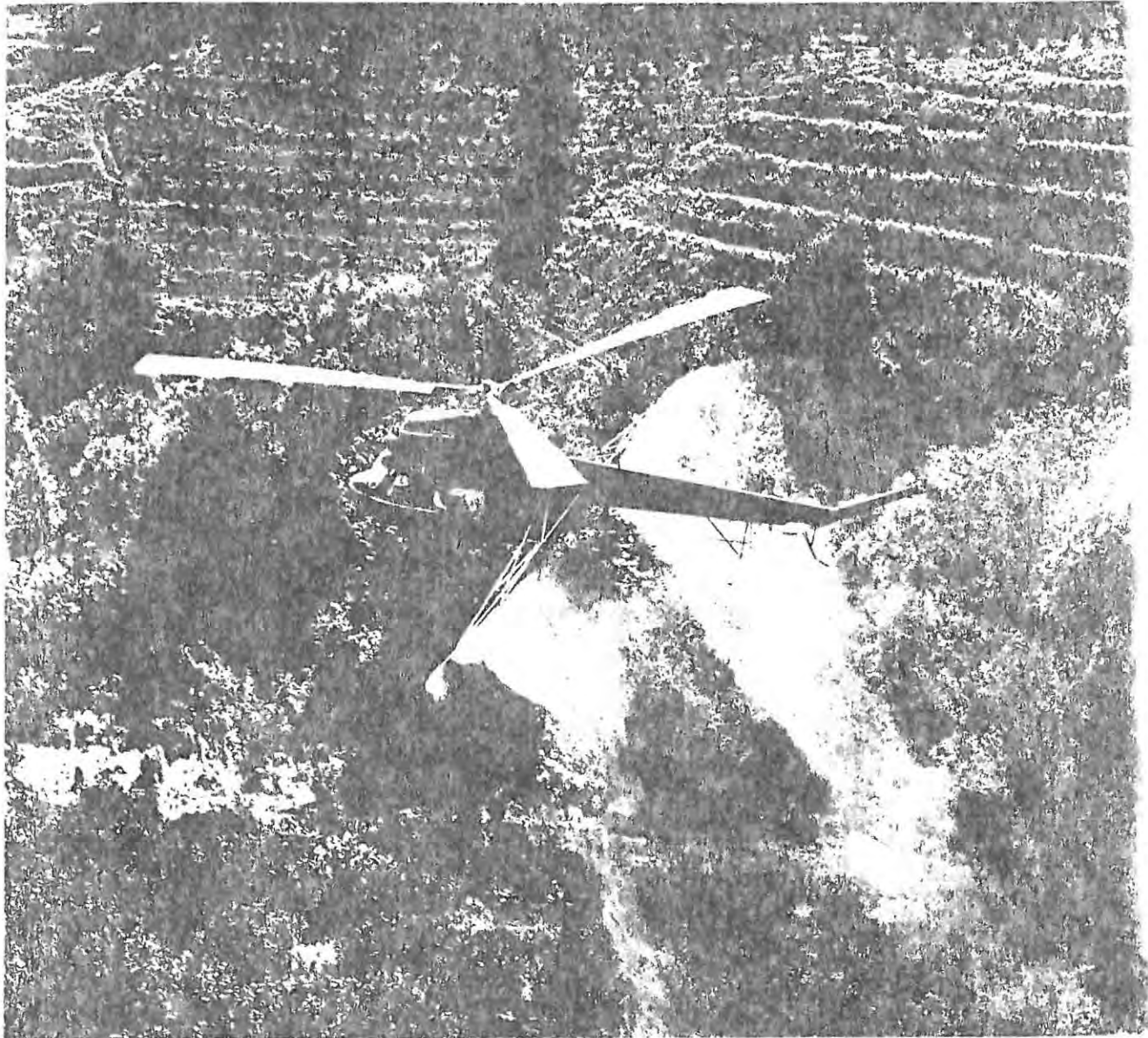
STUDIES IN REGIONAL GEOGRAPHY S61-073

Much of the development of geography as a discipline for describing and explaining the characteristics of the earth has been based on attempts to identify the unique character of the world's places. The field of regional geography studies the interaction of specific human populations with their particular geographic locations. Geography studies place because it is an important factor in human affairs. One important expression of the civilization of any group of people is its achievements in adjusting itself to its environment.

Regional studies have had wide acceptance as part of the geography program in Ontario schools. They have been based essentially on a three-part rationale. In the first place, regional studies add significantly to the general knowledge of students.

Second, the integration of the facts of place in order to understand the interactions that occur requires the skills of analysing, determining relationships, synthesizing, and generalizing. Thus students gradually develop a sense of place that gives them a fuller understanding of the differences that are evident from place to place.

This course differs from those in the Intermediate Division in that students should themselves be searching for and delimiting an areal pattern, a pattern that helps them to distinguish differences from place to place, to see that similarities between regions are sometimes more significant than differences, and to recognize essential connections between places.



Aims

Courses in regional geography should give students opportunities to:

- add to their knowledge of the world by analysing the interaction between populations and their environments;
- practise skills of interpretation by using a wide variety of raw data, from a description of a place found in literature to the more traditional types of data such as maps and statistics;
- evaluate the significance of the physical background in determining the character of a region;
- recognize the influence of social, political, economic, and cultural factors on the development of regions;

- develop the synthesizing skills necessary to interrelate the different factors that combine to give a region its identity;
- test the validity of the criteria that they or others select to separate a region from its neighbours;
- develop an understanding of the individuality of each region and an acceptance of the differences from place to place;
- appreciate the advantages and difficulties that regional differences give rise to in the global village.

Course Content

A course will consist of the study of regions selected from at least three continents and will include the development of certain major concepts. While the degree of abstraction and the amount of supporting detail will vary according to the abilities of the students, all of the following major understandings about regions should be developed.

Regional Character

To develop an understanding of the character of a region, students should analyse and examine significant variables that make up a region. Physical, cultural, and economic factors will be isolated and studied. Relationships among variables will be established, and this process should lead to a synthesis of the multitude of facts that have been acquired. Some variables will emerge as more significant than others in establishing a holistic view. Thus, a student who wishes to tell what the Caribbean region is like must have not only an overall picture in his or her mind, but also enough

knowledge and understanding of the area to be able to select those significant aspects that will give the listener an accurate holistic view. Thus, at intervals throughout the course, students should be given practice in making their own generalizations that reveal a holistic view and that are based on analysis, synthesis, and informed judgement.

Regional Type

Regions are defined for specific purposes, and the unique quality of a region will be determined to some extent by the purpose of the person defining the region. A general, or single-factor region, such as the Corn Belt or the subarctic region, emerges because of a dominant characteristic. A functional region such as a milkshed or a school area is defined to delimit a specific activity or occurrence. A traditional region, such as the Little Clay Belt or the Great Plains, has many homogeneous features. Studies in this course should be selected to illustrate a variety of types of regions.

Boundaries and Limits

In any study of regions, we are faced with the challenge of drawing a line between one relatively homogeneous area and another. Some boundaries, such as the western edge of the Great Plains, are simple and easily drawn; others, like the eastern edge of the Great Plains, are much more complex and difficult to establish. Some act as barriers, while others, such as the Rhine River, encourage interaction. Cultural boundaries may not match political boundaries, as in the case of French-speaking Canada and Quebec. On the other hand, the boundaries between India and Pakistan were drawn in an attempt to establish boundaries between Hindus and Moslems.

Students should develop an increasing awareness of the problems of delimiting regions.

Regional Organization

Transportation and communication networks help to bind a region together and thus become major determinants of its character. Without the ability of its peoples to understand one another's language, Scandinavia would lose much of its regional character. The Golden Horseshoe (or wishbone) is a region at least partly defined by transportation networks.

In some cases, it is connections with other regions rather than internal communications that are the dominant influence. For example, the Muskoka-Hiburton area has developed a particular character as a result of improved highway connections with the Toronto area. Students might inquire to what extent transportation networks have influenced the boundaries and identity of a region and whether such networks are determined by a pre-established regional character.

Change Over Time

During any given period of time, changes will be occurring within a region. These changes provide opportunities for the study of the nature of processes such as migration, industrialization, and diffusion. Thus, the Gulf Coast of the United States has long been a distinctive region, but its character has changed considerably as a result of the tourist, aerospace, and petrochemical industries. In the Middle East, on the other hand, regional boundaries have had to be redrawn as a result of the tapping of oil resources and the establishment of the country of Israel.

Students should be aware of change as a factor in establishing regional character and boundaries.

Scale

A regional study may be undertaken at the level of a small tourist district or at the level of world political blocs. Most units are likely to involve regions on a scale between these two extremes. Students should be conscious of the differences that scale can make: differences in degree of detail of data available and differences in the type of conclusions that may legitimately be drawn.

Identifying Regions

Many of the patterns that can be identified on the surface of the earth are the result of human activity, and it is these patterns that form the basis for identifying regions. Students should be given an opportunity to formulate their own regions, for example, to delineate the Corn Belt. Such an activity would involve a variety of skills from the formation of hypotheses, selection of criteria, and accumulation and organization of facts to the evaluation of the final conclusion.

Over time, human activity acts to reorganize the patterns of use of the earth, and regions need to be redrawn when data and criteria change. Students could be asked to redraw their own school boundary in the light of new data or criteria. The same idea could be examined by exploring the feasibility of separate states for blacks and whites in the Union of South Africa.

Organizing a Course of Study

Within the rationale and aims of this course a great variety of regional studies is possible. In the selection of units that make up a course, planners should be guided by a number of major considerations, including the interests of students and teacher, the suitability of a unit for developing one or more of the major understandings described in the section on course content, the availability of resources, and the extent to which a unit will allow students to attain the aims of the course.

If students are to grasp the concept of a region so that it becomes a useful term of reference, they must move beyond the stage of understanding what others have done, and themselves attempt the tasks that regional geographers undertake. This means that they must exercise their skill in selecting, gathering, and organizing information into meaningful forms and have the opportunity to exercise judgement in assigning relative importance to relevant information. By going through these processes themselves, they will develop the insight to perceive patterns and relationships and learn to exercise sound reasoning in reaching conclusions that are consistent with all the available information. The materials that students work with, be they printed or audio-visual materials or personal observations, should allow them to make their own interpretations, discover relationships, or draw their own conclusions. Normally, students should follow up this exploration of the meaning of the facts with a comparison of their work with the conclusions of experts. However, in a subject as dynamic as geography, there is value in recognizing tentative generalizations as useful organizers to be tested in the light of future happenings, additional knowledge, or new experience.

In the study of an individual unit, it is usually desirable to focus on the development of a limited number of the understandings listed in the section on course content. Thus, the use of a sample study in one unit would allow the idea of scale to be highlighted. In another, the use of trade statistics for different years would stress the idea of change over time.

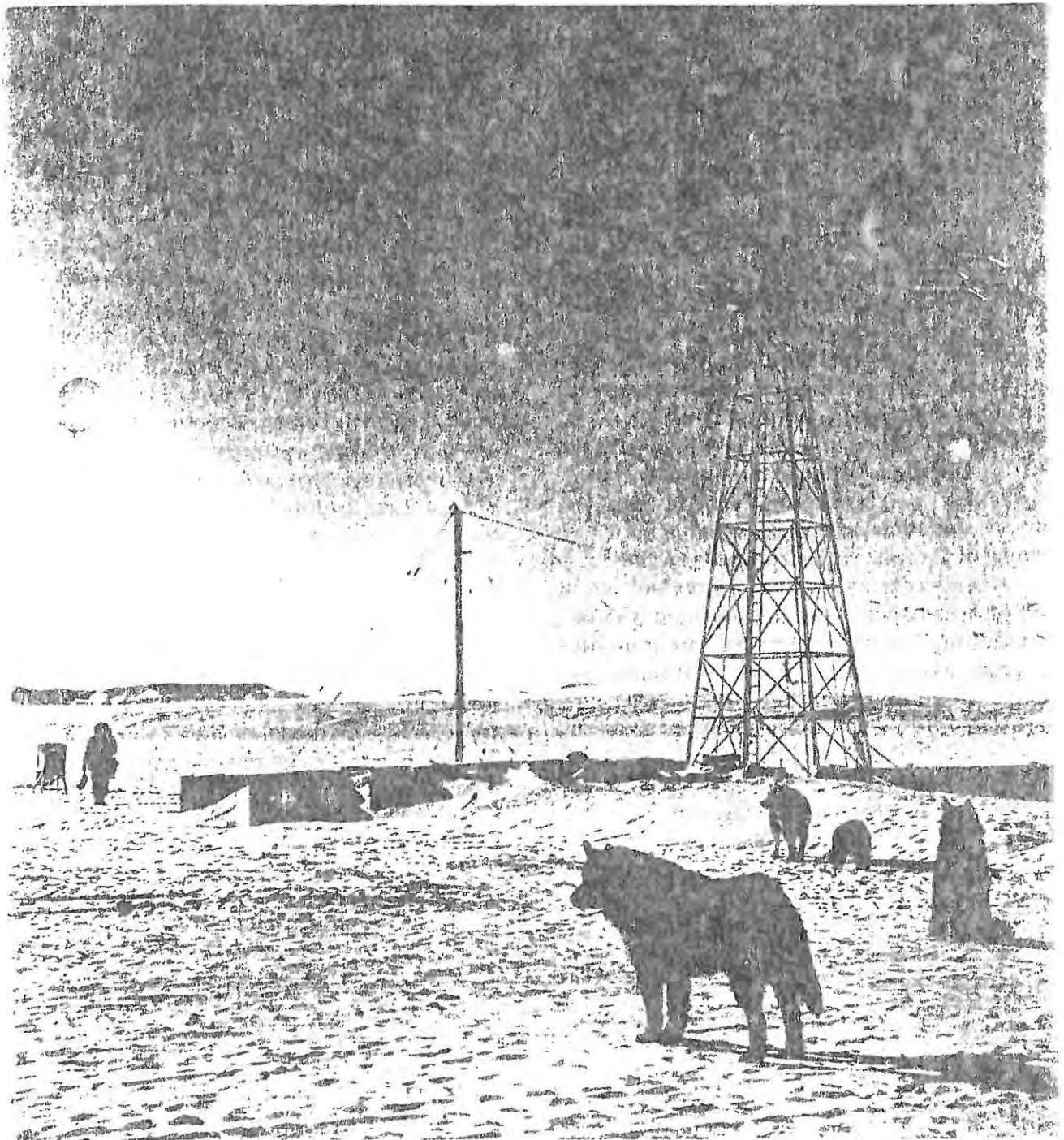
In the choice of regions that appeal to the interest of both students and teacher, a balance must be maintained between fascination with one's home country and the lure of exotic places. Consideration must also be given to the areas studied in Grades 9 and 10 and what will be studied in Grade 13. The desirability of returning to an area recently studied in order to obtain a deeper understanding should be weighed against the attraction of exploring areas that received little attention in the Intermediate Division.

Planners should consider the advantages of selecting a focus or theme around which the individual units are arranged and which they help to illuminate. One course could be constructed around the theme of the Third World, and the individual units would be used, as the year progressed, to build up generalizations about the nature of the Third World. Such a course might have among its objectives the examination of such questions as: What are the essential differences between these regions and the so-called developed areas of the world? What do they have in common, and how significant are these similarities as compared with their differences? How are their interactions with the developed world changing, and what are the implications of these changes? Are they, as is sometimes assumed, at an early stage in a universal development model or are they likely to develop in an entirely different way from the industrialized regions of the world?

Another course might take as its theme "Regions as a Basis for Planning". Increasingly in the twentieth century the region is being used as the basic unit for implementing political and social policy. The identification of potential regions as a basis for making decisions about future growth and development can be undertaken only after considering a whole matrix of interrelated factors. Students could use their knowledge of regions to project the process of change into the future and to hypothesize about the future character of an area if a regional plan were developed. In an advanced-level course this theme could lead to the

introduction of statistical methods, simulation techniques, and the development of models in study of geography.

Whatever theme or approach to a course is chosen, the completion of a unit should result in more than increased knowledge and understanding of an individual region. It should contribute to the search for general principles and for patterns common to many regions, and should add to the understanding of the processes behind the formation of the patterns.



STUDIES FOR THE SECONDARY SCHOOL HONOUR GRADUATION DIPLOMA

In this section, outlines are provided for the development of two single-credit courses for Honour Graduation Diploma purposes. Courses developed from these outlines must reflect the scholarship and depth of treatment appropriate to this level.

In some measure, students will:

- play a significant part in designing the program;
- identify topics and questions worthy of study;

- establish and test hypotheses;
- use sophisticated methods of data collection and processing;
- examine critically their conclusions and generalizations;
- undertake, in consultation with their teacher, individual investigations.

CANADA: GEOGRAPHICAL REALITIES H61-074

Canadians have developed the space of their vast country to produce a distinctive society in the northern half of North America. Canada is one of the favoured nations of the world and as such shares many characteristics common to the world's developed countries, including a high degree of industrialization and urbanization, a high per-capita demand for resources, a low growth rate in population, and a high standard of living. Accompanying these developments, however, have been problems such as a reduction in environmental quality, pockets of high unemployment, regional disparities in income, and a developing scarcity of some resources. Students should investigate the factors that have brought about these conditions and study the issues that face Canadians as a result of the geographical realities of location, physical attributes, cultural heritage, and patterns of economic development in Canada.

The Canada Studies Foundation has identified the following generalizations. These help to describe the major influences that shape Canadian society.

1. Canada is a country with a unique, northern geographic location.
2. Canada is a multi-ethnic country with two predominant linguistic groups.

3. Canada is an exposed country, open to a multitude of external cultural, economic, and political influences.
4. Canada is an urbanized country, rapidly becoming a nation of city dwellers.
5. Canada is a highly industrialized and technologically advanced country.
6. Canada is a large, regionally divided, and diverse country.

These six generalizations describe key elements that shape the character of Canadian society. Each can be studied from a geographic perspective. Students can investigate a wide range of questions, issues, and problems arising from each of these generalizations. Our heritage as Canadians is a large northern country with the accompanying challenges of a number of difficult physical environments, great distances, and a physical diversity that has established distinctive regional outlooks. Attitudes are shaped by the presence of two official languages, regional disparity, economic competition within the country, a growing concern for the rights and needs of Canada's Native peoples, and the increasingly multicultural nature of Canadian society.

Aims

As the result of taking a course developed from this outline, students should be able to:

- describe and account for the population distributions in Canada at national, regional, provincial, and local scales;
- recognize and articulate the values and attitudes that underlie decisions about the use of Canada's human and physical resources;
- demonstrate their knowledge and understanding of Canada's geographical realities as they relate to issues of national and regional significance;
- develop and use a variety of skills in gathering, organizing, and presenting geographic data about Canada and suggest reasons for the emerging patterns;
- identify the distinctive regional characteristics that combine to form the Canadian identity;
- analyse the nature and current pattern of Canada's economic development;
- evaluate the various external economic, cultural, and political influences on Canada;
- consider the opportunities and constraints that Canada's location and size provide;
- examine the issues surrounding the attempt to maintain a multicultural society with two predominant linguistic groups;
- identify and articulate their own values with respect to key issues in Canada's development.

Course Content

Northern Location

Canada's unique northern location has had profound effects on Canada's development and outlook. Our continuing Canadian concerns revolve around such things as a short growing season, cold winters, a critical need for heating fuels, problems of transportation and communications, and problems with the delicate northern ecological system. Our northern location has tended to compress our small population along an east-west axis within a few hundred miles of our southern border. Students should achieve an understanding of the effects of Canada's unique northern location on Canadian development.

The following areas can be explored:

- the northern environment – location, size, extent, physical characteristics;
- northern settlement – communications, construction, heating, and isolation;
- resource development – limitations on agriculture, the problem of building pipelines over permafrost, distances to markets (in the case of minerals and forest products);
- land ownership – Native land claims, hunting privileges, relationships with the ecosystem, role of governments;

- transportation – great distances, varied and difficult physical characteristics (permafrost, tundra, rugged terrain).

The Multicultural Heritage

Many studies can be undertaken to determine how the Native peoples and the various immigrants to Canada have responded to the challenges of the Canadian environment and how they have left their imprint on the country. An historical analysis of spatial patterns will reveal the contributions of people of varied ethnic backgrounds to the cultural mosaic. An examination of the distribution of Canada's ethnic and linguistic groups will illustrate the benefits and difficulties associated with a multicultural society.

The following areas can be explored:

- peoples of Native ancestry – the unique position of Indians and Inuit in Canadian society;
- patterns of settlement – the distribution of various ethnic and linguistic groups; the settlement patterns of various immigrant groups;
- the analysis of census data – the location and extent of various ethnic groups;
- ethnic neighbourhoods – visible signs, sequential occupation, intraurban migration;

-- migrations to Canada -- patterns over time, interprovincial migration.

External Influences

Immigration, trade, foreign investment, communication, and transportation are just some of the ways in which Canada is exposed to external influences. Students should investigate patterns in these factors and assess their influences on various parts of the country. To do this, students can examine the effect of the north-south physical alignments in North America and the resulting influences on Canadian regional development. Canada's small population and our desire to enjoy a high standard of living have contributed to our need to import ideas, products, and capital, thus exposing us to external influences. Students should examine how this multitude of external economic and political influences has affected our development and whether there is a need to exercise control to limit them.

The following areas can be explored:

- the external influences on Canada's economic development - foreign investment, communications;
- the basis and patterns of Canada's trade - commodities, partners, trade balances, agreements, tariffs;

- the north-south alignment in North America - regional attitudes, migration, transportation;

- Canada's coastlines - defence system, offshore fishing, and mineral exploration;

- the economic influence of the United States - industrial and resource development and ownership, trade agreements, investment;

- migration - trends and patterns;

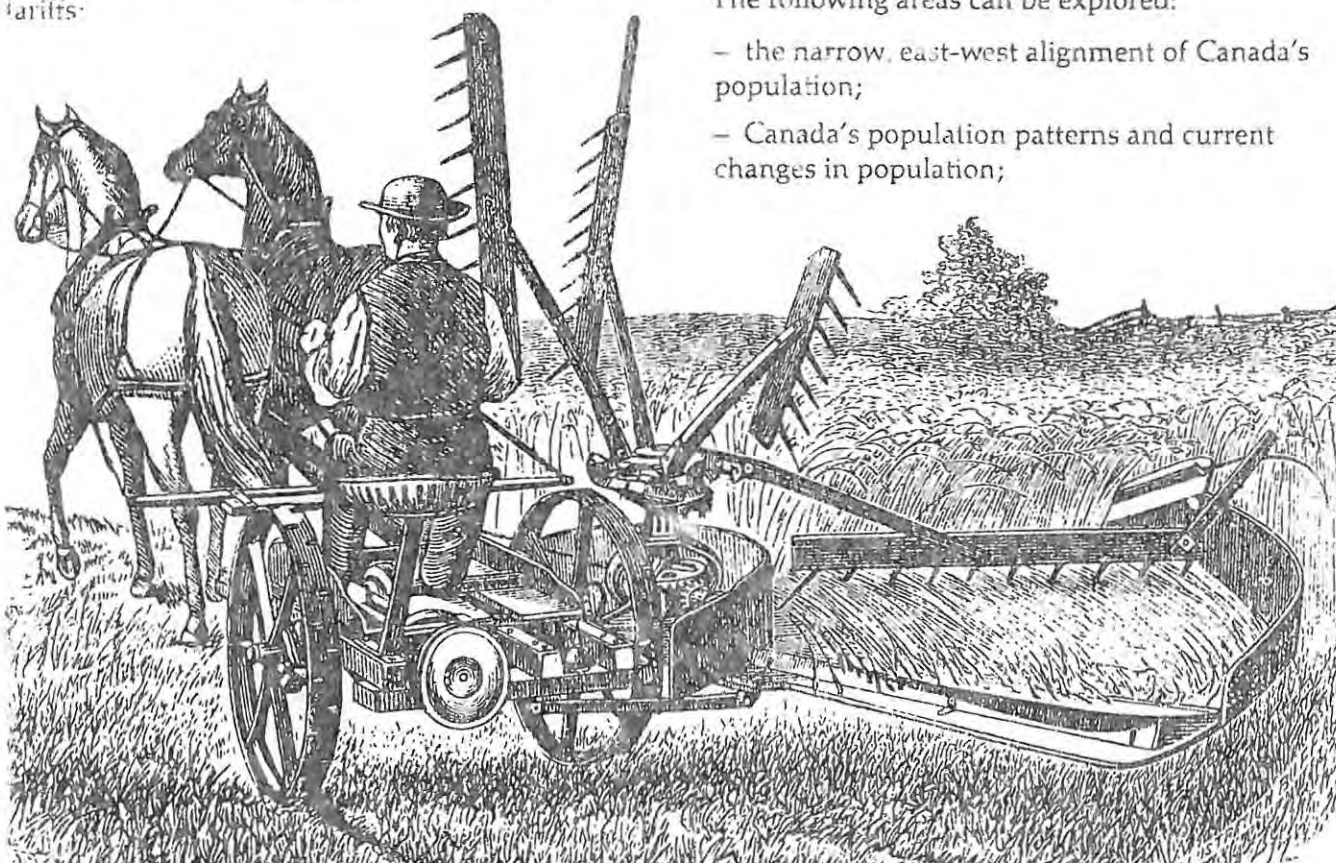
- international involvement - foreign and technical aid, peacekeeping, NATO, the U.N.

The Urbanization of Canadian Society

The major Canadian cities are the organizing centres for the nation's functional regions. What are the implications of this for Canada? Students should analyse the patterns of growth and development that have changed the rural-urban distribution of population in Canada. More important, their studies should evaluate what it means to a northern country, with a relatively small population and a very large area, to concentrate its people in a number of very large cities. Canada may be developing its own megalopolis along a corridor from Windsor to Quebec City. Students should examine the implications of Canada's becoming an urbanized country.

The following areas can be explored:

- the narrow, east-west alignment of Canada's population;
- Canada's population patterns and current changes in population;



- national and regional growth rates, urban-rural distributions, growth centres, urban-rural fringe problems;
- interregional migration;
- Canadian cities as nodes of functional regions – the Windsor-Quebec axis or corridor, Vancouver, Halifax, Edmonton, Winnipeg, Montreal, Regina, Sudbury, or other major Canadian cities chosen to illustrate how the size of a city relates to the region it serves;
- changing employment patterns in cities;
- the effect of rapid urban growth on the quality of the environment and on land use – the pressure of urban centres on recreational resources.

Canada's Economic Development

The areal distribution of economic activities in Canada provides the basis for a variety of geographic investigations. The geographic realities of a small, highly urbanized population, clustered near to its southern border and stretched across several thousand miles from east to west, make it difficult for Canada to maintain its economic viability. Students should analyse the basis of our economic growth, the locational factors that influence our economic patterns, and the factors that affect decisions on industrial location. Further, they should examine decision-making from the standpoint of regional disparities in order to judge whether all Canadians benefit from the fact that Canada is highly industrialized and technologically advanced.

The following areas can be explored:

- Canada's resource base – water, wood, energy, minerals, land, fish;
- primary industries – location and significance;
- industrial development – historical growth; location of representative economic activities; physical, political, social, and cultural factors;
- the effects of economic activities – on the environment, on population distributions, on the quality of life;
- the use of advanced technology;
- the ownership of Canadian industries;
- the regional distribution of industry – uneven growth and regional disparity;
- the problems of single-resource-centred settlements.

Regional Diversity

The sheer physical size of Canada, coupled with a tremendous physical and cultural diversity, ensures that Canadians will continue to have a strong sense of regionalism. Students will find a major opportunity to synthesize their understanding of Canadian geography by exploring the nature of Canadian regionalism and by defining a variety of Canadian regions.

In order for Canada to survive as a *nation*, Canadians must develop not only a strong sense of place, but also an appreciation of the differences from one place to another across the nation. Through their study, students should come to appreciate the geographical generalization that "Canada is a large, regionally divided, and diverse country."

The following areas can be explored:

- the types of regions in Canada – physical, functional, economic, cultural, geographic;
- regional character – contributing factors, drawing boundaries, the implications of scale in formulating regions;
- diversity and national unity – interdependence, disparity, implications of tariff and trade policies, centralizing and decentralizing tendencies;
- regional development – local, provincial, and federal planning policies, subsidies, and equalization payments.

Organizing a Course of Study

The areas of course content outlined above are expanded versions of the generalized characteristics outlined by the Canada Studies Foundation. They provide suggestions for organizing courses of study to meet the aims of an Honour-level course in Canadian geography. In addition to the broad areas of study, a number of more speci-

fic topics have been suggested. Some of the topics deal with more than one of the generalizations, while others are limited enough in scope for individual research and study. The lists of topics are not meant to be comprehensive; they are meant to suggest ideas to planners.

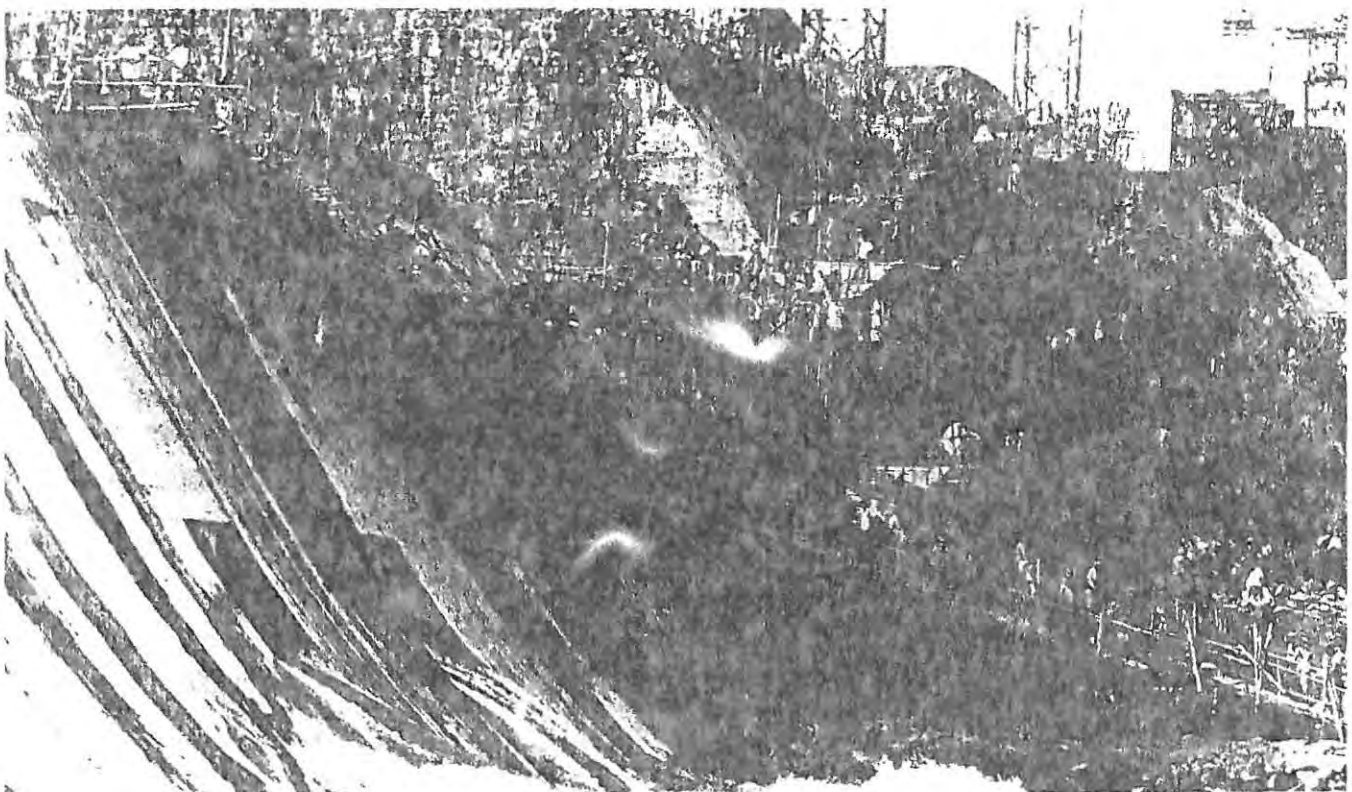
WORLD ISSUES: GEOGRAPHICAL INTERPRETATIONS H61-075

As the twentieth century unfolds, it becomes increasingly clear that all individuals are involved in a global society. Humans share common physical and psychological characteristics, common needs, and common experiences. All people rely on air, water, land, plant, animal, and energy resources. Through governments, corporations, unions, churches, investment, travel, media, markets, language, professional organizations, personal interests, and a host of other connecting links, peoples' lives are influenced by events and activities in virtually all parts of the earth. Clearly these commonalities outweigh the differences among peoples and make it in the best interests of all to co-operate to meet mutual goals. Furthermore, the emergence of a number of environmental, social, and economic issues of world-wide significance lends urgency to the need for students, in the final stage of their secondary school education, to understand the ramifications of living in a global village. The primary intent of an Honour Graduation course developed from this outline should be to provide students with a global perspective on the contemporary world.

This course outline is based on the following five concerns, which have geographic dimensions and which are global in significance:

- environmental equilibrium
- resource use
- demographic trends
- cultural, political, and economic aspirations
- technological applications

Each concern can be identified because a substantial body of information, derived from events in all parts of the earth, points to the existence of patterns of human-land interaction that have common causes and consequences. Each concern can be examined, therefore, in a number of contexts to determine the significance of the emerging patterns. Student knowledge and skills should be enhanced by a systematic examination of the issues and events that underlie the patterns and by the search for principles and concepts in the social and physical sciences that help to explain them. The search for principles and concepts is important because the future behaviour of individuals and nations should be governed by sound reasoning.



Aims

As a result of studies of "World Issues", students should be able to:

- identify and state principles of ecology that act to maintain natural environments in a state of equilibrium or modest change if left undisturbed over time;
- investigate and evaluate the effects of human activity on environments as people use resources to meet needs;
- examine issues and predict effects arising from the current distribution and projected growth of world population;
- comprehend and articulate the cultural, economic, and political aspirations of ethnic and national groups as these affect utilization of the resources of the earth;

- analyse and relate the effects of technological change on both "developing" and "developed" countries of the world;
- analyse and evaluate national and international responses to issues related to the foregoing aims;
- demonstrate a heightened awareness of the interdependence of all people through reference to a variety of connecting links among areas and peoples;
- project alternative futures based on an examination of current information and trends in the human use of the earth; and
- clarify their personal attitudes and values with respect to individual and collective responsibilities in finding solutions to issues concerning the human use of the earth.

Course Content

To assist planners in organizing courses of study, suggestions for studies have been provided in two forms. Accompanying a brief description of each concern is a list of items related to that concern. In addition to this, a second list of more comprehensive topics and themes has been provided following this section on course content. The latter list may suggest studies that will lead students to the relationships among two or more of the concerns. The lists are not intended to be comprehensive in scope; they are meant to suggest ideas that may provide direction to course planners. The two forms should make clear that studies may be organized in a variety of ways including both systematic and topical approaches.

Environmental Equilibrium

While it is characteristic of ecological systems to remain in a steady state or to change slowly over time, it has become increasingly clear that humans must not overestimate the resilience of the physical environment. Both human activities and natural events can create environmental imbalances that have long-term or irreversible effects and that, therefore, become issues or concerns. Examples may be found in events arising from a prolonged period of drought, oil spills, or the encouragement of lifestyles based on an ever-increasing consumption of resources. Each event illustrates the importance of environmental issues in contemporary society.

Studies should focus on the significance of environmental equilibrium. From an examination of a number of specific examples, students should achieve an understanding of the following generalizations:

- A natural ecosystem is a complex web of relationships among animate and inanimate things.
- A variety of ecosystems are distributed over the surface of the globe.
- Individual ecosystems have different levels of tolerance to changes in their web of relationships.
- Humans exist within the context of natural ecosystems.
- Human intervention in ecosystems induces changes.

The following areas can be explored:

- natural disasters and their effects – earthquakes, tsunamis, drought, storms, floods;
- human intervention into natural ecosystems – burning, clearing, damming, irrigating, fertilizing, introducing exotic plant and animal species, disposing of wastes into the environment;
- individual and collective responsibility in environmental issues – laws, treaties, organizations, clubs, agencies, individuals;

- specialization and concentration – monoculture, hydroponics, irrigation, hybridization, fertilization, persistent substances;
- psychological and aesthetic dimensions – wilderness areas, animal habitats, open space, vanishing and threatened species;
- distinctive biomes and their characteristics – tundra, forests, savannas, deserts;
- cycles and flows in the environment – energy, chemicals, water, nutrients.

Demographic Trends

Changes in population result from many factors, including birth rates, death rates, and migration. These act in combination to produce patterns of population on the earth's surface. Population issues relate not only to absolute numbers but also to density and distribution over the earth and to the composition of populations in specific areas. One current phenomenon is the process of urbanization, which, although worldwide in scope, has significantly different effects in each society in which it is taking place.

Studies that focus on demographic trends should provide students with opportunities to gain an understanding of generalizations such as the following:

- The capability of the earth to support human populations varies from place to place.
- The optimum population for any area depends greatly on cultural as well as physical factors.
- Historically there have been a number of means of population control.
- Patterns of population distribution and density change over time.
- The total capability of the earth to support human populations depends on a host of complex and interacting variables.

The following areas can be explored:

- the factors of demographic change – birth rates, death rates, net growth, migration, disease, famine, war;
- population density in relation to the resource base – urban densities, rural densities, representative areas and numbers, overpopulation, underpopulation;

- population patterns – urbanization, agglomeration, nodes, clusters;
- population compositions and their effects – age-sex pyramids, affluence, public health, labour force, demand for services.

Resources

The capacity of the earth to sustain human population at acceptable levels depends greatly on the ability of people to identify and use resources. Resources, therefore, can be defined only in a cultural context. Without knowledge, technology, capital, and suitable political organization, natural resources may lie unused or may be used wastefully.

Studies that focus on the significance of resources should provide opportunities to develop an understanding of generalizations such as the following:

- Resources are culturally defined.
- The demand for resources is a function of social and economic systems.
- Resources are often classified as renewable and non-renewable.
- Available resources include materials often classified as wastes.
- Resources may not run out, but instead may become too expensive to use.
- Energy in some form is often a key to converting materials into resources.
- All natural resources must come from the environment.

The following areas can be explored:

- the demand for key commodities – foods, fuels, wood, metal, fibres;
- energy alternatives – biomass, the sun, wind, tides, fossil fuels;
- resource ownership – personal, public, corporate, international, foreign;
- multiple-use resource management – forests, seas, rivers;
- the changing resource base – depletion, substitutes, synthetics, marginal resources, agricultural productivity, exploration.

Cultural, Economic, and Political Aspirations

In the three decades following World War II, the political maps of Eastern Europe, Asia, and Africa have had to be redrawn to keep pace with the disappearance of some political units, the emergence of others, and the relocation of national boundaries. Emerging and developing nations have established policies and programs to meet their own national goals. While the driving forces have often been cultural – language, religion, political ideology – economic issues of disparity among nations and between the rich and poor within nations have been recurrent themes in the unfolding world scene. In most cases, the changes have been accompanied by strife within a nation's borders or by friction with immediate neighbours.

During the same period of time, economic specialization, vastly improved means of communication, and co-operative agreements among governments have drawn nations closer together to meet mutual goals. Commercial, scientific, educational, and cultural organizations have formed alliances to share resources for mutual benefit. Since the ultimate goal of all progress is human development, it is important that students recognize both the broad patterns of contemporary cultural, economic, and political development and the way in which these are manifest in specific areas and situations.

Studies should focus on these human dimensions of the contemporary world. Through studies of issues and events that reveal cultural, economic, and political aspirations, students should develop an understanding of generalizations such as the following:

Cultural, economic, and political aspirations result from the human desire to maintain and prove individual and collective well-being.

The aspirations of individuals and groups are influenced by culture and environment.

Both the perception and the utilization of the earth's space and resources are affected by cultural, economic, and political factors.

Knowledge and ideas are spread throughout the world by a variety of effective processes.

The aspirations of individuals and groups for the use of space and resources may lead to cooperation or to conflict.

The following areas can be explored:

- legacies of the past – wealth, poverty, health care, disease, development, exploitation, independence, colonialism, aid, imperialism;
- forms of interdependence – trade, foreign aid, loans, technical assistance, international agencies, military alliances;
- forms of commercial organization – multinational corporations, organizations of commodity producers, cartels, trade blocs;
- emerging nations – Israel, Communist China, Indonesia, Tanzania;
- prospects of multicultural societies – Brazil, India, Indonesia, South Africa, Rhodesia;
- minority groups in societies – North America, Eastern Europe, the U.S.S.R.

The Application of Technology

Technological development is causing rapid changes in both the "developing" and "developed" nations of the world. Paradoxically, technological developments can solve old problems while creating new ones. Examples of these paradoxes can be found in the development of nuclear energy, the increasing dependence on chemical fertilizers to sustain food production, and the use of aerosol sprays for convenience.

Further, all technology operates within a social context. Technological applications can result in conformity, dependence, standardization, and control, conditions that can be viewed as threats to human liberty. It is important, therefore, in studying issues that involve the application of technology, to ensure that students are aware of the implications for human lives.

Studies should focus on the effects of technological applications on the contemporary world. Through the study of topics and themes, students should gain an understanding of generalizations such as the following:

- Technology involves the application of scientific principles to accomplish tasks with increasing effectiveness or productivity.
- The application of technology has been characteristic of human groups throughout history.
- The application of technology has led to the shrinking of the world towards a global village.

- Technology, like science, is neutral, but its application takes place in a social context.
- Different societies operate at different levels of technological development.
- Substantial disruption can occur when societies receive (employ) technologies that are not consistent with their level of development.
- Social attitudes and economic pressures often influence the application of technology.
- The effects of technological applications are not always predictable.
- Modern technology permits the application of scientific principles on a world scale.

The following areas can be explored:

- technology in resource conversion -- agriculture, mining, forestry, fishing;
- technology in data gathering and processing -- sensing, instrumentation, data processing, computing, analysis, networks, systems;
- direct and indirect costs of technological application -- capital, energy, pollution, health hazards, lifestyles, division of labour;
- the role of technology in modifying and managing environments -- insecticides, herbicides, fertilizers, biological controls, disease control;
- technology and transportation -- air, sea, land, space;
- the role of technology in the provision of basic needs -- food, water, shelter.

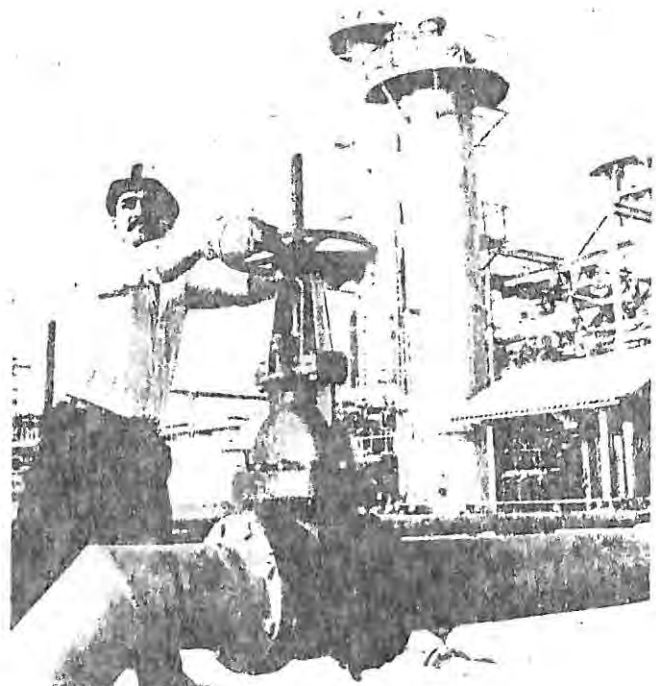
Integrative Topics

The following list may suggest starting points for studies that investigate the relationships among a number of related concerns. A unit on the Law of the Sea conference, for example, would address the need for international agreements regarding the future of two-thirds of the earth's surface. A review of the generalizations related to ecosystems, population patterns, resource development, economic aspirations, and technological competence is needed if students are to comprehend the task that participating nations are undertaking. An advantage of this integrated approach is the opportunity it presents for evaluating the relative importance that should be assigned to each concern in making decisions about the future.

For another unit, the five concerns that have been identified as the basis for this course may be useful subheadings for the study of the integrated topic. One of these concerns can also help to identify narrower topics for study by individual students or groups.

Some of the suggestions presented below are current, while others have been relevant for centuries. Course planners should add to or delete from the list as circumstances make it advisable.

- Global patterns of trade
- Third World development
- Lifestyles and economic development
- The shrinking world
- The energy "crisis"
- The United Nations Conference on Law of the Sea
- General Agreements on Tariffs and Trade (GATT) objectives
- Zero population growth
- World commodity needs
- Self-sufficiency as an objective for nations
- Measures of economic disparity
- Endangered and threatened species
- Population projections
- Human habitats



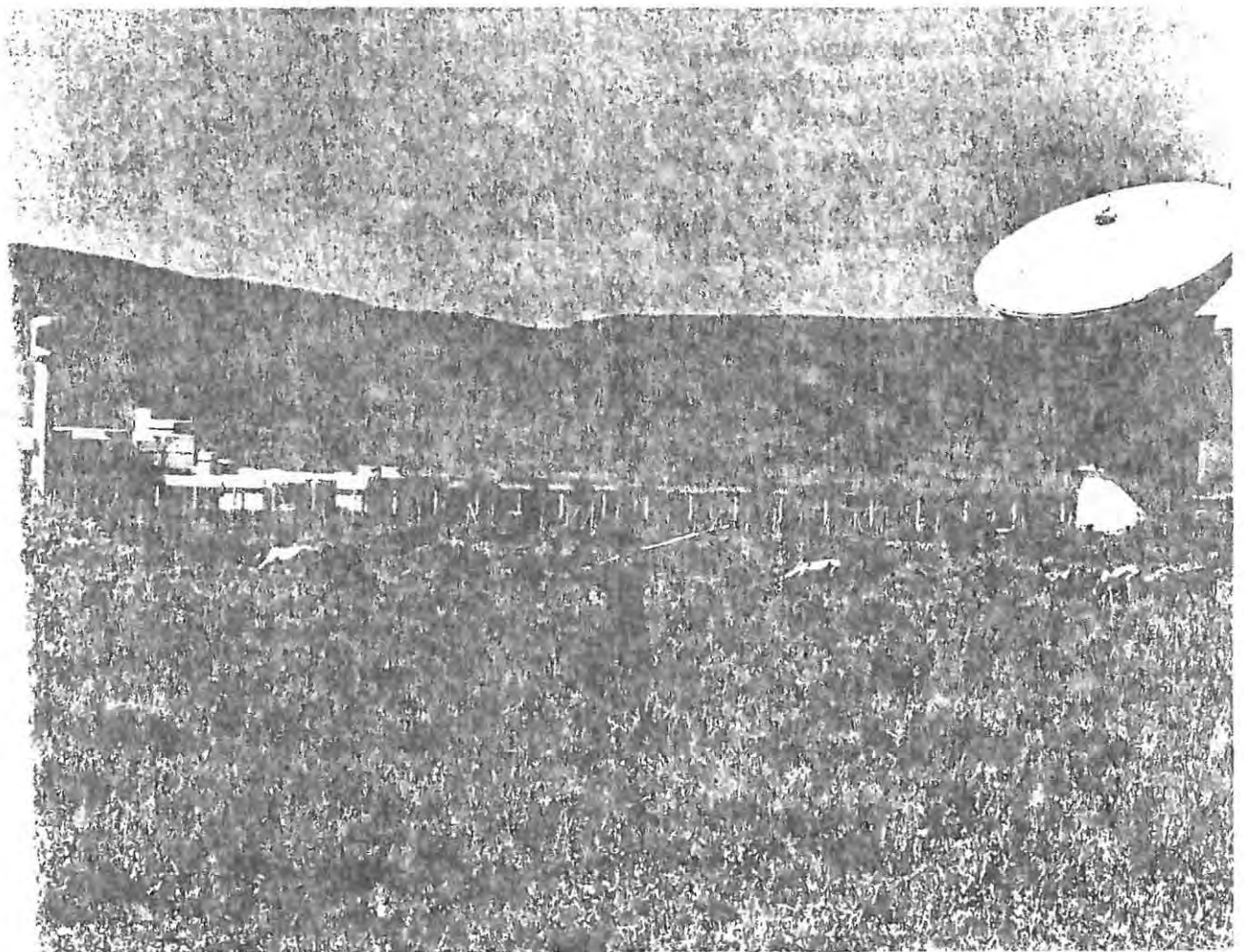
Organizing a Course of Study

While topics chosen for study may change from year to year as issues emerge or assume increased importance, all units in a course should relate to one or a combination of the five concerns. The concerns have been identified in these categories or convenience, but it will be recognized that each impinges on all the others and that any unit will likely incorporate information and principles relating to the others. For example, the use of insecticides is a technological application, but its effect is to introduce a new agent into an ecosystem; increasing urban populations often put pressure on agricultural land, a non-renewable resource; the supply and price of oil may depend heavily on the political alignment of a few producing nations.

The global focus has implications for course organization. Wherever possible, topics or themes should be chosen so that an issue is examined as it affects people or environments in a number of

locations on the globe. An essential understanding is that the total significance of an issue may be much larger than the sum of its parts. It should be clear, as well, that issues are perceived quite differently by persons in different locations or with different cultural outlooks. Students should be encouraged to recognize their own cultural biases and to view issues from as objective a viewpoint as possible.

Courses developed to study the world-wide implications of the five identified concerns have the potential to be wide-ranging in both content and teaching strategies. To maintain the geographic perspective, teachers may find it helpful to review periodically the section entitled "Developing a Senior Geography Program", which describes the expectations for Senior-level courses. The opportunities for skill development and concept formation in Honour Graduation courses should be particularly rich.



DEVELOPING A SENIOR GEOGRAPHY PROGRAM

The dilemma and the task of geography is to divide the real world in an artificial but useful way so that students can see the order among the different components and so that the multitude of relationships among physical and human phenomena may be identified and explained. Geography is a matter of perspective more than of content. The study of geography should provide Senior students with a perspective for examining what exists on the earth and where it is located. The lack of a unique body of content creates a problem in that an almost overwhelming amount

of factual information must be dealt with. It then becomes essential that studies in geography be organized around a well-planned conceptual framework. The conceptual framework then guides the selection of information and helps in the choice of methods for processing it. The three steps – selection of information, processing of information, and the formation of concepts – should underlie all studies in the Senior Division and should be the foundation on which all units and courses are built.

CONCEPTUAL UNDERSTANDING

In simple but useful terms, concepts are abstractions around which facts may be organized and about which generalizations may be made. All kinds of factual data can be amassed around the concept of the migration of people – their routes, their eventual destination, their mode of transport, their reasons for moving, and the like. The analysis of the information leads to the formulation of generalized statements, such as “Interprovincial migration in Canada increases primarily in response to increases in unemployment levels.” The simplest concepts are those used to describe things or objects – hills, farm, volcano, factory. The things to which these concepts refer can be seen or observed. Other things, by virtue of their area or time scale or simply because they are too all-embracing, cannot be observed in their entirety. Continental glaciation, for example, presents problems of scale because of both the massive extent of the process and its duration. Other concepts are so complex that it is difficult to comprehend all the facilities and operations involved. An example might be the concept of a distribution network as it pertains to a worldwide petroleum company. In addition, there are concepts that do not refer to objects or events but to ideas developed by people. These can never be observed directly. They include, for example, all concepts that express a relationship like population density or relative humidity. Finally, mention must be made of the major organizing concepts of geography which form the conceptual framework of the subject. They include terms like “spatial interaction”, “support of life”, “areal differentiation”, “resources”, “regionalism”, “people as choosers”, “constant change”, and “a global viewpoint”. Each, in itself, is a complex of interrelated concepts which, taken collectively, establish the perspective of geography.

These illustrations may show that concepts serve to convey abstract ideas which may be relatively simple or extremely complex. For students, the process of concept formation serves to build vocabulary, to expand the capacity to reason in abstract terms, to relate information from one domain of knowledge to other domains, and to improve the clarity and precision of communication with others. Because studies in geography should be contemporary and holistic, concept formation is not likely to take place in an orderly or neatly cumulative way; however, many concepts recur from study to study and become increasingly powerful as supporting detail and related concepts are woven in. Conceptual understanding should be a primary aim of the geography program. The development of a conceptual framework, therefore, is critical to the organization of effective geography courses.

In this guideline, the content of courses is, for the most part, described in terms of conceptual understanding rather than in terms of specific content examples. This allows for considerable flexibility in the organization of course material. At the same time, it requires that courses of study indicate what supporting concepts are to be used in the course and the way in which specific topics will be used to develop these conceptual understandings. Course planners should provide opportunities for concept formation by students, including those concepts that relate to human decisions such as perception, culture, values, and long-range human goals in terms of occupying the earth.

SELECTION OF CONTENT

As a discipline, geography is constantly undergoing change. While this adds to the difficulties of providing a definition that will be satisfactory to everyone, it is possible to summarize the basic characteristics of all studies in geography. The following three propositions provide the criteria by which a topic or unit of study may be assessed for its geographic content:

- 1. All studies, in some measure, involve investigations of *area, pattern, and interrelationship*.
- 2. All studies, in some degree, emphasize the physical and human organization of space that give *character to the world's places*.
- 3. All studies, in some way, have to deal with the question: "*Why are things located where they are on the earth's surface?*"

Things are studied because, just as all events, facts, or situations exist in time, they also exist in space. Since it is not practical always to study the whole globe, it is by the study of specific areas that an understanding of many geographic concepts can be developed. These include concepts such as regionalism, areal differentiation, place, homogeneity, areal association, hinterland, occupation, succession, adaptation, modification, envi-

ronment, and a host of others. A second major objective of studies of areas is to develop skills of synthesis, that is, to find unifying characteristics within a defined area so that a holistic understanding of the area is achieved.

Patterns also exist in space. The patterns that are of particular interest to geographers relate to the distribution and associations of phenomena in space. Concepts arising from studies of patterns include centrality, marginality, accessibility, density, texture, complementarity, and hierarchies. In examining patterns, the student should look at both distribution and intensity of occurrence. Patterns are seldom stable and may be in a state of flux while a process such as industrialization is taking place.

Interrelationships among phenomena on the earth's surface must be a central concern of geographic studies. Students should already be aware of many relationships such as those between climate and vegetation or between per-capita income and consumption of goods. The search for interrelationships should lead students to an examination of concepts such as systems, interaction, correlation, circulation, networks, and functions.



THE SOURCES OF GEOGRAPHIC INFORMATION

Geography students should be obtaining their data about the contemporary world from a wide variety of sources. The use of primary or relatively unprocessed data provides students with the maximum opportunities to be engaged in the processes of discovery.

In the strictest sense, primary data should be gathered at first hand by a variety of field techniques including sketching, photographing, interviewing, and counting. Students in the Senior Division should be provided with some opportunities for direct observation and measurement. However, it is impractical and too restrictive to have them do more than a modest amount of primary data collection. Many excellent methods have been devised to bring the world to the classroom. In many cases these materials are only a

short step away from being primary data. Such things as topographic maps, air photographs, or tables of statistics provide relatively unprocessed information to which students can apply their skills in processing information. Tertiary sources usually represent the author's perception, interpretation, or subjective opinion of the topic under discussion; the authors of such material seldom identify their sources. In using these, students should become increasingly sensitive to the difference between fact and opinion. It should be noted that tertiary sources frequently provide a variety of insights into the attitudes, feelings, and values inherent in current issues and thus contribute to the students' understanding. A selection of such learning materials can be used as the base of information for a unit of study or as supplements to textbooks.

PROCESSING GEOGRAPHIC INFORMATION

Senior students should be refining skills they already have and developing, testing, and evaluating new skills for processing information. Some skills will be learned primarily in other subjects and be reinforced in the geography classroom. Others, especially that collection of skills subsumed by the term "graphicacy" have their major development in geography.

Students should process data and learn to simplify them in useful ways. They should be involved in reading topographic maps; interpreting aerial photographs; charting, graphing, and analysing statistics; transforming data to visual forms, especially in the form of maps; and correlating information from various media. These are the ways by which data can be synthesized to formulate conclusions. The processing of information will provide opportunities for students to develop complex intellectual skills in a geographic context. Students will examine or develop theories, models, and regions – the generalizations of geography. The following paragraphs expand on the variety of skills required for processing information.

Description and explanation. In its simplest terms, the process of geographic investigation and study occurs along a continuum from *description* to *explanation*. (In recent years there has been considerable expansion of the continuum in the direction of *projection* or *prediction*.) Description involves the development of specific vocabulary; the observation and recording of data; the use of visual materials such as maps, graphs, and photographs, and the ability to interpret material accurately.

Description will require the Senior student to develop intellectual skills such as the following:

- the ability to gather information through such means as recall, observation, recording, and interpreting written, graphic, and mapped data;
- the ability to organize information by such means as classifying, plotting, identifying component parts, and analysing to find logical groupings or associations;
- the ability to rearrange information by such means as grouping, correlating, and reorganizing patterns.

In the Intermediate years students will have acquired a basic geographic vocabulary and some capability for describing phenomena that occur on the surface of the earth. In the Senior Division, with a capability to consider more information, students should be able to describe what exists with added precision. Their descriptions should include some combination of a larger number of variables, more reliance on quantitative material, better methods of recording descriptive data, and greater emphasis on interpretation from a variety of sources than were involved in descriptions at the Intermediate level.

As an example, many Intermediate students will have acquired a checklist of items to be considered in describing an industrial area – raw materials, power, transportation facilities, labour force, and market. Senior students should be able to examine each factor in greater depth. Energy resources may be examined in terms of comparative costs at different locations or the costs of alternative sources. Additional energy requirements may be met only by some compromise with environmental quality, for example, additional air pollution from coal-fired generating stations or thermal pollution at nuclear-powered stations. Senior students may also consider additional factors in industrial location such as industrial inertia or the availability of capital.

More sophisticated description inevitably represents a shift along the continuum in the direction of explanation. The tasks of explanation involve the consideration of particular cases, the assessing of evidence, and the drawing of conclusions. Generalizations can be made at a number of levels. Advanced Senior students will be examining highly generalized models and theories and may attempt their own models based on their research. In all cases, Senior students are increasingly involved in the tasks of explanation and the development of intellectual skills such as the following:

- the ability to recognize cause-effect conditions;
- the ability to apply principles and concepts from the physical and social sciences;
- the ability to perceive relationships and interrelationships among two or more variables;
- the judgement to assign relative value to two more variables;
- the ability to synthesize a number of variables into a coherent whole;
- the ability to reach generalizations that accurately describe existing conditions and relationships;
- the ability to evaluate the validity of generalizations by applying relevant criteria.

Both description and explanation require the skills to present information clearly in written or graphic forms such as prose, charts, graphs, tables, maps, diagrams, and models. In recent years, there has been an increasing emphasis on precision in description and measurement.

Reasoning processes. The tasks of explanation involve complex intellectual skills and problem solving processes. The straightforward route from description to explanation is an *inductive process*. The student makes a series of observations which become the substantial body of evidence on which subsequent generalizations may be formulated.

Deductive methods start with possible explanation of how particular features came to have distinct locational characteristics. This problem-solving model begins with a hypothesis. Relevant information can then be gathered to test the hypothesis. In fact, the use of the deductive method may sharpen data collection and improve or facilitate the explanatory process. Concentration on a possible explanation may help to screen out the distracting variables which, while part of reality, obscure the recognition of basic and useful patterns.

The study of a region, for example, might proceed in largely inductive ways. Students would gather information about the area, organize the information, reach generalizations about the essential character of the area, and attempt by reference to the physical and human forces to explain the current pattern of human occupancy and resource use. In many cases the inductive method is the simplest and quickest to use. This is especially the case where the question under investigation is straightforward and the answers are likely to be specific to one example rather than general to a number of cases. For example, students may be asked to describe and account for the distribution of the Francophone population in Ontario. The answer will be case-specific and is unlikely to yield any generalization applicable to other Francophone minority populations. In such a case, it is most expedient to decide on how the data can be obtained, transfer them to a map, describe the distribution, and then proceed to explanation.

Conversely, the pattern of distribution of residential, trade and industrial areas in urban concentrations may be obscured by particular cases. It may be more profitable to proceed deductively by considering how towns get started and then develop a hypothesis about what pattern of distribution this would tend to produce. The subsequent collection of relevant information could confirm or deny the hypothesis with less obstruction from interesting but case-specific factors such as topographical site or meteorological conditions. When a reasonable generalization or model has been confirmed, such specific factors can then be seen in perspective with respect to particular cases.

A somewhat different case in which the deductive process could be useful is a study of Canadian resources. Students might begin with the hypothesis that Canadian resources should be used exclusively as the basis for the development of a domestic manufacturing industry. This theory could be tested by an examination of the nature of Canadian resources, domestic and foreign markets, ownership, capital investment, environmental effects, needs for imports, the advantages of specialization, and other related factors. Following this gathering and weighing of information, it is likely that the original hypothesis will be modified significantly or replaced by a more comprehensive and informed explanation of existing resource

policies. Based on their increased understanding, students could proceed to propose policies intended to achieve the best use of Canadian resources in the future.

It is important that students at the Senior level have experience with the whole range of processes associated with description and explanation and with both modes of reasoning. All of these processes will be assisted by the development of operational, graphic, and group skills as outlined in the following sections.

Operational skills. There are many skills that form an integral part of the geography program. They are given a variety of names but are here grouped as the operational skills necessary to obtain and process information in geographic studies. Naturally, reading ranks high among these basic operational skills. Most of the facts and data used at the Senior level cannot be gathered first hand. The students must acquire their information from library sources. In organizing a course of study it is important to consider the reading abilities of students and their skill in extracting and abstracting information from printed material.

It will also be necessary for students to keep orderly records of information. They must develop the kinds of operational habits that are important to the use of information at a later date. Sources of data must be identified; maps and graphs must be carefully titled and labelled; graphs should have significant numbers recorded on them or on closely attached supporting tables.

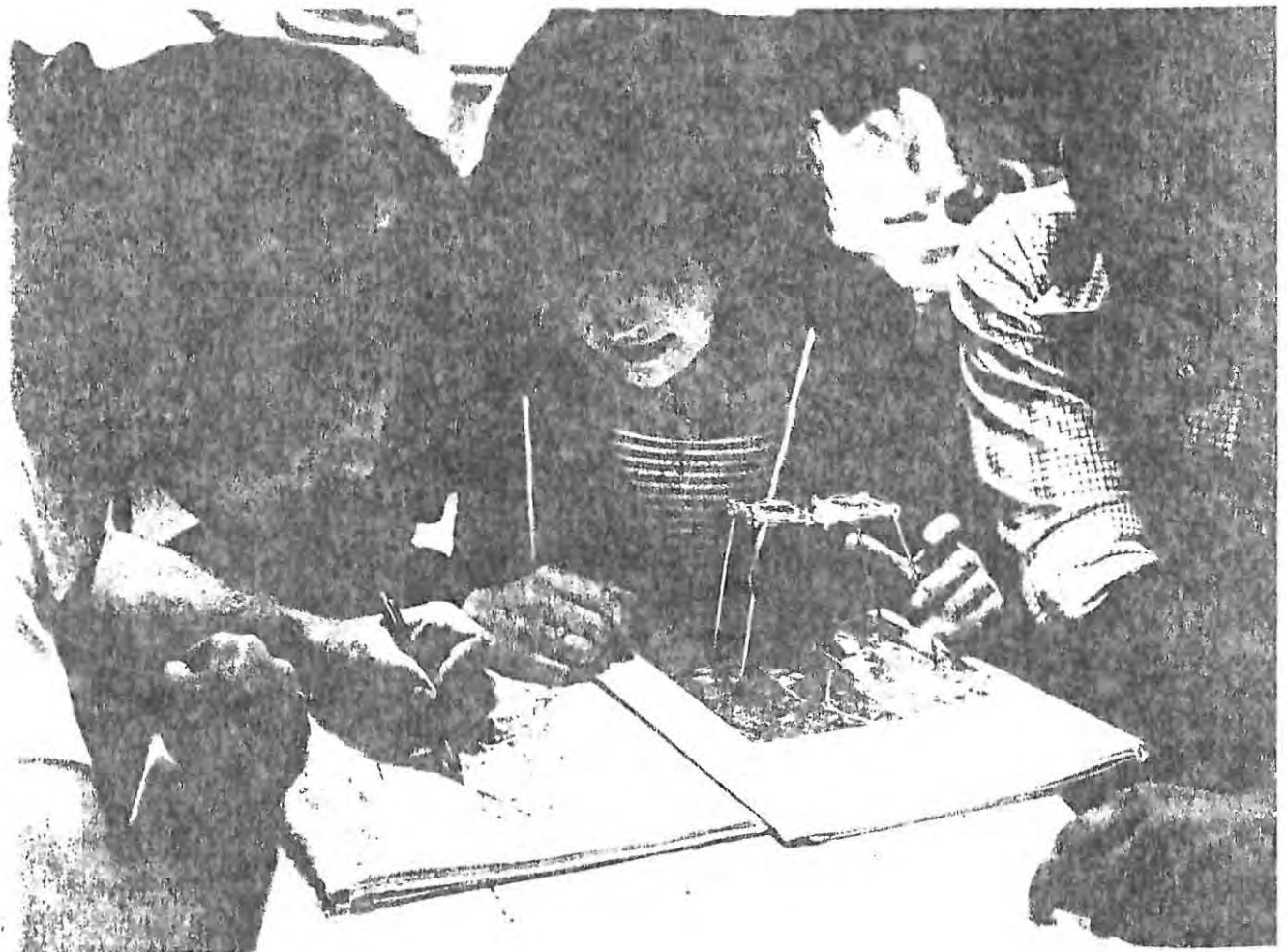
Statistics are an important aspect of geographic studies. The term is used in two ways – as a synonym for numerical data and in a wider sense subsuming both the data and the methods for analysing the numbers. Students should have opportunities to use statistics in both meanings of the word. At the very least, geography students should have a good grasp of terms such as "mean", "median", "correlation", "density", "percentage", and "per capita". This requires the capability to do simple arithmetical calculations. In addition, they should be able to determine the nature and meaning of the information contained in a table of numbers. Some students may also be able to apply or develop formulas that demonstrate relationships more precisely.

The complexity of the statistical methods used will vary considerably from class to class. A number of statistical methods are useful for summarizing information, measuring geographic distributions, estimating, and identifying spatial patterns and relationships. The use and application of these methods will depend to a large extent on the nature of the course content and the interests and abilities of the students.

Graphicacy. The content of geography – data about area, pattern, and interrelationship on the earth's surface – requires the use of visual methods as a significant part of the discovery processes. Thus, the most distinctive contribution that geography makes to the general education of students in secondary school is in the area of graphicacy. This term subsumes all the ways by which data can be obtained, recorded, analysed, and generalized in an essentially visual as opposed to verbal or numerical way. The photograph condenses a thousand words; the graph makes numerical information more easily understood; and the map in all its many uses is the most important tool of a geography student.

The skills of graphicacy are closely linked to the intellectual skills. They have a part to play at every level from knowledge acquisition to analysis, synthesis, and generalization. A distribution plotted on a map is a mere areal description. However, the recognition of the kind of pattern in the distribution immediately involves an analytical process. If the pattern subsequently raises questions about the relationship of the distribution with some other variable, the student is on the road to a conclusion and a subsequent generalization.

Graphic methods are an indispensable part of the geographic process. Students should have many opportunities to use the map, graph, and photograph to acquire information. To do this they will need a variety of "reading" and "interpretive" skills. Most important, they must be encouraged to use the graph and the map to portray information. For this they will need to develop both the simple skills of cartography – legibility, clarity, and precision – and a number of more sophisticated skills.



A well-designed exercise in graphicacy should involve students in decisions as to what information the illustration should provide, a comparison of various methods of depicting information so that both accuracy and clarity are obtained, and an evaluation of the usefulness of the illustration for synthesizing information and for showing correlations among variables.

Group skills. Geography students should be taught, and should practise, the skills of group work. Students will employ a variety of methods of data collection and of presenting their findings. These processes lend themselves to the sharing of the workload and the consequent use of shared decision-making techniques. If groups are formed to provide a team with varied strengths, each member has an opportunity to learn from the others.

Perhaps most important, as students become more skilled in co-operative problem-solving they learn how to reach better conclusions than they could as individuals.

Group-work skills should be an integral part of the course. Laboratory exercises and research topics can be designed to enable students to work in groups and at the same time to develop some judgement about which tasks are best done co-operatively and which individually.

Students at the Senior level should be refining their skills of presenting and receiving information, clarifying problems, setting goals, and focusing on the task. Group work is the method by which students can practise these skills while achieving the other goals of a geography pro-

ATTITUDES AND VALUES

Values education should be an important dimension of every course developed from this guideline. Frequently, the students themselves will identify values issues for analysis and discussion. On other occasions, it will be the teacher's task to point out that a situation cannot be understood simply in terms of its physical or economic components.

In this connection there is considerable uneasiness amongst educators and parents as to the legitimate place of values education in the school program. Some believe that the school ought to inculcate the generally accepted values of our society. This presupposes an ability to identify "generally accepted values". Others claim that values are intensely personal, and thus any attempt at examination or evaluation is a form of indoctrination. From this point of view, the teacher ought to accept any value or attitude postulated by any student. A third group of people contends that values issues are not a legitimate concern of the school; the school ought to confine itself to matters that lie in the cognitive domain. This latter group assumes that it is possible, for instance, to acquire an understanding of the facts and theories of migration without reference to the beliefs and values of the migrating peoples.

The policy of the Ministry of Education, as stated in *The Formative Years*, is that students be given the opportunity to develop a personal value system

within a context that reflects the priorities of the concerned society and at the same time recognizes the integrity of the individual. The following are offered as an aid in implementing this policy in Senior geography courses.

It is generally accepted that teachers should model the values underlying the rules about how a person conducts himself – namely, respect for the individual, concern for others, and social responsibility.

It is also assumed that teachers will inculcate the values associated with the study of their discipline, for example, respect for rational argument and the rules of evidence. In the geography classroom critical thinking is to be preferred to rote memorization. Gathering of evidence to support an idea is preferable to reliance on prejudice or someone else's opinion.

However, in the area of values, which imply a particular way of life, religion, political system, and so on, the teacher's task is not to inculcate a particular value, but rather to help students make their own choices. It is suggested that teachers take a three-pronged approach in this area:

Members of the class, and here the teacher is considered to be a member, should aim to:

– become more aware of their own and others' values;

- develop their own value system;
- become increasingly able to identify and analyse the underlying value positions that are implicit in public issues.

Students should become more aware of their own values and those of others. These could be illustrated at a simple level by inviting them to suggest ideas for the reorganization of their own school campus. The fact that the suggestions will differ from one another will be partially explained by the fact that the students hold a variety of values. They could then be asked to articulate the values that lead one to suggest a sports complex, another a garden area, and a third a shopping plaza with a pinball arcade.

In their studies of the world, students in Senior Geography courses will be coming into contact with value systems very different from their own. Some human-land interrelationships such as those found among the Masai of East Africa make little sense if judged according to the value system of an average teenager raised in Ontario. If students are to develop a knowledge and understanding of people and places, and of the relationships between the two, they must be able to recognize and understand the values of particular cultures, and to accept the fact that people from different cultural backgrounds and environments will have a different set of "shoulds" and "oughts" from their own.

Each student comes to the class with a unique, complex value system, which he or she has been developing since very early childhood. The student should have the opportunity to continue this development. In an open and supportive classroom environment, students will feel free to

examine their own values and, if necessary, to revise them so that they form part of a coherent system that adequately reflects their present maturity and experience.

If one were to ask a twelve-year-old why it is wrong to go into someone else's house and take that person's food, he or she could probably explain that we hold values such as respect for the rights of others. Faced with the problem of trying to understand the Arab-Israeli conflict in the Middle East, the Senior Division geography student will have to test this value in a much more complex situation in order to see what other values are involved, such as a people's right to exist as a nation and a people's right to defend their homeland.

Students should be increasingly able to identify and analyse public values issues. If, for example, a corporation plans to close down one of its large plants, what ought to be done about the unemployment crisis that will result? Here the students are likely to find conflicts, not only between the values of one group of people and those of another, but also between two or more of their own deeply held values. Senior students are mature enough to realize that the valuing process involves more than simply picking the more appealing of two possible values, and the teacher needs to have a model of the process so that he or she can guide them.

The following is *one* such model that may be adapted to suit the students and the particular situation. It is not suggested that the class go through such a process every time a value issue arises. Frequently, it will be desirable to highlight only one or two of the steps.

Steps in the Valuing Process

1. Identifying, clarifying, and defining a value
2. Recognizing the possibility of change
3. Identifying alternative values and their sources
 4. Gathering and evaluating data
 5. Analysing alternatives in light of likely consequences
6. Choosing freely among ordered alternatives

(decision-making in which the original value is reinforced, modified, or discarded)

7. Internalizing the value into behaviour (The chosen value is seen as clear, consistent, and defensible, and is used as a factor in future decision-making.)

8. Re-evaluating the choice, as necessary, in the light of new experiences

As they become more sensitive to their own attitudes and values and those of Canadian society, the students will gain a deeper appreciation of the ways in which other societies have developed their area of the planet. They will also be in a position to make better decisions about their own use of the environment and about what ought to be Canada's attitude to world issues.

The evaluation of student progress in the three areas outlined here is not easy and should be approached with caution.

In the case of values that relate to the way a class conducts itself, teachers do not hesitate to make judgements. However, the judgements and the approval or disapproval expressed by the teacher must apply to student *actions* in the classroom or school. Whether the students have internalized the underlying values probably cannot be known until they have left school and are free to make their own decisions about how to behave.

The same applies to the values associated with the learning of geography. Teachers will stress the need for good study habits and will evaluate the extent to which each student's work exhibits the characteristics of sound geographical procedures. The hope is that the students will internalize the underlying values and use them as guides in dealing with similar situations in school or out. The geography teacher will not often have the opportunity to assess whether this happens.

Thus, in both cases, it is the students' overt behaviour in the present that is being evaluated, not their underlying beliefs, attitudes, and values.

In the area of values that imply belief in a particular way of life, religion, political system, and so on, a judgemental attitude would hinder the achievement of the stated aims. If students and teacher are to understand their own and others' values, an accepting and non-judgemental attitude towards one another's values is essential. The teenagers and young adults in Senior Division classes will revise and reorganize their value systems in response to their wider knowledge and experience rather than as a result of pressure from a teacher or other adult. The teacher, then, must respect the right of the individual to select his or her own values, while at the same time assessing progress in such areas as the ability to state a value and to give the reasons behind it.

Thus, the aim of evaluation in this area is not to produce a mark or grade which would tell students where they stand in relation to the rest of the class or in relation to some objective standard. It is to provide feedback that will enable them to make their own judgements about what values they wish to hold as responsible members of society.

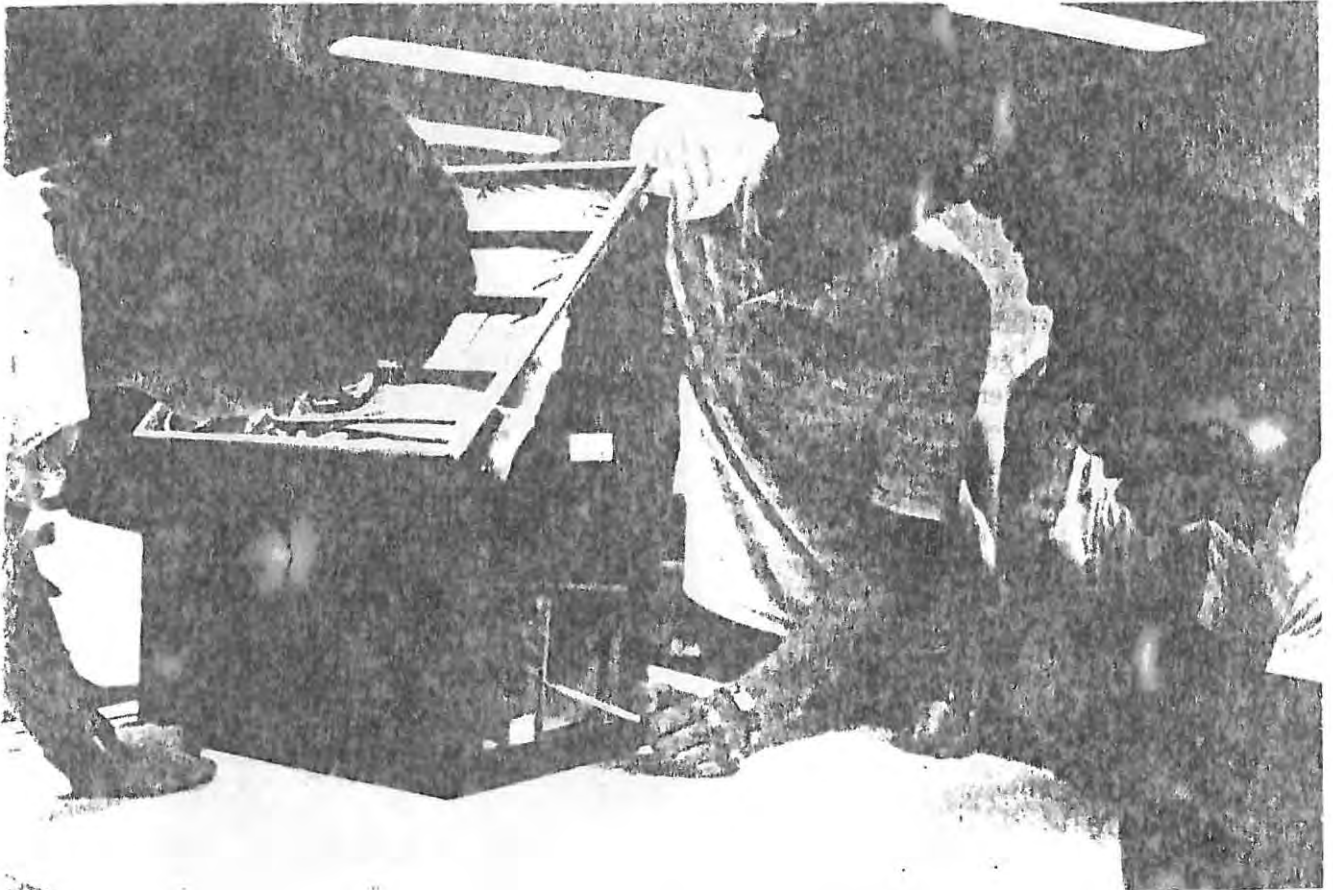


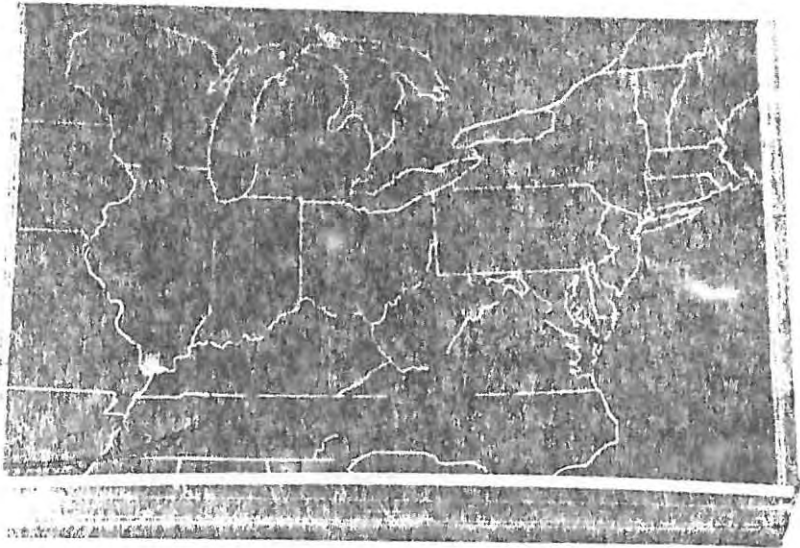
DEVELOPING A COURSE OF STUDY

The process of planning a course of study begins with an examination of the nature of the students for whom the course will be designed, their concerns, needs, and interests. The average Senior Division student is different from the adolescent of the Intermediate Division, and the Grade 13 student is different again. Although by no means mature adults, many Senior Division students have passed through the period of physical and psychological change that accompanies adolescence and now see themselves, most of the time, as young men and women. One consequence of this is that their own goals and interests are likely to be more powerful motivators than their desire to please adults. Frequently, they will take more responsibility for their own work. Many of them

are more able to work independently or as members of a small group than they were a few years earlier. Their interests tend to be more stable than those of the younger adolescent, and many will have oriented their school programs to employment or to post-secondary education. All of these attributes of increasing maturity, as well as differences in intellectual ability and, possibly, differences in experience in the discipline of geography, need to be taken into account in the organization of courses of study.

The next step is to select topics or themes for individual units and to weave them into a coherent whole so that the aims and major understandings of the course can be achieved.





PLANNING A UNIT

The Intermediate Division geography guideline devotes considerable attention to this topic, and many of the suggestions made there are applicable to Senior Division courses. A unit of study is considered as the basic building block of a course of study and should contain the following essential features:

- a statement of specific objectives;
- the selection and organization of content;
- suggested teaching strategies and learning experiences;
- a description of available teaching and learning resources;
- an indication of evaluation techniques.

The objectives laid out for individual units should be specific enough to provide focus and direction, but flexible enough to allow additions and modifications by the students. As young adults, these students should be getting practice in planning their own work, and though course objectives may be beyond their scope, they might well help to set the objectives for a four- or five-week unit.

The selection of content in terms of the knowledge and skills to be acquired should also allow for student input. The courses in this guideline frequently state the course content in terms of concepts to be taught. However, the actual topics or areas of the world that will be the vehicles used to teach these concepts will be chosen by local teachers.

A course outline should also contain suggestions for teaching strategies and learning experiences. Although these older students are more able to sit and listen than are younger students, this does not necessarily mean that they learn better by listening. To determine whether a course outline

will encourage student involvement, it is a good idea to restate teaching strategies in terms of what the students will be doing. Learning experiences should include individual and small-group work as well as class work. They should also include instruction and practice in organizing such things as a research project or an oral presentation.

A description of available teaching and learning resources should be an important component of all courses developed from this guideline. Such a description, which will be used by both students and teachers, should contain a variety of resources as outlined in "Sources of Geographic Information". Skills in the use of a variety of resources are transferable to other subjects and other situations and should be developed in every geography course at the Senior level.

Finally, the course outline will contain, for each unit, suggestions for evaluation techniques that are clearly related to both objectives and learning experiences.

The planning process should be a co-operative effort among teachers in a geography department and, where possible, among teachers from several schools. Co-operation among teachers in the same school will allow for the development of a coherent program across four or five years. Growth in skills and conceptual understanding can be planned so that undue repetition is avoided. Co-operation among teachers from several schools need not have as its aim a common course of study. Its greatest value lies in the variety of teaching strategies, learning experiences, and evaluation techniques that can be assembled. Ideas and sources for resource material can be shared so that the individual teacher will be in a better position to plan for his or her own classes.

LEVELS OF DIFFICULTY

An important consideration in planning a course of study is the level of difficulty at which the students can work: students should experience a feeling of challenge when they are engaged in a task and a sense of satisfaction when they have completed it. A course designed for students working at the advanced or enriched level will be different from one designed for students working at the general or basic level even if the two courses are based on the same guideline. The following general statements are offered as aids in planning.

Units of study will be organized around the development of major concepts. However, the concepts will reflect the experience of the students and the level of abstraction at which they are able to work. One course could use the concept of energy to organize some practical information about coal, oil, and water-power resources. Another could deal with the concept of energy in forms such as chemical, mechanical, radiant, electrical, nuclear, and thermal energy.

Areas or topics chosen for study will also capitalize on the stated or inferred interests of the group of students involved. Thus, a group whose program includes technical subjects is likely to be interested in a study of diffusion as it applies to technology, whereas a group whose program centres on languages might wish to trace the geographic spread of languages.

Considerable attention should be devoted to attitudes and values. Here the difference will appear not in the valuing process itself, but in the intellectual skills and knowledge required to examine a given issue. An examination of the effect of a Communist system of government on the economic development of China presupposes a knowledge of political as well as of economic systems, for example. On the other hand, an examination of the standard of living could be based entirely on the students' own ideas about what constitutes a high standard of living. Ensuing study would then demonstrate that people in other lands and other cultures use different yardsticks to measure standards of living.

All levels of thinking skills – the acquisition of knowledge, comprehension, application, analysis, synthesis, and evaluation – will be practised by all students. The differences will appear in the degree of complexity and the level of abstraction, or in the amount of guidance given by the teacher. For example, at the conclusion of a unit on an area of the Third World, the teacher might ask "How useful is the aid given by Canada?" The students could then be left alone to struggle with the data and to arrive at a conclusion; or they could be guided through the steps of understanding and analysing the information, developing the overall picture, and making an evaluation. An evaluation question at the Senior level can be as simple as "Which of these four methods of mapping population density would be most effective?", or as complex as "To what extent does the pattern of agriculture around this city conform to Von Thunen's model?"

The same point applies to teacher intervention: the questions posed by a teacher will differ in the number of thought processes they demand. When faced with a topographic map showing long-lot settlement in Quebec, the instruction might be, "Account for the settlement pattern of this area." On the other hand, the idea could be developed by a series of questions such as: "Where are the houses located? Are they suburban houses or farms? What shape are the farms? How does this compare with farms in our area? What could account for the difference?"

In a similar vein, if a unit included a research study project,* the teacher might wish to check with the students at the completion of each step. In an advanced-level course, assignments would consist of larger blocks of work with teacher intervention only at critical points.

*See "Research Study Skills", a support document for the geography guideline for the Intermediate Division.

The speed at which work is accomplished varies from one group of students to another, but this variation does not necessarily mean that an advanced-level course will contain more units or cover more areas of the world. It can mean more depth at the advanced level. Students in the advanced-level course can examine an idea in more detail or perhaps with some attention to broader concepts, while students in the general-level course can concentrate on more practical applications.

The need to start with what is familiar to students is a truism of good teaching and has special implications for Senior Division geography. The three courses outlined for the Secondary School Graduation Diploma are global in scope, but teachers are encouraged to make frequent reference to the local area and to Ontario. The teacher of a general-level course, especially, will often find it necessary to return to familiar experiences and to familiar places in order to develop a skill or concept before applying it to some remote area of the world.

Another truism, and not only of teaching, is that people are interested in people. The geography teacher who is looking for a motivational idea knows that a good human-interest angle is likely to catch the attention of students. In a general-level course, it is often advisable to use the human aspect of a topic as a lead-in to the physical aspects or to such abstract aspects as economic factors.

The selection and amount of written material included in a course will reflect the reading abilities of the students for whom the course is designed. Written material that deals with topics in a mature way but in simple language is not easy to find. Many teachers keep a file of passages from newspapers, magazines, and books that they have found useful in their general-level courses.*

* There are readability formulas that can be used to help assess the reading level of a passage. While these tests show the level of word

difficulty, the teacher will have to judge the complexity of the sentence structure and of the concepts included.

While it is valuable to use varied audio-visual resources to augment textbooks in all courses, such resources are of particular benefit to the students with a low level of reading skills.

In presenting their work to the teacher, students taking an advanced-level course may be expected to include a well-written, suitably illustrated essay. On the other hand, students in a general-level course are likely to tackle more complex topics if they are allowed to present their work in a variety of ways. They should be encouraged to use such things as maps, diagrams, models, and dramatic scenes, and to supplement these with oral explanations.

The aims and rationales of courses in this guideline have been designed to allow for courses at several levels of difficulty. It is the responsibility of local planners to adapt them in ways that spark the interest and extend the knowledge and skills of individual groups of students.



EVALUATION

"The most lasting result of effective evaluation in school is an adult who can base decisions on personal standards."* The achievement of this long-term aim is only one outcome of evaluation, but it is worth while keeping in mind, especially when the pressure to produce marks for report cards threatens to reduce the evaluation process to a round of testing and grading.

The evaluative process in the classroom has several distinct stages, involving:

- assessment, or the gathering of information about student achievement or the program;
- judgement of the situation in the light of the data (Is it satisfactory or not, desirable or not?);
- diagnosis of difficulties (What caused the unsatisfactory situation?);
- further planning on the basis of the above.

Although much of the same data will be used, the evaluation of student achievement and of the geography program itself should be undertaken separately.

EVALUATION OF STUDENT ACHIEVEMENT

The most obvious purpose of this form of evaluation is to produce information, usually in the form of marks, for the students, their parents, and the school records. A more dynamic purpose is to provide information to both students and teacher so that they may assess progress, diagnose difficulties, and plan appropriate action.

If it is to produce accurate, useful information, the *evaluation* of student achievement must be clearly related to course *objectives* and *learning experiences*, and thus must be included in the design and planning of a course. Just as objectives may be modified in the course of a lesson and planned learning experiences may change as a result of the introduction of unplanned experiences by students, so too evaluation procedures cannot be precisely detailed before the lesson or unit is taught. Nevertheless, these three aspects of the learning process are such an integral part of the curriculum that to omit one from the planning stage is to run the risk of a lack of congruency between what is taught and what is evaluated; this will result in inaccurate information and frustration on the part of students and teachers.

What is to be evaluated is usually the first consideration in designing an evaluation instrument; here that the close relationship between evaluation and objectives is evident. In any course developed from this guideline, all levels of thinking skills will be practised and should therefore be evaluated. However, if a question asks for analysis or synthesis, and the student does not know the basic information, it will be impossible to determine whether he or she knows how to analyse or synthesize. Hence, where the item is designed to test student skill in handling data, it is often desirable to supply the data and then ask the student to process them.

It is important that students be aware of course objectives, and even be involved in setting them. It is equally important that students be aware of how they or the teacher might measure their success in achieving these objectives. It is very disheartening for a student who has been committing to memory the information obtained from a map to be faced, on a test, with a completely unfamiliar map. It is even more disheartening for a student who has been assiduously polishing his/her map and air-photo interpretation skills to be faced with a test question that reads, "Write an essay on..."

*From Ontario Ministry of Education, *Evaluation of Student Achievement: A Resource Guide for Teachers* (Toronto: Ministry of Education, 1976), p. 3.

The decision on *how* to evaluate will reflect the close relationship between learning experiences and evaluation procedures. If there is considerable emphasis in the classroom on locating and selecting information, a research project is a better evaluation tool than a formal examination for that part of the course. Similarly, where group work is encouraged in the classroom, an assessment of student learning and productivity under these conditions should be included as part of the total valuation of progress.

Valuation that produces information for student records is normally confined to objectives in the area of knowledge and skill development. It is more difficult and often inappropriate to assign a mark to indicate progress towards objectives in the affective domain. Evaluation in this area needs to be handled differently, and some suggestions are given in the section "Attitudes and Values".

When the evaluation is to be used as feedback to students and teacher, it will include the many formal exchanges that take place in the classroom, in addition to the formal items from which marks and grades are generated. Thus, the teacher's response of "Good idea!" to some comment, the barely concealed yawns in the face of a poor presentation, or the observation of a group member "We're not making much progress with this assignment," are all forms of evaluation. Unfortunately, the very word "evaluation" has a negative connotation in the minds of many students. When confronted with criticism, they are able to forget any positive comments and to receive even the most carefully framed criticism

with a marked lack of gratitude. No one likes to receive negative feedback, but students are likely to be more receptive to it if they see it as only one part of an ongoing process, and especially if they can see tangible benefits resulting. Thus, students are more likely to appreciate an evaluation of the rough draft of an assignment, for example, if they know that they will have the opportunity to revise it before submitting it for marking.

An important feature of feedback is the opportunity it provides to clarify objectives. Often it is through a digression by the students that the teacher learns that the purpose of the activity was not clear.

Similarly, there should be adequate discussion of the criteria for evaluation. Otherwise, the students will be constantly trying to guess what the teacher has in mind. If they are to develop their own personal standards, students themselves should be able to state what would demonstrate progress towards the objectives.

Low productivity or poor work by an individual or group can have many causes. Lack of homework, inadequate supervision, a new teaching method, disrupted relationships in the group, a home problem, or an impending football game are only a few of the possible causes. A sensitive use of evaluation techniques will encourage student involvement in the diagnosis of strengths and weaknesses, and in the planning of remedial action so that students can become more responsible for their own learning.



COURSE AND PROGRAM EVALUATION

Evaluation of the program is required from time to time in order to assess the degree to which the stated objectives are being reached. Suggestions for the evaluation of a unit are contained in the geography guideline for the Intermediate Division, and the same questions might be asked in Senior courses:

- Were the objectives achievable through the content?
- Were the objectives sufficiently specific to be clear, and yet open enough to encourage growth?
- Was there a central focus to provide a sense of direction?
- Was there a spirit of inquiry?
- Was there an opportunity to broaden interest and pursue new ideas?
- Was it possible for students of differing abilities and interests to develop in their own particular ways?

While it is clearly the responsibility of geography teachers, individually and as a group, to make this evaluation and to plan further action, information and opinions should be invited from a variety of sources. The school administrators can supply useful data about how the geography program contributes to the aims of the school, whether the needs of a wide spectrum of the student population are being met, and how standards of achievement in geography courses compare with those in other departments. Where consultative help is available, the consultant may be able to offer ideas and information derived from his or her experiences with several schools.

However, it is from the students themselves that teachers will obtain the richest supply of data. Information derived from the evaluation of student achievement should be examined to see whether it also sheds light on the value of the course design and teaching methods. Student expressions of opinion and feeling can be sought on such questions as: Which topics are most interesting? Which exercise helps you learn best? Which concepts/skills are most difficult? A survey of such information can reveal unsuspected deficiencies in student background and indicate modifications in course structure and teaching methodology. Some teachers may wish to design a questionnaire by which all students in a course provide evaluation that can be objectively processed. Observation, by one or more teachers, of students at work reveals a great deal about the students' degree of involvement, attitudes of inquiry, and sense of direction. The data thus gathered can be used to answer such questions:

- Do objectives, learning experiences, and evaluation procedures clearly relate to one another?
- Is the course meeting the needs, interests, and abilities of the students?
- Is there discernible growth over a period of time in knowledge and skills?
- Do the students have ample opportunity and encouragement to grow in self-reliance and self-esteem?

From time to time, course objectives should be checked against this guideline to ensure that the locally developed program provides for the achievement of the aims established for Senior geography.

Finally, after a period of testing, this guideline itself should be systematically evaluated to provide information to the Ministry of Education about any areas where modification or additional information may be needed.

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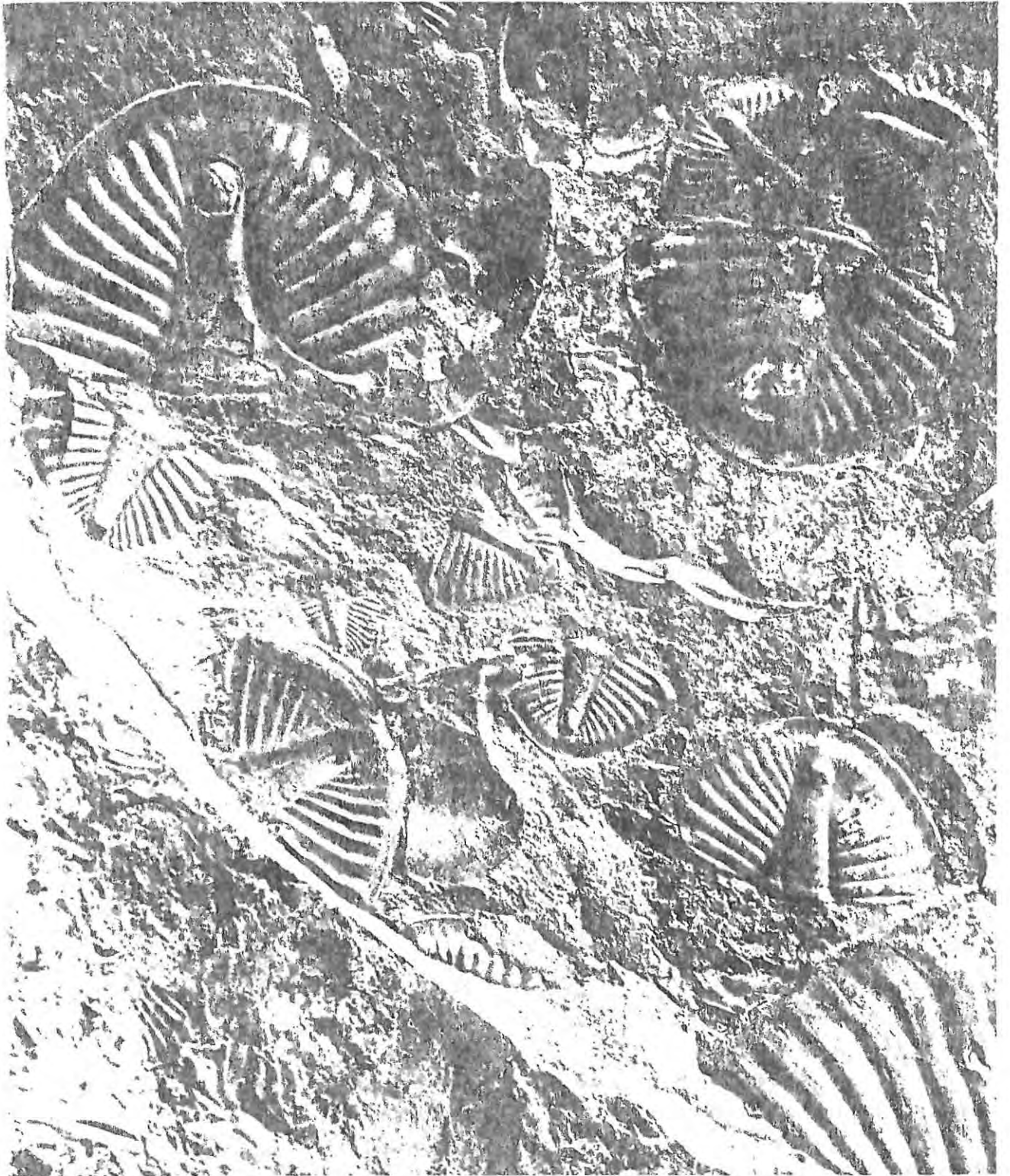
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THE ASSOCIATED EXAMINING BOARD

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GEOGRAPHY - 626

Syllabus

Notes for Guidance

Specimen Papers

Suggested Booklist

For first examination June 1982

THE ASSOCIATED EXAMINING BOARD
FOR THE GENERAL CERTIFICATE OF EDUCATION
GEOGRAPHY ADVANCED LEVEL SYLLABUS 626

The aims and objectives of the syllabus are set out at the beginning of the syllabus. The content of the syllabus has been revised to provide students with a balanced appreciation of Geography in the light of current developments.

Emphasis is placed upon man's relationships with his environment and his central position in the subject. Therefore the syllabus deliberately avoids a division of content into human and physical geography in order to encourage an integrated teaching approach.

The syllabus content is presented in the form of topics related to man and his behaviour in ecological and spatial contexts. These topics have been selected to encourage the student to acquire a fundamental understanding of the processes involved within the specific areas of study. Detailed studies should be carefully chosen to illustrate these topics and their inter-relationships. Some topics will necessarily have to be studied on a world-wide scale, while others may be more suitably treated locally or with reference to one continent, country or region. A variety of detailed studies per topic should be used. These should not be taken entirely from one continent, or from areas at similar stages of development. Certain of the detailed studies should preferably be treated in greater depth or be chosen to relate to more than one study topic. In this way an understanding of the whole environment and the man-land relationships within it might be better achieved.

The syllabus should be seen as providing a framework which can allow the use of existing resources. The core material given in the subject content must be regarded as essential; detailed studies may be chosen at the discretion of the teachers or students; the possible examples given are intended for guidance only.

Aims

The aims of the syllabus are to enable the candidate to:

- (a) understand geographical concepts;
- (b) appreciate the dynamic nature of geography, both in time and space;
- (c) acquire techniques and develop skills in the analysis and interpretation of varied types of geographical source materials and to make inferences from available evidence;
- (d) apply geographical methodology towards an appreciation of present day problems on varying scales.

Objectives

- The objectives of the examination are to test the candidate's
- (a) knowledge and understanding of basic geographical concepts and principles;
 - (b) ability to analyse and interpret data such as statistical information, maps, photographs and detailed studies in the application of general geographical principles to particular situations;
 - (c) the ability to apply geographical skills and techniques and in particular to use such skills in carrying out field investigations and in analysing the results of such investigations.

<u>Examination Structure</u>	<u>Duration</u>	<u>% of Total Marks</u>
Paper 1	2 hours	20%
Paper 2	2 hours	20%
Paper 3	3 hours	40%
Paper 4	30 minute oral on fieldwork investigation	20%

Candidates must take all papers.

The structure of Papers 2 and 3 allows the candidate some degree of specialisation within certain syllabus topics.

Paper 1

This paper will aim to test the candidate's ability to apply skills and techniques to a consideration of geographical problems and situations. The paper will consist of a variety of data response questions, which will involve the use of a wide range of source material.

A minimum of four questions will be set, of which the candidate will be required to answer two. At least one question will require a basic understanding of Ordnance Survey maps (1:25 000 and 1:50 000). Questions may also be included which are based on British land use maps and field investigations.

Paper 2

Paper 2 will aim to test the candidate's comprehension of basic geographic concepts as stated in the syllabus content. Fourteen short structured questions will be set, two on each of the seven topics A-G listed in the syllabus and candidates will be required to answer any eight questions. Spaces for the answers to the questions will be provided on the question paper.

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Paper 3

This paper will aim to test the candidate's ability to understand and to apply knowledge of the topics A-G to specific locations of the candidate's own choice. Reference to detailed selected studies on a variety of scales and locations will usually be required. No specific regions/areas/towns will be named; instead, the wording of the questions will allow the candidate to use his/her own choice of case study to examine the particular concept or topic which is being discussed. The examiners will be particularly looking for evidence of first hand investigation where relevant.

Candidates must answer four questions, ONE from each of the four Sections as shown below:

- SECTION 1 : Topic A : (Resources and Population) 3 questions

- SECTION 2 : Topic B : (Hydrosphere and Lithosphere)) 6 questions
 - Topic C : (Atmosphere)) (2 on each
 - Topic D : (Ecosystem)) topic)

- SECTION 3 : Topic E : (Agriculture, Industry,) 4 questions
 - Transport and Trade)) (2 on each
 - Topic F : (Settlement)) topic)

- SECTION 4 : Topic G : (Geographical perspectives) 3 questions
 - on current problems))

Paper 4

This part of the examination will be concerned with the assessment of submitted field investigations and will take the form of an oral examination of approximately 30 minutes, which will be conducted by an examiner appointed by the Board.

The candidate is allowed to use an approved atlas, approved mathematical tables and a simple hand calculator during all parts of the examination.

A list of approved atlases is available on request to the Board.

SYLLABUS

The syllabus is based on the relationships between man and his environment, their spatial consequences and the resulting regional patterns. In view of this approach, the rigid separation of Physical and Human Geography is not considered appropriate. Man is envisaged as one component of the ecological system closely related to, and interacting with, the other components. The syllabus recognises this by identifying topics relating to man and his ecological and spatial behaviour. A conceptual framework is identified, the relevant processes investigated and the environmental, human and spatial responses analysed and evaluated.

TOPICS

GUIDANCE NOTES

Possible Examples

1. Resources and Population

(i) The nature of resources. The study of stocks, resources and reserves; renewable and non-renewable resources; resource systems; energy flows and inter-relationships; modifications by man. The problems of resource use and management.

A classification of natural resources with a consideration of different scales and time periods and the differing degrees of manipulation by man could be illustrated by selecting examples of non-renewable resources (fossil fuels, minerals) and renewable resources, (forestry, fisheries, water). Selected ecosystems could be used to illustrate the principles of resource systems and the problems of resource use and management.

(ii) The nature and trends of population growth. The study of the major structural characteristics of population and the components of change (i.e. fertility, mortality, migration) on world, national and regional scales; growth and decline of population as seen through demographic models.

Particularly relevant to this part of the syllabus is the analysis and presentation of population census data; world and national population distribution maps; population pyramids which illustrate varying population structures such as those for Brazil, Sweden, Japan and USA.

(iii) The relationship of population to resources. The concepts of under-, over- and optimum population. World population growth and distribution and world resources.

Studies of population change and the effect of migrations in selected areas, e.g. E.E.C., U.S.S.R., U.S.A. could lead to an analysis of these trends and a consideration of resource availability and use. The concept of optimum population and population policies could then be studied in countries such as India or Australia and regions such as North and South Italy.

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B. Hydrosphere and Lithosphere

(i) The nature of the earth's surface structure and its implications for man. Influence of the more common rock types and structures on surface morphology; theory of plate tectonics and the study of the distribution of major features on the earth's surface (oceans, continents, mountain chains, ocean ridges, deep trenches, island arcs, rift valleys); earthquakes, volcanic activity and associated phenomena. The effects of the above upon man's activities.

An integrated approach is recommended, choosing examples from one area, such as the North Atlantic or North Pacific oceans and adjacent land masses.

(ii) The nature of hydrological processes and their implications for man. The concept of a hydrological cycle; run-off processes and discharge within the drainage basin; water balance and its variation with climate; the effects of accidental or intentional disturbance of the ratio between infiltration and run-off; the effect and influence of land use changes, such as, deforestation, urban development, water resource management and flood control.

A recommended approach to the study of this part of the syllabus would be through field investigations involving the measurement of infiltration rates and stream flow and the preparation of a stream hydrograph. This could be followed by the comparative analysis of published data of river basins, for example: the Rhône, the Trent, the Tennessee.

(iii) The effect of physical processes on the evolution of hill slopes, river channels and coasts and the implications for man of such processes. The nature and effect of physical processes on the evolution of hill slopes, river channels and coasts; the effects and implications of man's deliberate and accidental disturbance of such processes. Examples of processes should be taken, where relevant, from different climatic environments, such as humid temperate, periglacial, hot deserts and humid tropical.

This part of the syllabus is restricted to a study of the weathering, fluvial and coastal systems. A knowledge of glacial processes is not required, but the effects of past glaciation on the formation of river channels, hill slopes and coasts should be considered. Examples which could be used as illustrations include Dartmoor, the Sahara Desert, the Dust Bowl of South Dakota, the Dorset Coast, Dutch sea defences, the Vaiont reservoir of northern Italy and field investigations of local streams and slopes.

The analysis of rivers and their load, and of beach materials could be made when considering river channel scour, coastal erosion, soil erosion and slope stability.

Atmosphere

1) The nature of weather and climate; an appreciation of their effects on man's activities. The study of flow relationships of matter and energy

the atmosphere; air circulation at the earth's surface and at high levels within the troposphere; the atmospheric circulation of the hydrological cycle (including condensation and precipitation processes); ways in which weather is influenced by land and sea (including ocean currents), latitude and surface type (forest, grassland, urban); the nature and localised effects of major weather hazards such as blizzards, hurricanes, fog and drought. The climatic types which should be investigated are humid tropical, tropical monsoon, savanna, hot deserts, Mediterranean, humid temperate and mid-latitude continental.

2) Modifications of climate by man's activities. This study comprises the natural, accidental and deliberate modification of atmospheric phenomena.

The understanding of atmospheric processes can be applied in relation to patterns of agriculture, habitation, economic activity and transport, in the context of the climatic types opposite. Relevant techniques could include the use of meteorological instruments and the analysis of station records (weather and climate), weather maps and satellite photographs and their use in weather forecasting.

Examples could include the modification of the natural environment by migration of desert margins, urban climates, deforestation and attempts to modify weather by such means as rain making and hurricane dissipation.

Ecosystem

1) The concept of the ecosystem and its implications for man. The basic concept of an ecosystem is the interaction of the living components with the physical environment within an area. The implications to man should be studied through consideration of the principles of energy flows between soils and vegetation and animal communities; a general understanding of soil-forming factors in selected major soil types: chernozems, podzols, brown earths and latosols (a detailed classification of world soil types is not required). Links between soil and the vegetation community should be seen through energy and nutrient cycles. A balanced plant and animal community should be seen as the response both to external factors and as the result of internal competition. Relationships between man's agricultural activity and the ecosystem should be examined in terms of existing land capacity, and improvements which can be made to soil. Ecosystem modification through the uncontrolled use of modern methods of farming; industrial waste disposal and other forms of pollution,

The approach to this section could be from the local point of view through field investigations, or from the study of specific examples on a larger scale such as man's impact upon the Prairies. Other topics could include the over-exploitation of world fisheries; the effects of the use of artificial fertilisers and pesticides in specific areas, such as Lake Erie, Lough Neagh, Lake Kariba or the river Rhine.

B. Agriculture, Industry and Transport and Trade.

(i) Agricultural land-use patterns. The interaction of natural, economic, technological and political factors upon agriculture and agricultural systems, and the study of the resultant land-use patterns and changes.

The study should involve the critical use and application of agricultural location theory (Von Thünen) to the recognition and understanding of existing land-use zones.

(ii) Industrial Location. The study of the relationship between resource availability and economic, social and political factors influencing industrial development and location; factors affecting industrial location such as markets, transport, energy, labour, government policies; the growth and decline of industrial regions (agglomeration and industrial restructuring); theories of industrial location such as those of Weber and Lösch.

(iii) Transport networks and trade flows. The study of transport both for the movement of freight and passengers along routes which form a network. The patterns of such routes and the factors influencing their development and usage. Characteristics and spatial relationships of modal systems (roads, rail, water, air, pipelines). The location of terminals (sea and air). Factors which affect modal choice including time, cost and distance. Causes and consequences of current world trade patterns and the effect of trading blocs upon these patterns.

Direct investigation of rural land-use in a local area; detailed studies illustrating various farming systems and organisations including subsistence, commercial, extensive, intensive, collective, cooperative. Adaptions and changes in these farming types and land-use patterns should be considered by studying detailed examples such as land consolidation in France; the changing use of upland areas of Wales; intensification of land-use in the Netherlands; the 'Green Revolution' in India; the California State Water Plan.

The study of industrial location theory should be followed by its application to local studies and regional examples such as the pulp industry of Norrland; problems facing industrial expansion in South Wales; oil refining in the UK; office location in London; the car industry of U.S.A.; tourism in South France or East Africa; problems confronting industrialisation within any one Developing country.

Analysis of different passenger trip movement (e.g. work, shopping, school) in the local area and region, and freight (lorry routes, retail goods distribution). Changing patterns and roles of the various modes of transport. Factors affecting the location of terminals and their subsequent effect on the local economy and environment could be illustrated by reference to Ringway airport, Narita airport, Seaforth terminal, Europoort.

World trade patterns and the major trading blocs should be identified. Trade between tropical and tropical, tropical and temperate zones should be analysed. World trade in selected primary products (oil, sugar cane) should be made to illustrate the problems of overspecialisation and market fluctuations. Imports and exports for countries with trade surpluses and deficits should be discussed with the consequences explained. A trade bloc (E.E.C., Comecon, L.A.F.T.A) should be chosen; the basic reasons for its formation considered and its internal and external effects on trade volumes and directions examined.

A. Settlement

(i) The nature of settlements: their morphology and functions. The study of the siting, form and functions of rural settlements; the growth, morphology and functions of towns; spheres of influence of urban activities; urban models (such as those of Burgess, Hoyt, Harris and Ullman) including a consideration of the significance of land values and bid-rent curves.

Consideration should be given to rural and urban problems and their consequences: inner city problems such as redevelopment, unemployment, transport, ghettos; outer city problems such as commuting, suburbanisation, changes in the rural - urban fringes, green belts, new towns; and rural problems such as depopulation, transport and services, second homes and commuting villages.

(ii) The nature of settlement patterns. The concept of settlement hierarchy, the size and spacing of settlements in a region; central-place theory (Christaller, Lösch); the rank-size rule; spatial patterns of settlement and the influence of human and physical factors upon their development.

B. Geographical Perspectives On Current Problems

(i) Developed and Developing Countries/Regions. This section should provide an opportunity to synthesise the concepts studied previously, in particular, the ability to recognise patterns of spatial inequalities, such as the contrast between countries/regions at different stages of development in terms of their gross national product, demographic characteristics, educational provision and diet. It also provides the opportunity to consider the process of development on national (Rostow) and regional (Myrdal, core/periphery, growth centres) scales.

Studies in this topic could include - local mapwork/field investigations; comparisons between settlement in developed and developing countries comparisons between rural and urban areas. Detailed studies could include dispersed settlements of central Wales, nucleated settlements in Malaya; urban examples should be taken to illustrate the processes and consequences of urbanisation from both developed and developing countries. A similar approach should be taken towards rural settlement. The study of settlement hierarchies could be approached from consideration of examples locally, nationally or on a world scale.

The approach to this section could be through the interpretation of maps statistics or graphs showing world distribution of indices such as those of hunger, poverty, literacy, gross national product population growth, infant mortality, degree of urbanisation. Policies for alleviating these problems, in particular trade and aid, should be examined. Studies of regional statistics could be used to bring out differences between the local region and other regions in the country. The different theories could then be considered as explanations of the differences, and the varied policies could be evaluated. The effect of agricultural modernisation, industrialisation, transport provision and trade growth on development could be linked to themes in Topic E.

(ii) Areas of human and environmental conflict. This section provides the opportunity of using geographical perspectives and techniques to analyse the problems of areas of the world suffering from human and/or environmental conflicts.

This topic would obviously vary through time according to areas of human conflicts and conflicts of environmental usage. Questions will be sufficiently open ended to allow the candidate to use examples of his/her own choice. In 1978 areas which could have been selected to represent human conflict included East/Southern Africa, N. Ireland or the Middle East. Similarly, an area illustrating environmental conflict could have been chosen from Dartmoor National Park, Appalachia or Southern California.

THE LIST OF TOPICS ABOVE IS DESIGNED TO FOCUS THE CANDIDATE'S ATTENTION UPON SPECIFIC AREAS OF STUDY. THE TOPICS SHOULD NOT BE STUDIED IN A PURELY THEORETICAL MANNER AND THE CANDIDATE MUST ALSO HAVE A FUNDAMENTAL UNDERSTANDING OF THE PROCESSES INVOLVED. IN ORDER TO ACHIEVE THESE OBJECTIVES CONTINUOUS REFERENCE SHOULD BE MADE TO RELEVANT DETAILED STUDIES ON LOCAL, NATIONAL AND CONTINENTAL SCALES. THESE SHOULD ILLUSTRATE VARYING DEGREES OF DEVELOPMENT AND BE TAKEN FROM A VARIETY OF APPROPRIATE WORLD LOCATIONS WHENEVER POSSIBLE.

THE STRUCTURE OF PAPERS 2 AND 3 ALLOWS THE CANDIDATE SOME DEGREE OF SPECIALISATION WITHIN CERTAIN SYLLABUS TOPICS.

I TECHNIQUES AND SKILLS

outlined below are the techniques and skills with which a candidate should be conversant. These techniques and skills must not be considered as ends in themselves, but should be acquired and understood during the study of the complex inter-relationships present in Geography. Details of the specific skills and techniques expected are given in the accompanying notes and these may be updated from time to time.

The syllabus places great emphasis upon applied aspects of Geography, mainly through the use of detailed studies and field investigations. Below is a list of recommended data sources, and skills and techniques which might be acquired and applied whilst following this syllabus. The list may be changed from time to time and centres will be informed of any amendments to this list through the Board's circulars.

The proof and theoretical understanding of formulae used in statistical work will NOT be examined. Also, candidates will NOT be required to undertake statistical computations as part of an examination answer. Instead, questions will include the computed results of statistical analysis and candidates will be asked to comment upon such aspects as the significance of the results and the relevance/drawbacks of the particular method of analysis.

i) The collection and use of data from sources such as British topographic maps, soil maps, land-use maps, weather maps, aerial photographs (oblique and vertical), field surveys, published statistics.

ii) Representation of data

Techniques for showing distribution and spatial patterns such as dot method, choropleths, isolines, flow lines, networks, population pyramids, graphs, proportional symbols, depiction of relief.

iii) Presentation and analysis of data including:-

Suitable techniques might include:-

- (1) descriptive techniques
- (2) sampling
- (3) inferential techniques

- (1) mean, median, mode, standard deviation;
- (2) random and systematic samples;
- (3) simple correlation tests, (chi square, Spearman)

iv) Field techniques relevant to individual field studies.

Practical surveying techniques such as chaining, compass, traversing, plane tabling and levelling are relevant only to particular field investigations. Use of basic meteorological instruments; measurement of soil properties such as moisture content, particle size distribution, pH; vegetational quadrat sampling; basic hydrological techniques, such as stream flow measurement, soil infiltration capacity; use of questionnaires, pedestrian traffic counts; plotting of spheres of influence nearest neighbour analysis; land use mapping, both urban and rural.

III FIELD STUDIES

The undertaking of fieldwork studies and an assessment based upon this fieldwork plays a vital role within the framework of this syllabus and mode of examination, because field investigations cover many elements of geographical study which cannot be assessed adequately within a written paper. The fieldwork study presents the candidate with the opportunity to investigate a topic of his own choosing in some depth, to show initiative in searching for information and to draw conclusions from it. Moreover, field investigations also offer a candidate the opportunity to display originality.

The aim of the fieldwork studies section of the examination is to assess the ability of the candidate to undertake a field investigation relevant to the syllabus.

Many skills are utilised when carrying out a piece of fieldwork and candidates should show in their reports an ability to:

- (a) identify and define objectives for field investigation;
- (b) collect appropriate data, both through direct observations and from other relevant sources; an ability to use sampling techniques;
- (c) process and present data using appropriate techniques, and interpret the findings;
- (d) express the information in a clear and concise form;
- (e) evaluate the results and express these findings in the form of conclusions.

Fieldwork comprises the methodology and techniques used by geographers in studying the landscape and as such involves:

- (a) the collection, classification, analysis, synthesis, and evaluation of observations;
- (b) the identification of problems and the methods by which their solution may be sought;
- (c) the critical testing of geographical concepts and hypotheses, and the application of these to real situations.

Fieldwork is considered an essential component in the education of a geographer for the following reasons:

- (i) geography is both a theoretical and practical subject, and a fuller understanding of the subject may be accomplished through undertaking fieldwork investigation;
- (ii) geography has become an increasingly applied subject, giving rise to the need to relate geographical studies to wider problems of social and scientific interest;
- (iii) field investigations afford candidates the opportunity to work independently or to accept individual responsibility within a group investigation.

Candidates should attempt to demonstrate their competence by using some of the various skills used in field study, for example: data collection; analysis; synthesis; hypothesis testing; problem solving; analysis and presentation of material.

Specimens and large maps and drawings should not be included in or submitted with the report, but may be brought to the Oral Examination to be shown to the Visiting Examiner.

Each candidate must submit a fieldwork report consisting of a single individual field investigation. Other fieldwork undertaken as part of the course should not be submitted and will not be assessed as part of the examination. Fieldwork reports must show evidence of direct observation in the field and candidates should not produce projects based mainly on secondary information, such as material obtained from handouts or books. A study of a factory, for example, based upon material issued through handouts will not be considered as fieldwork. Candidates should be encouraged to choose their topics for study carefully, and to use a variety of techniques appropriate to their investigations; topics should also be related to the syllabus as set out above.

The final fieldwork report should consist of the individual fieldwork exercise undertaken by the candidate.

A candidate who does not submit a fieldwork report and/or does not attend the Oral Examination will be considered to have missed Paper 4 of the examination.

A fieldwork report submitted for a June examination may only be resubmitted for the November examination of that year.

Assessment of Fieldwork

The fieldwork reports will be assessed in the following manner, by an examiner appointed by the Board.

(a) The examiner will receive the candidate's fieldwork report three weeks before the commencement of the Oral Examination period and will award a mark to the report.

Centres will be required to certify that the work submitted is the candidate's individual work.

It is recommended that centres undertake a variety of basic field exercises which might well be group work. These will help to give candidates the necessary skills for their individual fieldwork investigation and also to relate the theoretical aspects of the subject to direct experience.

The type of field investigation undertaken will depend upon many factors such as the location of the centre, the time available and the specialisms of the teaching staff. The amount of time devoted to the individual field investigation will depend upon the nature of that investigation, its aims the collection of relevant data and the conclusions. A minimum of two days spent in the field on the individual study is recommended. The use of the local environment for field studies and hypothesis testing is also recommended. Raw data collected in the field for the individual investigation should be included with the report

Centres should refer to the appropriate 'M' form regarding candidates re-submitting a fieldwork report for a November examination.

The examiner will arrange with the centre the time and place for the conduct of an oral examination for each candidate, within the oral examination period as stated on the Board's examination timetable. This period will normally extend from the beginning of May to the end of June for the summer examination.

cont'd ...

(b) The examiner will require each candidate to attend an oral examination which will last approximately 30 minutes. The Oral Examination will be devoted entirely to the assessment of the fieldwork investigation. The aim of the Oral Examination will be to give the examiner the opportunity to complete the assessment of the report, as well as to provide the candidate with the opportunity to discuss his/her work and to supplement it with additional notes and samples.

Each centre will be required to complete a proforma placing the fieldwork reports of their candidates in an order of merit.

Fieldwork reports will be returned to the candidate prior to the oral examination.

Information regarding the timetable and conduct of the oral examination will be issued to centres in advance on the 'M' form. The date for the submission of the fieldwork reports to the appropriate examiner will be given in the Board's January circular prior to the examination. Centres offering less than 5 candidates for examination must be prepared to combine with other centres for the oral examination.

The proforma will be sent directly to the Board and will be considered by the examiners' panel in conjunction with the candidate's final subject assessment.

It is suggested that the following criteria should be taken into account by supervisors in arriving at an order of merit.

- (i) Clear statement of aims and objectives of the work carried out.
- (ii) Methods of investigation and collection of data.
- (iii) Relevance and quality of the skills and techniques applied to the data.
- (iv) Relevance, interpretation and use of information collected.
- (v) Conclusions reached.
- (vi) Originality and individuality of the report.
- (vii) Presentation, cohesion and logical development.

Centres with less than 3 candidates will not be required to submit an order of merit.

As the Board will scrutinise a sample of all field investigations for a particular examination for standardisation purposes, the Oral Examiner may request that a candidate's written report is submitted to the Board after the written examination. In the event of such an instruction reference should be made to the appropriate 'M' form.

THE ASSOCIATED EXAMINING BOARD

for the General Certificate of Education

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REPORT ON THE ADVANCED LEVEL GEOGRAPHY TEACHERS' MEETINGS

Seven one-day regional teachers' meetings were run by the Board in January, February and March 1980 to give teachers the opportunity to discuss the new 'A' Level syllabus which the Board had published in the summer of 1979.

All teachers of Geography in the Board's centres and many teachers in non-AEB centres received the draft syllabus as a discussion document in 1978 and were invited to submit comments and suggestions to the Board. Comments were also sought at this time from six teachers chosen randomly who were asked to complete a detailed questionnaire. The regional meetings were held as the second stage in the involvement of teachers in the development of the new syllabus.

All the comments received were carefully considered by the syllabus revision working party and a number of major amendments were made to the draft which went to the Board's Education Committee and then was approved by the Schools Council in the spring of 1979. The new syllabus notes for guidance, specimen papers and suggested booklist were published and sent to all the Board's centres and interested parties in July 1979.

The meetings were arranged for early 1980 and were held as follows:-

Birmingham	-	26 January
London	-	9 February
Manchester	-	16 February
Leeds	-	23 February
London	-	1 March
Reading	-	8 March
Bristol	-	15 March

The total number of teachers who were able to attend was 333 and a list of all the participants (based on tickets) is attached to this report for information.

It was agreed by the conference organisers that a report should be produced on the meetings, partly for the benefit of those teachers who were unable to attend any of the meetings and partly for the further clarification of points raised for those who did attend.

At each of the meetings, teachers were invited to complete a questionnaire which was intended to help the Board to draw conclusions from the meetings and the results of the questionnaire are also attached for information.

The majority of teachers found the meetings helpful and that the comments made and questions asked indicated a need for more help in teaching the syllabus rather than an expression of any discontent with the syllabus content. It must be remembered that the Board is not empowered to run in-service teacher training courses but it is hoped it will be possible to carry out a number of the requests made for additional help.

This report attempts to summarise under particular headings the main issues raised in the discussions and the replies or advice that was given. It is recognised that some of the points raised were particularly relevant to the teacher concerned but it may be of help to all teachers to learn of the matters raised at meetings other than the one they were able to attend.

General Comments on the syllabus made by the teachers

1. A number of teachers expressed concern that Geography was becoming a 'third subject' choice at Advanced Level and was therefore not being studied by "specialists". While sympathising with teachers who are faced with the "disinterested" non-specialist, the Board would emphasise the fact that what it is offering is an Advanced Level syllabus to be tested by an Advanced Level examination and whether it is taken as the main subject of the candidate or a second or third is irrelevant in terms of syllabus content, approach and standard expected.
2. The panel emphasised that the novelty of the new syllabus lay mainly in its change of emphasis from the specific and regionally-orientated studies to a concept-based syllabus aimed to consider man and his relationship with his environment. Very few of the concepts being tested in the syllabus are in fact new but the approach is different. Students will be expected to learn concepts through detailed studies. Asked if this approach was likely to cause a student to have a fragmented view of the world, the panel replied that that would depend on how material was put across to the student and that this was possibly occurring even with the old syllabus through the selection of topics and countries for study.
3. The point was made that the new syllabus was not Geography but a mixture of social science and physical science and that the discipline was becoming less attractive and appropriate to school/colleges' needs. The panel pointed out that there has always been and presumably always will be great debate on the nature of the subject and on what should be taught in an Advanced Level Geography course. A syllabus is always a compromise to suit the majority and there will always be some teachers who disagree with the philosophy.
4. The panel were anxious that teachers should appreciate the difference between the stated syllabus which is compulsory material for study and the notes for guidance which are intended purely to explain the syllabus by means of examples. It was clear from the meetings that many teachers saw the examples in the notes for guidance as compulsory material and failed to realise that questions in the examination papers will be set only on the syllabus as stated. The kind of examples given in the notes for guidance are intended only as illustrative. Many teachers considered the new syllabus to have increased their teaching load but in fact this is not so and they can be selective in their teaching topics more safely than within the terms of the present syllabus.

5. One point which was strongly made at all the meetings was on the amount of quantitative techniques and statistical analysis that were required. These are only one area of skills intended to be developed and used through study of the syllabus. Reference to statistical techniques in the syllabus should not be taken to imply that teachers are required to teach mathematics or that their candidates should have studied either mathematics or statistics in order to be able to study Geography. In the examination, the questions set on this area of the syllabus would require an appreciation of statistical methods and not a detailed knowledge of their computation. Certainly it should be noted that quantitative techniques are not an innovation in AEB Geography and that many candidates are currently making use of these techniques in their fieldwork studies. It is hoped that this will continue to be the case.
6. Some teachers expressed concern that teaching the new syllabus would be difficult in terms of 'splitting' the timetable in future between the Geography staff. Some felt it would be difficult for a staff used to a human/physical split; others felt it would be better not to 'split' at all but the syllabus was too wide for one person to cope with. The panel did not foresee the teaching of the syllabus content as a major problem as almost every school/college organised its teaching programme according to its own strengths and the individual staff concerned.
7. It was stressed at most of the meetings that the examination was intended to test Geography, not English, but it was also pointed out that candidates at Advanced Level must have skills of communication and expression, and a candidate who is poor at English will inevitably penalise himself or herself. Regarding the acceptability of answers in note-form, the panel made it clear that note-form could be used and would be acceptable where appropriate to the question. In questions where some degree of discussion or comparison was required, notes would not be adequate and in such a case, a candidate could not expect to gain full marks. For example, candidates would be expected to write essays for paper three.
8. On at least two occasions, the panel were asked whether or not students should be issued with the syllabus booklet. As far as the Board is concerned, syllabuses are published for the information of all who are concerned or interested in Ordinary and Advanced Level courses and examinations, and there is no reason why a teacher should not make the syllabus and other supportive material available to students. The Board would recommend that syllabuses were circulated to students.
9. The panel explained to all the meetings that the syllabus working party was carefully established in the early days of development to be representative of all types of institution to which the Board offered its examinations. Teachers in Further Education were not to assume that the syllabus had been devised purely from a school's point of view.

10. A number of teachers raised the question of the timetabling of the three written examination papers. Many were concerned that candidates should not have to sit 2 papers on one day (perhaps papers 1 and 2). Others felt it would be to the candidates' advantage. No decision has been made on the dates to be fixed for 1982 but whatever the final arrangement, the Board would consider an alternative arrangement for a future examination if public demand suggested it to be necessary.

On the whole, there seemed to be a consensus of opinion that the new structure to the examination was an improvement and the testing of candidates by four different methods gave candidates more scope to show what they were capable of achieving.

Specific topics within the syllabus

1. On the whole, there were few queries raised at the meetings regarding the wording of the syllabus. One or two suggestions were offered for alternative wordings and the working party agreed to consider these at an appropriate time.
2. Few problems seemed to have been experienced in the understanding of the theme and construction of the syllabus although some teachers queried the ordering of the topics within the syllabus and the panel explained the significance of the resources and population topic coming first with the general topic on geographical problems coming at the end of the man/environment theme.
3. One main area of concern was on the omission of 'glaciation' as a process. The panel explained that no Advanced Level syllabus could realistically include everything and that the direct physical processes of glaciation were not of great significance to man. What was important was the effects of glaciation on man and his environment. Many teachers obviously regretted the deletion of glacial processes but just because the examination will not be testing glacial processes, this does not preclude their inclusion in the course. It is expected that candidates will need to have some understanding of the processes before they can appreciate the effects. They will not be expected to answer questions on this area in the examination and should not illustrate their answers with material that is related to 'process' rather than 'effect'. Likewise, the fieldwork investigation must relate to the syllabus and therefore a topic on glaciation must be concerned with man and glaciation, and not simply with glaciation.
4. With reference to the section on settlements, the point was made that the basic concepts of settlement should be developed from more than just British examples.
5. Section G caused quite a lot of comment, possibly because it is less precise than the others in terms of content and possible case studies. With reference to developing countries, the point was made that questions on this section could be inhibiting if they referred to 'one developing country', as a student could have studied the syllabus through several case studies and not one in sufficient depth. This point has been noted and will be drawn to the relevant moderating panel when approving the question papers.

The point was also made with reference to Section G, that whereas Section G(i) can be a taught part of the syllabus, Section G(ii) is seen as a synthesis of the course and will provide the candidates with the opportunity to apply concepts learnt during the course to actual geographical problems.

It was stressed to the audiences that all the questions for Section G will necessarily be general to allow candidates to select their own examples as illustrations. A request for 4 questions in this section rather than 3 will be considered when the syllabus is reviewed after the first two examinations.

The panel explained that the syllabus would be carefully reviewed after the first year and question choice would be one of the points which they would be required to look at.

A query was raised on the wide interpretation which could be placed upon material in Section G and the panel recommended that the geography of Section G(i) could best be considered at differing stages of economic/human development.

More sample questions were requested on this section and this request will be further considered.

6. Many comments were made on the Ordnance Survey map question. It was regrettable that the sample question was not fully indicative of the style of question to be set in the future and the working party will be asked to consider producing a further map question along with other specimen questions.

The question as to whether or not candidates should have the key to the OS extract was raised and this will be given further consideration. It was explained that mapwork was regarded as one of the many techniques which the candidates should be encouraged to develop and use throughout the whole course and the new syllabus intended to move away from the old traditional descriptive approach to OS mapwork. It was for this reason that the OS question had not been made compulsory. The map was now seen essentially as a source of data and a means of testing particular techniques. The panel emphasised that the syllabus states that there will always be an OS map question. Therefore those teachers who are concerned that OS work is no longer compulsory can still teach it as if it were so and the element of choice on paper 1 does not downgrade OS mapwork as such, as general map interpretation will figure elsewhere in the papers. It is intended that the map will be used as a tool and not as an end in itself.

7. Many teachers expressed concern about the fieldwork section of the examination and further guidance was requested. The panel feel that the syllabus is quite specific about the nature of the fieldwork required and further notes for guidance are not necessary. It was agreed that teachers would be given the criteria for assessment to be used by the examiners in order to rank their candidates and this criteria would partly fulfil the need for further help. It was stressed at all the meetings that the fieldwork required for the new examination would be much more limited than the present work submitted.

The examiners require one piece of work which should be related to the syllabus and based on individual work and personal investigation. Group work should not be encouraged for the single piece of work which will be examined but could be undertaken in the general fieldwork undertaken during the course. The final piece of work should not be lengthy and should represent the equivalent of about two days in the field. This does not mean only two days fieldwork is required in the teaching of the course. The quality of the work was important and the work should not be in the form of a lengthy, bound project as is commonly seen at present.

Asked about the degree of teacher supervision on this part of the examination, the panel informed the teachers that the amount of help they gave their candidates was at their discretion but the examiners were testing candidates on their individual investigation and would expect the candidate to have had guidance from the teacher but to have done all the work himself. Many teachers asked for titles of fieldwork studies to be vetted prior to the examination. It is unlikely that this suggestion will be taken up as it is impracticable in terms of the time available and the vetting of a title could not provide a guarantee for either centre or student that the resultant study would be adequate. The panel agreed that feedback of some kind should exist on fieldwork topics and this will be considered further. The idea of a published list of acceptable titles was considered but thought to be of doubtful usefulness without the actual investigation as a sample. The Board wishes to encourage individuality in field study investigation and a published list of titles was seen as likely to encourage stereotyping.

The speakers stressed that the oral examination would only test the candidate on the single fieldwork investigation and would differ in approach from the present situation. The oral was the means of verifying the individuality of the fieldwork and would no longer be a part of the examination in its own right.

Regarding re sit candidates, the regulation regarding the re-submission of fieldwork was pointed out and teachers were asked to note that a piece of work could only be re-submitted in the November re-sit. If a candidate re-sat the following June, he would be expected to have written up a new piece of work, possibly based on some other aspect of his previous general course fieldwork.

8. A number of specific points were raised with reference to marking schemes. It was stressed that marking schemes for actual examination papers are and will continue to be confidential and therefore not available to teachers after examination. It was agreed that the Board should be asked to consider publishing marking schemes for the specimen question papers and also the introduction of a formal feedback system. It was agreed that mark allocations would appear on paper 2 and the panel would consider the possibility of mark allocations on all parts of the examination.

A request for additional sample questions was made and it was agreed that this should be raised with the Subject Committee.

9. A lot of discussion took place at all the meetings on teaching resources and it seems that it is the provisions of materials for the new syllabus that is causing most concern. The panel noted that the booklist was considered to be very long by some teachers and lacking detail for others. It was agreed that the suggested reading/resource list would be revised but the point was also made that the Board was merely attempting to give guidance through the booklist and could not be expected to provide a regular, up-to-date list of resources. The provision of materials for teaching the course is regarded as the responsibility of the individual teacher concerned and each teacher is expected to choose his or her materials according to the particular detailed studies chosen to illustrate the syllabus. It was felt that adequate material was available in resources presently in use. Innovative teachers would undoubtedly compile new material for the new syllabus. There were a number of journal publications obtainable through the Geographical Association which would be of assistance. Other sources of support suggested were local libraries, LEA advisers, Teachers' centres and Institutes of Higher Education.
10. The question of atlases was raised and the majority of teachers were in favour of retaining the use of an atlas in the examination. The difficulties of having 'approved atlases' was raised and there was no consensus of opinion about which atlases could be used or whether any atlas could be used. The panel decided to debate this issue further in committee.
11. The Board's regulations regarding the use of calculators applies to the new syllabus and no special provisions are necessary as candidates will not be required to do computations in the examination.
The inclusion of the gravity model formula in a specimen question provoked discussion of the general policy concerning the standardisation of formulae and it was agreed that this point should be further considered by the Subject Committee, together with the question of whether formulae should be used in questions.

* * *

POSTSCRIPT

As a result of the teachers' meetings, the Subject Committee has met to consider the points raised through general questions and the responses to the questionnaire. At a meeting of the committee on 30 May, the following decisions were made:-

1. The suggested booklist currently in circulation will be reconsidered, revised and reduced. Centres will be notified via the circular when the revised version is available but it is stressed that the Board does not prescribe books for Geography courses and teachers are encouraged to build up their own resources and references.
2. Mark allocations will be printed on all question papers and the percentage of marks carried by each paper will appear in the rubric of each paper as well as the total mark for the paper.
3. Marking schemes for the specimen papers will be drawn up and made available as soon as possible. Centres will be informed through the circular when these schemes are available.
4. A number of additional specimen questions will be available in the course.
5. Section headings will appear on paper 3.
6. Formulae will not appear in questions, nor will the Board publish 'standard' formulae.
7. Criteria for the assessment of fieldwork will be made available to teachers.
8. Candidates may use any published world atlas in the examination but will still be required to state the name of the atlas they have used on their scripts.

* * *

A list of the teachers who participated in the meetings is attached, based upon the ticket returns.

Copies of this report have been sent to all these participants directly and to every AEB centre via the Board's circular. Additional copies are available on request to the Board's Geography Department, A6.

The extra supportive material as detailed in the concluding section will be circulated in the same way as soon as the material becomes available.

PUBLICATIONS FOR SALE

In addition to sets of past examination papers and the Board's Syllabuses for 1980 and 1981, the publications listed below are available from the Board. A complete list of the Board's current publications with prices is available from the Board.

Reports of Examiners

These reports are published in the belief that they will help teachers who are preparing pupils for the Board's examinations.

- 1975 Examination: Bound copy of all subject reports
- 1976 Examination: Available for all subjects
- 1977 Examination: Available for all subjects
- 1978 Examination: Available for all subjects
- 1979 Examination: Available for all subjects after September 1979

Technical Drawing Standards Booklet

For the guidance of teachers and pupils engaged in Technical Drawing to the level of CSE or GCE Ordinary level examination.

Graphical Symbols for Use in Science Examinations

Graphical Symbols for Use in Technical Studies Examinations

Notes for Guidance for Teachers of Typewriting

Logarithmic and Other Tables

Memoranda

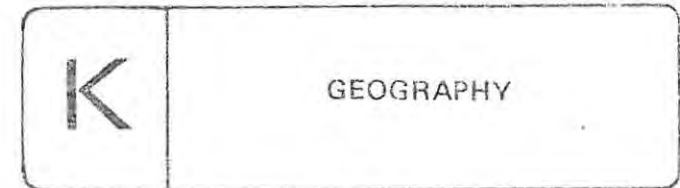
- No. 1 Officers of the Board, Committee and Panel Members Directory (revised annually)
- 5 Examinations under Mode 3 (revised annually)
- 6 The Examination of Integrated Studies (July 1972)
- 7 Metrication (September 1977)
- 8 Examinations under Mode 2 (December 1976)
- 9 Oral Assessment in Mode 3 Courses (September 1976)

Whenever a memorandum is revised, the latest edition will be supplied, and, on publication, the initial free entitlement issued to Centres will continue.

CERTIFICATE OF SECONDARY EDUCATION

Syllabuses for the 1981 Examinations

PRICE
25p
postage
free



WEST MIDLANDS EXAMINATIONS BOARD

Norfolk House, Smallbrook Queensway, Birmingham B5 4NU

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new syllabuses and additions, deletions and alterations to syllabuses are indicated by vertical lines in the margin opposite the text.

The Board's syllabuses for 1981 have been printed as follows:

B	Art and Craft	20p
C	Child Care and Development	20p
D	Classical Studies	20p
E	Commercial Subjects: Accounts	
	Commerce	
	Office Practice	30p
	Shorthand	
	Typewriting	
F	Computer Studies	20p
G	Drama and Theatre Arts	20p
H	English Language, English Literature, English	30p
I	Environmental Studies	20p
J	European Studies	20p
K	Geography	25p
L	Geology	20p
M	History	25p
N	Home Economics	20p
O	Mathematics and Elementary Mathematics	20p
P	Modern Languages	20p
Q	Music	25p
R	Needlecraft	20p
S	Religious Education	30p
T	Rural Science	20p
U	Science: Biology	
	Chemistry	
	General Science	35p
	Human Biology	
	Physics	
V	Social Studies	20p
W	Technical Drawing	20p
X	Technical Studies (Crafts): Building Studies	
	Metalwork	
	Woodwork	
	Design in Metalwork	30p
	Design in Woodwork	
	Motor Vehicle Studies	
Y	The Theory and Practice of Physical Education	20p
Z	Use of English for Immigrants	20p

Any of these syllabuses can be obtained from the Board's offices at the cost indicated (postage free).

A limited supply of the complete bound copy of all these syllabuses, together with the Board's General Regulations, is also available at a price of £1.25 (postage free).

For list of other publications please see end of booklet.

GEOGRAPHY

Metrication: questions involving rainfall, pressure or temperature will be set in millimetres, millibars or degrees celsius respectively, with the equivalent imperial units given in brackets. Candidates may use either metric or imperial units in their answers until cartographical usage makes it possible to review the situation.

Ordnance Survey maps: metric maps will be used.

Centres may enter candidates for Syllabus A and Syllabus B; individual candidates may be entered for one syllabus only.

GEOGRAPHY – SYLLABUS A

Aims

To involve and direct the pupils' interest in:

- the evolution of the earth by physical forces and the constant modification of the landscape by natural processes;
- man's progressive adaptation to, and inter-relationship with, his environment;
- man's development of the earth's natural resources with his consequent industrial and economic activities;
- the spatial patterns, both natural and man-made, found on the earth's surface.

Objectives

To enable pupils to:

- recall specific facts relevant to the syllabus;
- demonstrate the ability to comprehend and interpret common types of geographical source material, both primary and secondary in nature, including photographs, maps, statistics, graphs and diagrams;
- show the ability to recognise simple geographical relationships and be able to make an analysis of the underlying factors concerning these relationships;
- demonstrate by logical reasoning the ability to relate particular cases to known patterns;
- evaluate and compare material diverse in content and presentation;

demonstrate where appropriate by the use of practical work/field work the ability to observe selectively, record accurately and make simple interpretations of a geographical nature.

Examination

	<i>Duration</i>	<i>Marks</i>
<i>Paper I British Isles</i>	<i>2½ hours</i>	<i>40%</i>
<i>Paper II Themes (3)</i>	<i>1½ hours</i>	<i>30%</i>
<i>Field Study/Special Study (to be shown as an order of merit)</i>	—	<i>30%</i>

Atlases

A suitable atlas supplied by the centre must be available for each candidate for use in both examinations, but not all questions may be answerable from an atlas.

Paper I — British Isles

The first question will be compulsory and will involve the interpretation of an Ordnance Survey Map (1:50 000 or 1:25 000 scales). Centres must supply candidates with the OS Symbols Key for use in the examination.

In addition to the compulsory question, candidates will be required to attempt three further questions from a choice of eight. This part of the paper will be based on the regions listed below but only in relation to the topics specified. Each question will be based on one particular region; more than one of the topics listed below may appear in any question. Use may be made of photographs, statistics and written descriptions. There will be at least one question on each region each year.

Regions

- A West Midlands (*ie* the area covered by the WMEB).
- B South-West England (Cornwall, Devon, Somerset and Avon).
- C North-East England (Northumberland, Tyne and Wear, Durham and Cleveland).
- D East Anglia and the Fens (Norfolk, Suffolk, Cambridgeshire and Lincolnshire south of a line joining Grantham and Boston).
- E Scotland north of the Highland boundary fault.

F Merseyside, Greater Manchester and Cheshire.



Topics

- 1 Livestock (beef and dairy cattle, sheep), arable and mixed farming.
- 2 Market gardening and fruit farming.
- 3 Extractive industries (mineral fuels, kaolin, salt, limestone, sand and gravel).

- 4 Chemical industries.
- 5 Metallurgical industries *ie* iron, steel and aluminium, and their associated engineering industries.
- 6 Transport: road, rail, air and water.
- 7 Population: distribution and change.
- 8 Tourism.

Note: *The regions and topics for study will be changed from time to time but each will be kept for a minimum period of three years.*

Paper II – Themes

Candidates will be expected to study three of the themes A to H, each from a different syllabus section given below and in the examination to attempt one question on each of the themes studied. Two questions will be set on each theme.

1 – Physical

- A Marine and glacial erosion and deposition.
- B A study of the following natural regions:

equatorial forest lands,
Mediterranean regions,
hot deserts,
cool, temperate, western margins,

with reference to their world distribution, climate and natural vegetation.

2 – Human

- C Principles of urban geography with reference to Western Europe: settlement patterns, structure of cities, urban problems, transport networks.
- D World population: the general pattern of world population distribution, including a study of population growth and major changes, with special reference to the Americas.

3 – Economic and Agricultural/Industrial

- E Major world supplies of oil, natural gas and hydro-electric power; location, production, transmission, transportation and usage.
- F Extensive, intensive and commercial farming methods as

illustrated in the Americas with reference to the following types:

wheat farming and cattle ranching,
fruit and vegetable farming.

4 – Regional

- G Scandinavia (Norway, Sweden, Denmark).
- H Benelux (Belgium, Netherlands and Luxembourg).

Note: *Topics will be changed from time to time but each will be kept for a minimum period of three years.*

Field Study/Special Study

To be eligible for an award of a grade candidates must submit either a Field Study or a Special Study. This must be completed and marked by 1st May, 1981. The assessment for this section will be submitted as an Order of Merit.

Teachers are strongly advised to consult the Notes of Guidance on Field Studies and the Notes of Guidance on Special Studies published by the Board in October 1979.

The amount of Geography teaching time devoted to the Field Study or Special Study over a period of two years should be proportionate to the marks allocated to this component in the scheme of examination, *ie* 30 per cent. Each candidate must submit an individual study even where an exercise has been done as a group project. The guiding principle for acceptable work is that it must have geographical relevance.

Either

1 Field Study

Each candidate taking this alternative must produce a note book showing evidence of personal Field Study involving direct observation on one or more of the topics listed below. The text of a Field Study should not exceed 4000 words. It is appreciated that many Field Studies can be satisfactorily achieved in less, depending upon the topic chosen. Excessive length should be actively discouraged. It is not envisaged that 30 per cent of the Geography course should be spent 'in the field'.

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Topics

- A A record of a field work course.
- B A record of a series of day expeditions which formed part of a planned course of study in physical and/or human geography.
- C The study of the geography of an industry or industries.
- D A study of transport and communications in relation to the needs, *eg* industrial, agricultural, social, of a locality.
- E A land use survey.
- F Study and records of the work done on a farm or farms.
- G Climatic observation recording and interpretation:
As many as possible of the following sections (i) to (viii) should be studied:
- (i) Temperature, rainfall and wind direction.
 - (ii) Local climate related to aspect of slope, shelter from wind, temperature inversion.
 - (iii) Snowfall, depth and duration at places with different aspects.
 - (iv) Frosts in respect of date and altitude.
 - (v) River flooding, height and dates correlated with precipitation.
 - (vi) Cloud formation.
 - (vii) Recording and interpretation of weather phenomena.
 - (viii) Testing the reliability of weather sayings.
- H Settlement Studies.
- J A record of practical experiments carried out indoors or outdoors to demonstrate geographical phenomena.

Teachers should mark each Field Study under the following headings, using the proforma provided by the Board:

- (i) observation, selection and recording of relevant geographical information; (10 marks)
- (ii) interpretation of such information and conclusions as can be drawn from it; (10 marks)
- (iii) presentation (cartographical skills and use of illustrations). (10 marks)

or

2 — Special Study

Each candidate taking this alternative must produce a Special Study based on all three aspects of **one** of the Topics A — J listed below. If a candidate wishes to submit a study which is not covered by this list, notification of its title and outline of content should be sent to the Board as early as possible and not later than 30th September, 1980. All topics must have a starting point based on the West Midlands. The text of a Special Study should not exceed 4000 words.

A The Iron and Steel Industry

- (i) The Black Country: growth and change.
- (ii) The modern steel industry: locational factors (ore field location, a coastal site).
- (iii) Study of an iron and steel complex outside the UK.

B The Generation of Electricity

- (i) Thermal power stations in the Trent Valley.
- (ii) HEP in Europe.
- (iii) Nuclear power in the UK.

C Oil Refining and Petro-Chemicals

- (i) An example of an oil based industry in the West Midlands.
- (ii) Study of a UK oil terminal.
- (iii) Oil exploitation either in the UK or abroad.

D Land Reclamation

- (i) From industrial wasteland in the West Midlands.
- (ii) From the sea.
- (iii) From a desert region.

E Intensive Farming

- (i) Fruit and vegetable production in the West Midlands.
- (ii) Wheat growing in East Anglia.
- (iii) Rice growing in South East Asia.

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F Water Supply

- (i) Local sources of supply.
- (ii) Siting of reservoirs in the UK.
- (iii) Irrigation in a third world country.

G Land Use for Leisure

- (i) Development and planning of local leisure facilities.
- (ii) National Parks in the UK.
- (iii) Either National Parks in North America or Wildlife Parks in Africa.

H Twentieth Century Urban Development

- (i) An example of urban development in the West Midlands.
- (ii) Distribution of new towns in the UK.
- (iii) An example of a planned settlement in a desert region.

J Population Movements

- (i) Changes in rural population; growth and decline.
- (ii) Internal movement of population in the UK.
- (iii) International movements of population.

Teachers should mark each Special Study under the following headings, using the proforma provided by the Board:

- (i) selection and recording of relevant geographical information; (10 marks)
- (ii) interpretation of such information and conclusions as can be drawn from it; (10 marks)
- (iii) presentation (cartographical skills and use of illustrations). (10 marks)

GEOGRAPHY — SYLLABUS B

A conceptual approach to the study of Geography

Aim

To provide pupils with the means of analysing, organising and assessing geographical facts and techniques in a way which will enable them better to understand the inter-relationship of environmental factors and processes.

Examination

	<i>Duration</i>	<i>Marks</i>
<i>Written Paper</i>	2½ hours	70%
<i>Field Study/Special Study</i>	—	30%

Written Examination

Candidates must attempt a compulsory question (objective type) which will carry 10% of the final marks and three further questions (worth 20% each of the final marks) from the remaining five questions. Individual questions may cover more than one concept or area of study.

Atlases

A suitable atlas supplied by the centre must be available for each candidate for use in the examination, but not all questions may be answerable from an atlas.

Syllabus

This syllabus is essentially one of inter-relationship and should be studied by using the following concepts:

- scale, networks, nodes, lines, patterns, hierarchies, movement in space, change, associations and interactions, accessibility, density.

The general principles of enquiry for each section are outlined in the Notes of Guidance.

Candidates will need to develop and use the skills and techniques given below:

- 1 Map reading, including Ordnance Survey. Centres must supply candidates with the OS Symbols Key for use in the examinations.

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- 2 Comprehension, use of geographical data, selection of relevant data.
- 3 Photographic interpretation.
- 4 Problem solving.
- 5 Observing, recording and analysing.
- 6 Hypothesis testing.

Teachers are advised to build up a bank of available data.

Content

1 Rural Settlement and Urban Growth

Rural Settlement Pattern

- (a) Site: villages and scattered settlements.
- (b) Central place theory.

Urban Growth

- (a) Theories of urban growth:
 - population density
 - house unit density
 - height of buildings
 - value of land
 - local service centres.
- (b) Identification of the nature of specialised zones:
 - industry
 - commerce
 - redevelopment
 - residential
 - CBD.

movements:

 - pedestrian
 - private traffic
 - public transport.
- (c) Growth of urban populations and areas.
Urban growth simulations and role plays.
- (d) Effect of planned and unplanned development.

2 Transport

A network analysis applied to any form of transportation:

- air
- canal
- motorway, road and footpath
- pipeline
- railway
- river
- sea.

The above should be studied in relation to (i) Movement and distance (ii) Transport links (iii) Networks (iv) Points of change.

3 Agriculture

- (a) Von Thünen: theories of land use.
- (b) Climate, soils, slope.
- (c) Accessibility and markets.
- (d) Supply and demand.
- (e) Labour.
- (f) Government and farming.

4 Industry

- (a) Principles of industrial location.
- (b) The industrial region:
 - correlation with local extraction
 - location of heavy industry
 - growth of light industry
 - development of market
 - relocation
 - governments and industry.
- (c) Areas of specialisation.
Areas of inertia.

Field Study/Special Study

To be eligible for an award of a grade candidates must submit either a Field Study or a Special Study. This must be completed and marked by 1st May, 1981. The assessment for this section will

be submitted as an Order of Merit.

Teachers are strongly advised to consult the Notes of Guidance on Field Studies and the Notes of Guidance on Special Studies published by the Board in October 1979.

The amount of Geography teaching time devoted to the Field Study or Special Study over a period of two years should be proportionate to the marks allocated to this component in the scheme of the examination, *ie* 30 per cent. Each candidate must submit an individual study even where an exercise has been done as a group project. The guiding principle for acceptable work is that it must have geographical relevance.

Either

1 Field Study

Each candidate taking this alternative must produce a note book showing evidence of **personal** Field Study involving direct observation on one or more of the topics listed below. The text of the Field Study should not exceed 4000 words. It is appreciated that many Field Studies can be satisfactorily achieved in less, depending upon the topic chosen. Excessive length should be actively discouraged. It is not envisaged that 30 per cent of the Geography course should be spent 'in the field'.

Topics

- A A record of a field work course.
- B A record of a series of day expeditions which formed part of a planned course of study in physical and/or human geography.
- C The study of the geography of an industry or industries.
- D A study of transport and communications in relation to the needs, *eg* industrial, agricultural, social, of a locality.
- E A land use survey.
- F Study and records of the work done on a farm or farms.
- G Climatic observation recording and interpretation:
As many as possible of the following sections (i) to (viii) should be studied:
 - (i) Temperature, rainfall and wind direction.

- (ii) Local climate related to aspect of slope, shelter from wind, temperature inversion.
- (iii) Snowfall, depth and duration at places with different aspects.
- (iv) Frosts in respect of date and altitude.
- (v) River flooding, height and dates correlated with precipitation.
- (vi) Cloud formation.
- (vii) Recording and interpretation of weather phenomena.
- (viii) Testing the reliability of weather sayings.

H Settlement Studies.

J A record of practical experiments carried out indoors or outdoors to demonstrate geographical phenomena.

Teachers should mark each Field Study under the following headings, using the proforma provided by the Board:

- (i) observation, selection and recording of relevant geographical information; (10 marks)
- (ii) interpretation of such information and conclusions as can be drawn from it; (10 marks)
- (iii) presentation (cartographical skills and use of illustrations). (10 marks)

Or

2 — Special Study

Each candidate taking this alternative must produce a Special Study based on all three aspects of one of the Topics A — J listed below. If a candidate wishes to submit a study which is not covered by this list, notification of its title and outline of content should be sent to the Board as early as possible and not later than 30th September, 1980. All topics must have a starting point based on the West Midlands. The text of a Special Study should not exceed 4000 words.

A The Iron and Steel Industry

- (i) The Black Country: growth and change.
- (ii) The modern steel industry: locational factors (ore field location, a coastal site).
- (iii) Study of an iron and steel complex outside the UK.

B The Generation of Electricity

- (i)* Thermal power stations in the Trent Valley.
- (ii)* HEP in Europe.
- (iii)* Nuclear power in the UK.

C Oil Refining and Petro-Chemicals

- (i)* An example of an oil based industry in the West Midlands.
- (ii)* Study of a UK oil terminal.
- (iii)* Oil exploitation either in the UK or abroad.

D Land Reclamation

- (i)* From industrial wasteland in the West Midlands.
- (ii)* From the sea.
- (iii)* From a desert region.

E Intensive Farming

- (i)* Fruit and vegetable production in the West Midlands.
- (ii)* Wheat growing in East Anglia.
- (iii)* Rice growing in South East Asia.

F Water Supply

- (i)* Local sources of supply.
- (ii)* Siting of Reservoirs in the UK.
- (iii)* Irrigation in a third world country.

G Land Use for Leisure

- (i)* Development and planning of local leisure facilities.
- (ii)* National Parks in the UK.
- (iii)* Either National Parks in North America or Wildlife Parks in Africa.

H Twentieth Century Urban Development

- (i)* An example of urban development in the West Midlands.
- (ii)* Distribution of new towns in the UK.
- (iii)* An example of a planned settlement in a desert region.

J Population Movements

- (i)* Changes in rural population; growth and decline.
- (ii)* Internal movement of population in the UK.
- (iii)* International movements of population.

Teachers should mark each Special Study under the following headings, using the proforma provided by the Board:

- (i)* selection and recording of relevant geographical information; (10 marks)
- (ii)* interpretation of such information and conclusions as can be drawn from it; (10 marks)
- (iii)* presentation (cartographical skills and use of illustrations). (10 marks)

YORKSHIRE REGIONAL EXAMINATIONS BOARD

CERTIFICATE OF SECONDARY EDUCATION EXAMINATIONS 1982

GEOGRAPHY B

INTRODUCTION

The three themes from the Schools Council Curriculum Development Project "Geography for the Young School Leaver", namely "Man, Land and Leisure", "Cities and People" and "People, Place and Work" comprise the syllabus. It has been designed as an "ideas-based" rather than a "content-based" course.

OBJECTIVES OF THE EXAMINATION

The examination will assess the candidates' ability

1. to recall, understand and apply the key ideas outlined in the syllabus,
2. to interpret geographical information from source material of all kinds.

SCHEME OF ASSESSMENT

The Scheme of Assessment will consist of a Regional and a School Assessment in both of which marks will be awarded to the abilities in approximately the following proportions:

recalling 30%
interpreting, understanding and applying 70%

The Regional Assessment will consist of one written paper of two and a half hours plus fifteen minutes' reading time.

The candidates may be supplied with and required to use source material of any kind, e.g. tables, diagrams, charts, statistics, photographs, maps, and the written word.

The paper will be divided into

SECTION A Candidates will be required to attempt all the questions for which a total of 60 marks will be allocated. The questions, which will be of the structured type, will embrace all three themes and will include the use of a 1:50 000 or 1:25 000 Ordnance Survey map extract. A hand lens, opisometer, geometrical instruments, cotton, and a key to the conventional signs may be used in the examination.

SECTION B Man, Land and Leisure.

SECTION C Cities and People.

SECTION D People, Place and Work.

Three questions of the structured type will be set in each of the Sections B, C and D. Candidates will be required to attempt four questions — one from Section B, one from Section C, one from Section D and one other. A total of 15 marks will be allocated to each question.

The School Assessment will be made of work done during the five full terms prior to the examination unless, in a particular school, the course lasts for less than five terms in which case the assessment will be made of work done during the entire period of the course. It will be an assessment of the abilities listed in the Objectives and it is emphasised that the weightings which will be attached to these abilities are those given above.

The attention of teachers is drawn to the Board's "Guide to Teachers, No.4: School Assessments (3rd Edition)".

Geography

The syllabuses available are:

ORDINARY LEVEL

Geography Syllabus A Subject number **209**

Geography Syllabus B Subject number **210**

These subjects may not be taken by candidates taking Geography at the Alternative Ordinary level.

ALTERNATIVE ORDINARY LEVEL

Geography Subject number **821**

This subject may be taken at the June examination only. It may not be taken by candidates taking Geography (Syllabuses A and B) at the Ordinary level or Geography at the Advanced level.

ADVANCED LEVEL

Geography Subject number **210**

This subject may not be taken by candidates taking Geography at the Alternative Ordinary level.

ORDINARY LEVEL

Geography – Syllabus A 209

Aims

The syllabus aims to provide a topic and systematic approach to the fundamental concepts of geography, while offering the maximum possible choice to teachers in the illustrations of these concepts. At the same time, the syllabus provides the possibility of work involving study of the problems of the countries of the less developed world and of their scope for modern development.

The Examination

The examination will consist of two papers, Paper 1 of 2 hours and Paper 2 of 2½ hours. Paper 1 will carry 40% and Paper 2 60% of the total marks for the examination.

Temperatures will be expressed in degrees Celsius (°C) on the question papers. Candidates may give temperatures in either Celsius or Fahrenheit (°F) when answering questions. All units on the question papers will be given in metric form only, except for those questions which refer to map extracts for which imperial units are used. Candidates may use either metric or imperial units in their answers. Ordnance Survey maps on the scale of 1:50 000 used in the examination will be taken from the First or Second Series. All Ordnance Survey maps are available to candidates.

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Paper 1. Syllabus Areas (a), (b), (c) and (d)

Candidates will be required to answer *three* questions, including one compulsory question on an Ordnance Survey map extract. The remaining questions will be set on syllabus areas (a), (b), (c) and (d) and on fieldwork in both rural and urban areas. The rubric will state that the field work questions should be attempted only by those candidates who have carried out a course of field study. The paper will be so arranged that candidates will be able to select questions *either* on syllabus areas (a), (b), (c) and (d), *or* on fieldwork *or* on a combination of the two. Not less than five questions on syllabus areas (a), (b), (c) and (d), and not less than two questions on fieldwork will be set in any examination. All of the syllabus areas (a), (b), (c) and (d) will be covered in any examination.

Paper 2. Syllabus Areas (e), (f), (g), (h) and (i)

The paper will be divided into two Sections, Section I—The Developed World and Section II—The Less Developed World, as defined below.

SECTION I—The Developed World

- A. British Isles and Western Europe (France, West Germany, Belgium, the Netherlands, Luxembourg, Switzerland, Italy, Norway, Sweden, Denmark, Finland, Spain and Portugal).
- B. North America (U.S.A. and Canada).
- C. Australia, New Zealand and Japan.
- D. U.S.S.R. and the rest of Europe.

SECTION II—The Less Developed World

- E. Africa and the Middle East (Israel, Jordan, Syria, Lebanon, Saudi Arabia, Iraq, Turkey, Iran).
- F. Central and South America (including Mexico and the Caribbean islands).
- G. South and South-East Asia (Burma, Thailand, Vietnam, Hong Kong, Singapore, Malaysia, Indonesia, India, Sri Lanka, Pakistan, Bangla Desh).
- H. China.

Candidates will be required to answer *four* questions, choosing at least *one* from each Section. Five questions will be set on each of the Sections I and II, and in any examination all of the syllabus areas (e), (f), (g), (h) and (i) will be covered.

Candidates may restrict, if they so wish, their choice of examples to one of the regions A–D in Section I and to one of the regions E–H in Section II. The questions set within each Section may, however, be answered with examples taken from any of the regions listed within that Section. Questions contrasting topics in regions in Section I with those in Section II may be set.

Syllabus

Candidates should be familiar with the following syllabus areas:

- (a) The earth as a planet in relation to the sun; latitude, longitude and time.
- (b) The origin and nature of landforms: the influence of geology on landforms including the scenery associated with the most common rock types, folding and faulting, scarplands and volcanic landforms, weathering, erosion, transportation and deposition by rivers, glaciers, the sea and the ice.

(e) The origin and nature of the major world climates, including the chief surface movements in ocean waters and their influence; elementary weather study.

(f) The nature and distribution of vegetation and soil zones.

(g) The factors affecting the following types of agriculture: stock rearing; extensive and intensive crop cultivation; subsistence; plantation. Problems affecting tropical agriculture. The factors affecting the following other types of primary industry: forestry; fishing; mining; the major sources of power.

(h) The factors affecting the location and development of secondary and tertiary industries. Iron and steel; chemicals, including petro-chemicals; textiles; motor vehicles; shipbuilding, modern light industries. Tertiary industries. In particular reference to employment structure and population distribution. Reasons for lack of industrial development in underdeveloped lands.

(i) The factors affecting

(i) the nature and distribution of settlements, including rural settlement patterns; urban morphology and functions; conurbations and capital cities; urban hierarchies;

(ii) the distribution of population.

(j) The factors affecting the development of transport systems and the use of routes; patterns of trade, trade blocs and the effects of government action.

(k) The interrelationship between man and his environment: the problems of resource management and conservation; river control and land drainage; irrigation, multi-purpose river development; land reclamation; exhaustion of natural resources; soil erosion and conservation; air and water pollution; National Parks; urban problems.

Candidates should be familiar with syllabus areas (a) to (d) on a broad scale on a world basis and with (e) to (j) with reference to specific examples, bearing in mind where appropriate the contrasts between the developed and the less developed parts of the world.

Candidates will be expected to have knowledge of the following skills and techniques:

The ability to interpret Ordnance Survey maps on the scales of 1:50 000 and 1:25 000.

The ability to study and interpret data, whether presented in statistical form, in maps or diagrams, in photographs or in written passages; where appropriate, this ability might be used in conjunction with the interpretation of O.S. maps and weather maps.

The ability to illustrate answers with simple sketch-maps and diagrams.

The ability to carry out elementary fieldwork in both rural and urban areas, including weather study.

Notes for the guidance of teachers are available on application to the Secretary. A stamped addressed envelope (10" x 8") should be enclosed.

Geography - Syllabus B 210

Aims

It is assumed that the secondary school course will involve a progressive development of the subject, including the major activities and occupations of man in relation to his geographical environment in varied continental and regional settings. The ability to handle geographical information in the form of maps, photographs, diagrams, simple statistics and observations made in the field, developed during the early years of the school course, should provide the basis for the more detailed work specified below.

It is intended that the syllabus should enable the general principles to be taught progressively throughout the secondary school course to be integrated into the examination work.

The Examination

The examination will consist of two papers, Paper 1 of 2½ hours and either Paper 2 or Paper 3, each of 1½ hours. Paper 1 will carry 60% and Paper 2 or Paper 3 40% of the total marks for the examination.

Paper 1

A written paper of essay-type questions set on the full syllabus as given below. Candidates must answer five questions, three selected from Section A, including the compulsory Ordnance Survey map question, and two from either Section B or Section C. Candidates should have studied an area of which they can gain first-hand knowledge, and opportunity may be given for such knowledge to be shown in the examination.

Questions will be set on the physical and human geography of the British Isles and either Western Europe or North America as detailed below.

Section A The British Isles, including map reading and interpretation with special attention to Ordnance Survey maps on scales of 1:50 000 and 1:25 000.

Section B Western Europe (France, Belgium, Luxembourg, the Netherlands, the Federal Republic of Germany, Switzerland, Italy, Denmark, Norway and Sweden).

Section C North America (Canada, U.S.A. and Mexico).

EITHER Paper 2

An objective test of eighty multiple-choice questions set on the physical and human geography of the British Isles and Western Europe (countries as specified above for Paper 1). Questions will not be set specifically on candidates' fieldwork.

OR Paper 3

An objective test of eighty multiple-choice questions set on the physical and human geography of the British Isles and North America (as specified for Paper 1). Questions will not be set specifically on candidates' fieldwork.

Candidates will be permitted to use a ruler (graduated in millimetres) in the multiple-choice test.

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Temperatures will be expressed in degrees Celsius ($^{\circ}\text{C}$) on the question papers. Candidates may give temperatures in either Celsius or Fahrenheit ($^{\circ}\text{F}$) when answering questions. All units on the question papers will be given in metric form only, except for those questions which refer to map extracts for which imperial units are used. Candidates may use either metric or imperial units in their answers. Ordnance Survey maps on the scale of 1:50 000 used in the examination will be taken from the First or Second Series. All Ordnance Survey maps will be provided with a key to conventional signs.

Syllabus

The physical and human geography of the regions specified above, to include the following topics:

1. The Earth in relation to the Sun; latitude, longitude and time.
2. Landforms resulting from folding, faulting, intrusive and extrusive vulcanicity.
3. The general characteristics of the common rocks. Weathering.
4. The work of rivers: erosion, transportation and deposition.
5. The work of ice in both highland and lowland regions.
6. The work of the sea; the major types of coast.
7. Elementary weather study based on local observations and weather maps.
8. Climate: elements; chief factors, annual and seasonal factors.
9. Vegetation: characteristics and distribution, and the factors influencing them.
10. The location and utilisation of the important mineral resources and of the major sources of power.
11. Major agricultural and industrial activities.
12. Population and settlement.
13. The principal means of transport.

A booklet for teachers giving general information on multiple-choice objective tests and specimen Papers 2 and 3 may be purchased from the Publications Office.

ALTERNATIVE ORDINARY LEVEL (June examination only)

Geography 821

Aims

The syllabus aims to provide for the candidate of a maturity one year beyond the Ordinary level a framework for the deeper study of selected aspects of geography including, if desired, aspects particularly relevant to the local area. The requirement of a submitted project gives opportunity for individual research and fieldwork and for the application, in the presentation of the project, of varied techniques of geographical representation.

The Examination

The examination will consist of one written paper, which carries 75% of the total marks, and a teacher assessed project, which carries 25% of the total marks for the

THE ASSOCIATED EXAMINING BOARD
for the General Certificate of Education

GEOGRAPHY ORDINARY LEVEL

SYLLABUS – from 1981

NOTES FOR GUIDANCE ON TEACHING THE SYLLABUS

SUGGESTED BOOKS

1

GEOGRAPHY

SYLLABUS – ORDINARY LEVEL

The aim of the examination is to test candidates' basic understanding of the skills and fundamental concepts of geography, in accordance with the current movements towards studies based more on the conceptual framework rather than on purely factual information.

Scheme of Examination

Paper 1	British Isles – 1 hour	} to be taken on same day
Paper 2	Ordnance Survey Map Interpretation – $\frac{3}{4}$ hour	
Paper 3	World problems and Area studies – 2 $\frac{1}{4}$ hours (including reading time)	

Paper 1 The British Isles

Questions will include the interpretation of maps, simple sections, photographs, statistics, statistical maps and diagrams. Specific examples are to be chosen only from the seven area studies listed below.

Systematic

A. Physical

1. British weather and climate including an elementary study of weather maps.
2. Physical landscapes associated with chalk, limestone and granite.
3. Processes and results of
 - i) weathering,
 - ii) river action,
 - iii) glaciation,
 - iv) marine erosion and deposition.

B. Primary Industries

1. Fishing.
2. Extractive industries – coal, kaolin, limestone/chalk, natural gas and oil, including the resources of the continental shelf
3. Water supply.
4. Electricity generation.

Appendix D9

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5. Agriculture:
- i) dairying,
 - ii) large scale cereal cultivation,
 - iii) market gardening,
 - iv) hill farming.

C. Manufacturing Industry

(Special reference to recent developments in the last two decades)

1. Iron and steel.
2. Oil refining.
3. Chemicals (including petro-chemicals).
4. Vehicle assembly.
5. Cotton textiles and artificial fibres.
6. Shipbuilding
7. Cement.

D. Transport and Communications

1. Motorways.
2. Rationalisation of railways.
3. Recent developments in seaports and shipping.
4. Location of London's airports.

E. Growth of Urban Centres

1. Conurbations.
2. Dormitory towns.
3. New Towns.
4. Regional centres.
5. Resorts.

Studies of Specific Areas

Detailed studies will be carried out in selected areas to illustrate the inter-relationships of geographical factors, both man-land and man-man. These areas should provide case studies for the systematic aspects of British geography but the total geography of each area should be studied.

1. The London Basin as defined by the Chalk scarps of the Chilterns and the North Downs.
2. The mainland of Scotland, north of the Highland Boundary Fault.

4. East Anglia including the Chalk escarpment, and the Fens.
5. South-west England (Cornwall, Devon, Somerset, and West Dorset. Bristol (Avon) is not included.)
6. The Lake District National Park.
7. South Lancashire and North Cheshire.

The boundaries of these areas (for the purpose of the examination) are shown on the map on page 4

A proportion of the above areas will be changed at regular intervals; at least two years' notice will be given of these changes.

Paper 2 Map Interpretation

This paper will consist of a map interpretation test, which will be set on an Ordnance Survey map extract on one of the following scales: 1:25 000; 1:50 000.

1. Scales, distances, bearings, map symbols and the use of the National Grid.
2. Interpretation of the information shown on the map extract such as:
 - (a) landforms and coastal features;
 - (b) natural vegetation;
 - (c) man-made features such as roads, railways, canals, buildings, settlements;
 - (d) the significance of the spatial relationships between natural and man-made features, e.g. routes followed by railways, town sites;
 - (e) the evidence of human occupations and relative densities of population.
3. The interpretation of physical and human features and the comparison between a photograph and a map of the same area.

Paper 3 World Problems and Area Studies

Candidates are expected to develop skills in interpreting ground and aerial photographs, simple statistics, and statistical maps and diagrams.

SECTION A World Problems

Examples may be drawn from any part of the world including the British Isles, Western Europe and North America.

1. *Problems of population growth* including the basic factors affecting the distribution and density of population; the nature of population



Map to show areas 1 to 7, as defined on pages 2 and 3.

- growth and related pressures to world resources; problems of the Developing Countries; methods of increasing world food output.
2. *Problems of water resources* including water as a resource; the factors affecting supply; water supply for domestic and industrial use; hydro-electric power; integrated water control schemes; irrigation.
 3. *Problems of tropical agriculture* including inefficient methods, soil erosion; over-grazing; climatic hazards; pests and diseases; transport and trade.
 4. *Problems of the environment* including air, water and noise pollution; industrial waste; urban sprawl and urban renewal; tourist pollution; soil erosion and conservation; coastal conservation; green belts; national parks and regional planning.

SECTION B *Field Studies*

Field studies should include map work and the compilation and co-ordination of records in the form of maps, diagrams, field sketches, graphs and tables, with written explanations where necessary.

The subject matter covered could include a selection of the following depending on the area studied. This should not exceed 250 square kilometres.

1. Area and boundaries of the district studied, and its position in relation to the country as a whole.
2. Relief and drainage, including first-hand study of rock outcrops, rivers and stream courses, and coastal features.
3. Weather observations and features of the climate of the field-study area.
4. Soils, vegetation and land utilisation; crop systems; farm animals.
5. Building materials used locally and their sources.
6. Distribution of buildings used for particular purposes, e.g. places of worship, shops, filling stations, etc.
7. Local manufacturing industries; products; raw materials used and their sources; power supplies.
8. Markets; transport and communications.
9. Public utilities, e.g. water, electricity, gas.
10. Elementary historical geography of the area, including place names.

Two questions will always be set in this optional section. Candidates may choose either ONE or BOTH of these questions. One question will test field-work techniques and the other the results of candidates' fieldwork. In setting these questions, consideration will be taken of the fact that fieldwork may be undertaken in either rural or urban areas.

SECTION C Area Studies

Either Western Europe or North America

Western Europe: Denmark, France, Italy, the Netherlands, Norway, Switzerland and West Germany (Federal Republic)

North America: The United States of America, Canada and Mexico.

Systematic

1. Physical

- i) The main features of climate and natural vegetation.
- ii) The land forms associated with
 - (a) folding;
 - (b) faulting;
 - (c) vulcanicity.
- iii) The processes and landforms associated with
 - (a) weathering;
 - (b) fluvial activity;
 - (c) glaciation;
 - (d) marine erosion and deposition.

2. Primary Industry

- i) Fishing
- ii) Coal, oil, natural gas.
- iii) Hydro-electric power.

The topics listed above will cover the whole of the respective areas (i.e. Western Europe and North America) on broad systematic lines and specific examples, where appropriate, will be taken from the particular regions listed below.

Studies of Specific Areas

Western Europe

Denmark; Netherlands; North Rhine/Westphalia industrial area; Norway; Paris Basin (excluding Lorraine and Northern Coalfield); Italy south of Rome; Rhine Gorge and Rift valley; Rhône-Saône valley; Switzerland.

North America

British Columbia; California; the Canadian Prairies; the Corn Belt; Florida; Lakes Peninsula and St. Lawrence lowland; Mexican Plateau; New England and New York urban area; N.E. Industrial area of U.S.A.

It is assumed that the total geography of each area will be studied.

Paper 1 *The British Isles* - 1 hour

This paper will consist of an objective test of 60 items.

Paper 2 *Map Interpretation* - $\frac{3}{4}$ hour

This paper will consist of a single compulsory question.

Paper 3 *World Problems and Area Studies* - $2\frac{1}{4}$ hours

This paper will consist of *three* sections. Candidates will be required to answer *four* questions, with at least one question from Section A and at least one question from Section C.

NOTES FOR GUIDANCE

1. Notes on the Syllabus and Examination

Further information on the syllabus and examination is available in booklet form on request from the Board's Publications Department.

2. Notes on the Rubric

The four questions on paper 3 may be selected in any of the following combinations:

Section A	Section B	Section C	TOTAL
World Problems	Field Studies	Area Studies	
1	0	3	4
1	2	1	4
1	1	2	4
2	1	1	4
2	0	2	4
3	0	1	4

3. Notes on Map Interpretation

(a) In addition to the Ordnance Survey map extract, the examiners may provide a skeleton map of the Ordnance map excerpt showing, for example, a section of a coastline (high tide), drainage features, settlements, a particular contour line or any feature to which it may be desired to draw attention. Instead of a skeleton map a cross section could be supplied.

(b) Candidates will be required to insert on the map or section whatever is required by the examiners to show that Ordnance Survey symbols are understood, e.g. routes of whatever kind may be designated, land over or under a certain height, natural physical features such as cliffs, steep slopes, various landforms, buildings, settlements, etc.

(c) Questions will be set to test application of the principles set out in the syllabus. These will include the relation of landforms to processes of erosion and deposition, and the modification of natural features by man. Candidates may be asked to interpret photographs in terms of the map or vice versa.

4. Notes on Field Studies

(a) The main purposes of field studies should be:

- i) to acquire the habit of accurate observation and, where necessary, to become trained in the use of simple instruments needed for such observations;
- ii) to recognise those facts which are of geographical significance, and to learn methods of recording them by means of pictures, maps, graphs and tables in addition to normal description;
- iii) to use such observations and records to build up a knowledge of the associations of facts which form the geography of the selected region;
- iv) to develop the ability to use this geography for the purpose of envisaging, at least in part, the geographical facts of other regions.

(b) Where possible there should be fieldwork throughout the whole of the course preceding the examination. An exhaustive treatment is not practicable at this stage nor in the time likely to be available, but the student should have a broad knowledge of the physical environment and its main features together with a more detailed knowledge of two or three aspects of local importance.

(c) The area or areas to be studied should where practicable include the school district or an area around the home of the candidate, or the student may be encouraged to carry out a study of another small area during a school journey or vacation and compare and contrast it with his or her home area.

(d) The purpose of the examination is to assess the value of the record made by the candidate, to test his or her knowledge of the geography of a locality and the ability to reach general conclusions from the associations of facts thus mastered.

(e) The examiners reserve the right to ask that original records, notebooks, etc. be submitted. This would only be done if it were deemed necessary to verify the actual fieldwork undertaken by the candidates.

5. A Note on Sample Studies

Attention is drawn to the value of sample studies in preparation for this examination. Opportunities may be given for the use of such material in answering questions.

NOTES FOR GUIDANCE ON TEACHING THE SYLLABUS

The following information is intended to give guidance to teachers of the 033 syllabus effective from 1981.

Past papers for 033/2 and 033/3 are available on request to the Board's Publications Department. Also available is a full specimen objective test paper 033/1. With effect from the June 1980 examination, the objective test examination paper will also be available after the examination from Publications Department.

Format of the examination:

Paper 1 (British Isles — Objective Test) 1 hour — 75 marks

Paper 2 (O.S. Map Interpretation) ¾ hour — 25 marks

Paper 3 (World Problems, Fieldwork and Area Studies) 2¼ hours — 100 marks

Paper 1 (British Isles — Objective Test) — 1 hour

(a) Syllabus

- i) Any attempt to cover all the areas of the British Isles must lead to repetition since the same concepts and themes constantly recur. Therefore, the total area to be covered has been considerably reduced. The comprehensive nature of the objective test method used in this paper, further reinforces the need to reduce the content of the syllabus.
- ii) In order to avoid any misunderstanding a detailed description of the syllabus is given, and the areas for study expressed in map form. The systematic geography questions in the objective test paper will be strictly limited to the topics listed A — E in the syllabus. They will be concerned with basic principles and concepts; and examples for illustration will be chosen *only* from one of the areas listed for detailed study under "Studies of Specific Areas".

For example, a question may be included which tests the student's knowledge of the main factors influencing the distribution of oil refineries in the British Isles but in a question related to the siting of a *specific* oil refinery, the example will be chosen from within one of the seven areas listed.

to avoid the duplication mentioned above. It must be stressed that a question can be asked on any aspect of the geography of these seven areas, here the teaching should not be limited to the systematic topics listed under A to E.

(v) In response to requests from schools and colleges the areas chosen for detailed study will be subject to change but at least two years' notice will be given of any alteration. Areas which will be included in the syllabus at a future date include South-east England; the Hampshire Basin; the West Midlands; the Lake District; West and South Yorkshire, Derbyshire, Nottinghamshire and Humberside; Northern Ireland. It is not intended to alter the content of the systematic sections. Every region will be examined for at least three years. The maps on pages IX to XV show the boundaries of the areas to be tested.

(b) Examination

- i) The British Isles section of the syllabus will be covered by an objective test consisting of 100 items. These items will be based on the whole of the syllabus (systematic and regional) and all questions must be answered in order to obtain maximum marks; i.e. the whole syllabus must be covered in order to obtain maximum marks.
- ii) The items will be based on various forms of stimuli which will include the interpretation of maps, diagrams, statistics, statistical maps, diagrams and photographs.
- iii) The approximate weighting of items between the different parts of the syllabus will be shown in the grid given on page III.

	1	2	3	4	5	6	7	8	9	10	11	12	13	Total %
S K I L L S														
A Factual Recall														20
B + Application Comprehension														70
C + Analysis Evaluation														10
%	5	12	10	12	5	6	10	7	7	7	7	5	7	100%

Key to Syllabus Coverage

- | | |
|---------------------------------|---|
| 1. Map Reading | 8. The Mainland of Scotland, North of the Highland Boundary Fault |
| 2. Physical | 9. South Wales |
| 3. Primary Industries | 10. East Anglia |
| 4. Manufacturing Industries | 11. South-west England |
| 5. Transport and Communications | 12. The Lake District National Park |
| 6. Growth of Urban centres | 13. South Lancashire and North Cheshire. |
| 7. The London Basin | |

- iv) Three different types of item type will be used: Direct question/Multiple Choice, Multiple Selection, and Double Statement (sometimes called Assertion/Reason).

The directions for Direct Question/Multiple Choice items will read as follows: "In this section each item consists of a question or an incomplete statement followed by five suggested answers or completions. You are to select the most appropriate answer in each case."

The directions for Multiple Selection items will read as follows: "In this section one or more of the options given may be correct. Select your answer by means of the following code:

- | | |
|---|--------------------------------------|
| A | if 1, 2 and 3 are <i>all</i> correct |
| B | if 1 and 2 <i>only</i> are correct |
| C | if 2 and 3 <i>only</i> are correct |
| D | if 1 <i>only</i> is correct |
| E | if 3 <i>only</i> is correct" |

IV

The directions for Double Statement items will read as follows: "In this section each item consists of a statement in the left-hand column and another statement in the right-hand column. Select your answer by means of the following code:

- A if both statements are true and the second is a correct explanation of the first
- B if both statements are true but the second is NOT a correct explanation of the first
- C if the first statement is true but the second is false
- D if the first statement is false but the second is true
- E if both statements are false."

In every case the candidate is asked to select the best answer and to mark the answer sheet accordingly.

v) The examination will be based approximately on the following:

Direct Question/Multiple Choice	30 items
Multiple Selection	20 items
Double Statement	10 items

i) Questions will always be grouped according to the different types of item. Questions based on a particular photograph, diagram, map, statistical diagram or set of statistics will be of the same item type.

ii) The approximate number of items testing the various skills and abilities involved will be as follows:

Items requiring simple factual recall	12
Items requiring comprehension or application	42
Items requiring analysis or evaluation	6
	60

iii) Questions will be included that are related to the interpretation of O.S. maps; for instance, items could involve the interpretation of a contour sketch map or a knowledge of O.S. conventional signs. An actual extract from an O.S. map will NOT be used in the objective test.

iv) Candidates should be informed that there is NO PENALTY for wrong answers.

v) All items used in the objective test will have been pre-tested by a representative sample of schools and colleges. Items are discarded if they do not adequately discriminate between the better and the weaker candidates. Items which prove to be too difficult on the evidence of the pre-test are also discarded.

V

Paper 2 (O.S. Map Interpretation) – ¼ hour

- i) This paper will consist of a single compulsory question and will be taken on the same day as Paper 1.
- ii) As stated on the syllabus, the questions can be based on extracts from the 1:25 000, 1:50 000 O.S. series.
- iii) In addition to the O.S. map, the examiners may provide a skeleton map of all or part of the extract, showing, for example, a section of coastline (high tide), drainage features, settlements, particular contour lines or any feature they wish to emphasise.

A cross section may also be supplied. Candidates will be required to insert on the map or section whatever is required by the examiners to show they have an understanding of Ordnance Survey map signs, e.g. routes of various kinds, land over or under a particular height, natural physical features such as cliffs and scarp slopes, buildings, settlements, etc.

- iv) Candidates may themselves be asked to draw simple sketch maps or sketch sections. A sketch section is intended to show the general shape of the surface.
- v) Questions will be set to test application of the principles set out in the syllabus. These will include the relation of landforms to processes of erosion and deposition and the modification of natural features by man, as well as the significance of the spatial relationship between natural and man-made features. Candidates may be asked to interpret photographs in terms of the map and vice versa.

Paper 3 (World Problems, Fieldwork and Area Studies) – 2¼ hours

- i) Paper 3 will consist of the traditional "essay type" question in order to achieve the balance of skills and techniques required in the complete syllabus.
- ii) In this paper questions can be set which involve the interpretation of ground and aerial photographs, simple statistics, statistical maps and diagrams.
- iii) The syllabus is deliberately planned so that teachers and candidates can vary their emphasis between the three sections offered. Candidates will be required to answer four questions, with at least one from Section A (World Problems) and at least one from Section C (Area Studies). Thus the four

questions for a paper may be selected in any one of the following combinations:

Section A World Problems	Section B Field Studies	Section C Area Studies	Total
1	0	3	4
1	1	2	4
1	2	1	4
2	1	1	4
2	0	2	4
3	0	1	4

Section A (World Problems)

- i) Candidates must answer at least one question from this section.
- ii) At least two questions will be set on each sub-section, namely
 1. Problems of population growth
 2. Problems of water resources
 3. Problems of tropical agriculture
 4. Problems of the environment.

Therefore, a minimum of eight questions will be set on this section of the paper.

- iii) Questions will be limited to those topics listed under each sub-section of the syllabus (pp.3-5)
- iv) Opportunity may be given to draw examples from any part of the world including the British Isles, Western Europe and North America.

Section B (Field Studies)

- i) This will continue to be an optional part of the syllabus.
- ii) Candidates will be allowed to choose to answer either one or two questions; one question will be related to fieldwork techniques and the other to the results derived from fieldwork undertaken by the candidate.
- iii) Questions will be so framed as to accommodate candidates who have undertaken fieldwork in *either* urban *or* rural areas.

Section C (Area Studies)

- i) Candidates must answer at least *one* question from this section.

ii) The syllabus for this section of the paper has been chosen so as to avoid repetition of the same concepts in different regional settings. Therefore, only a limited number of areas have been chosen for detailed study.

- iii) Candidates must choose to answer questions on *either* Western Europe *or* North America:

Western Europe – Denmark, France, Italy, the Netherlands, Norway, Switzerland and Western Germany (Federal Republic).

Areas for detailed study: Denmark, Netherlands, North Rhine/Westphalia industrial area, Norway, Paris Basin (excluding Lorraine and the Northern Coalfield), Italy south of Rome, Rhine Gorge and Rift Valley, Rhône-Saône valley, Switzerland (maps on pages XVII to XXI.)

North America – United States, Canada and Mexico.

Areas for detailed study: British Columbia, California, the Canadian Prairies, the Corn Belt, Florida, Lakes Peninsula and the St. Lawrence Lowland, Mexican Plateau, New England and New York, North East industrial area of the U.S.A. (maps on pages XXII to XXV).

For the purposes of this examination paper Western Europe and North America are as defined above; broad questions may be set on systematic geography on the whole of either North America or Western Europe but only from within those topics listed in the syllabus (p. 6) under 1. Physical and 2. Primary Industry.

- iv) Questions related to specific examples will be drawn only from the above lists of areas for detailed study. It should be noted that questions can be set on any aspect of the geography of the areas listed for detailed study.
- v) At least eight questions will be set on both Western Europe and North America.

Maps to show some of the Regions for particular study

Paper 1 *British Isles*

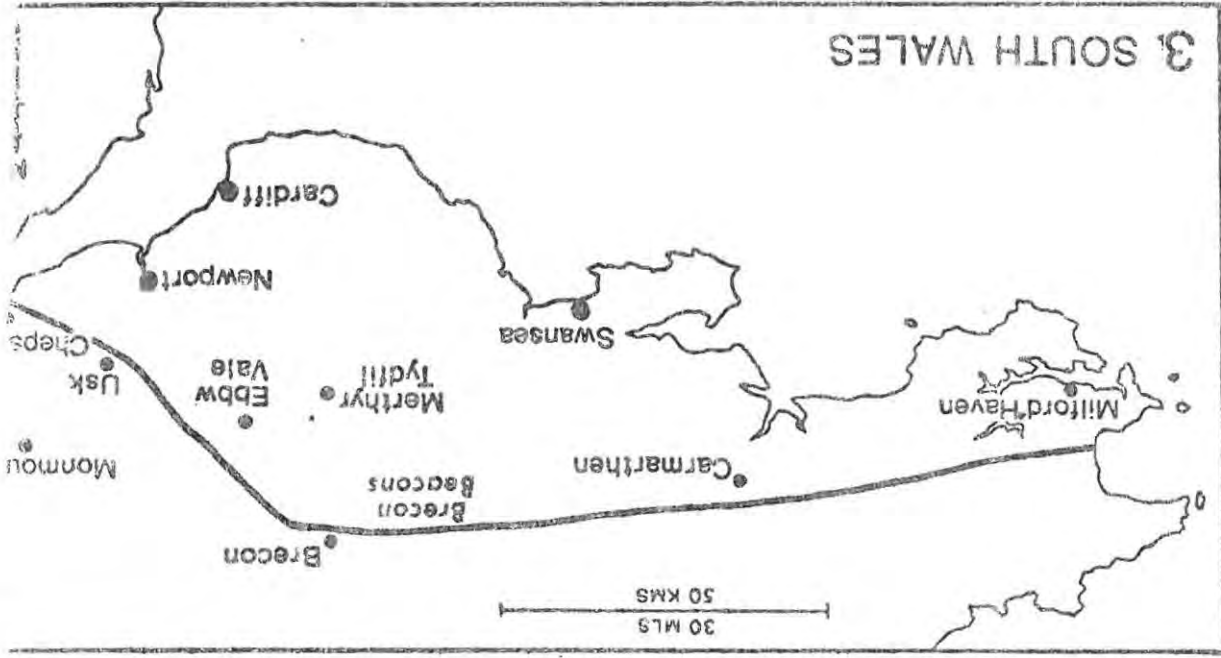
1. The London Basin as defined by the Chalk scarps of the Chilterns and the North Downs.
2. The mainland of Scotland, north of the Highland Boundary Fault.
3. South Wales.
4. East-Anglia including the Chalk escarpment and the Fens.
5. South west England (Cornwall, Devon, Somerset and west Dorset. Bristol (Avon) is not included).
6. The Lake District National Park.
7. South Lancashire and North Cheshire.

Areas listed below are to be introduced into the British Isles paper at a later date. At least two years' notice will be given of any changes regarding the introduction of any of the areas listed below.

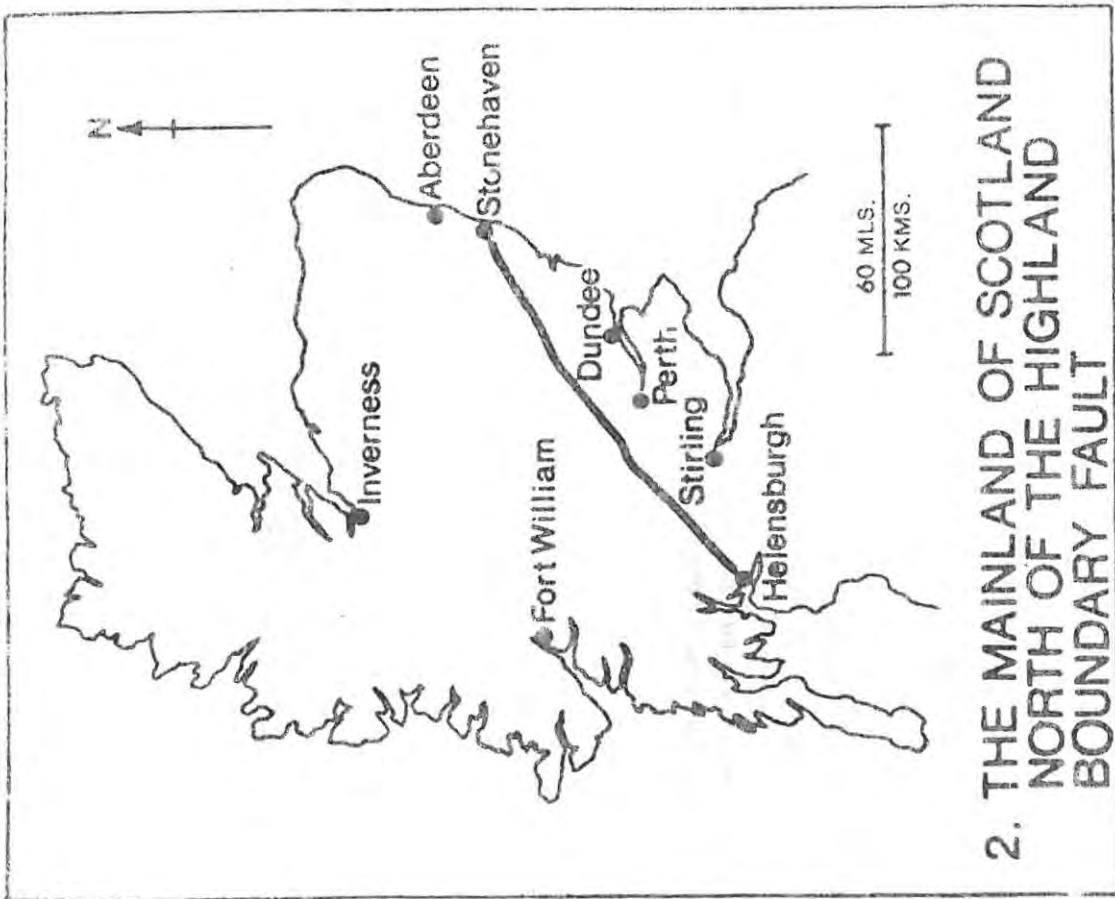
8. South-east England.
9. The Hampshire Basin.
10. The West Midlands.
11. West & South Yorkshire, Derbyshire, Nottinghamshire and Humberside.
12. Northern Ireland.

(All the maps shown on the following papers are numbered to correspond to the lists given above. Not all the areas for study are shown on the following maps, e.g. area 12 which has its own clearly defined boundaries).



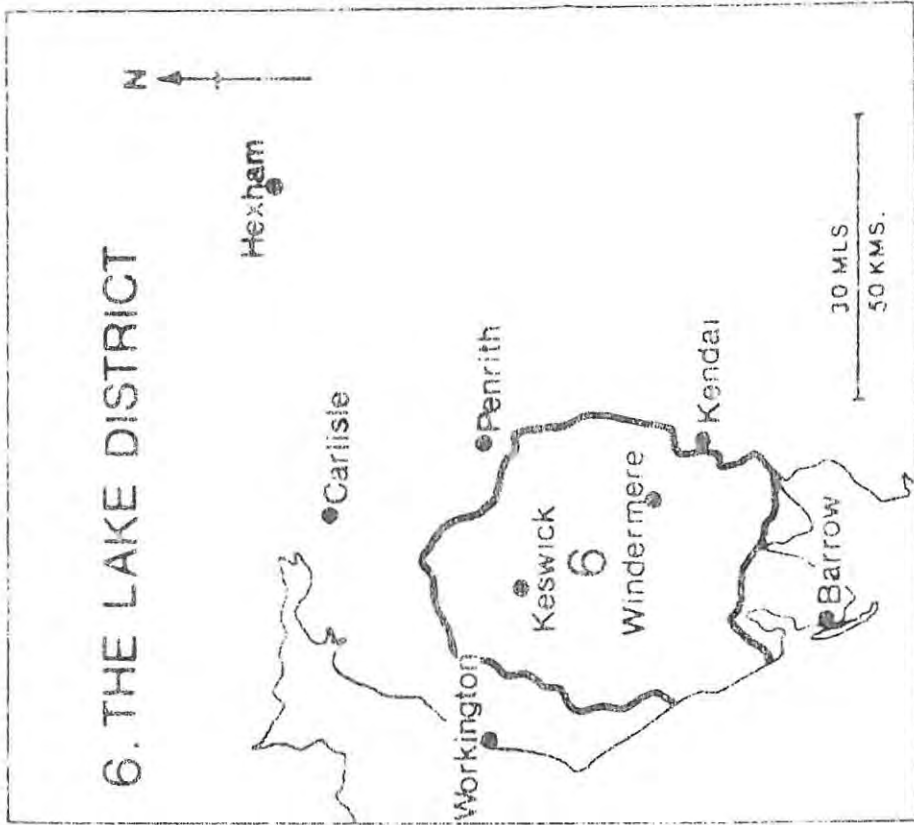


3. SOUTH WALES



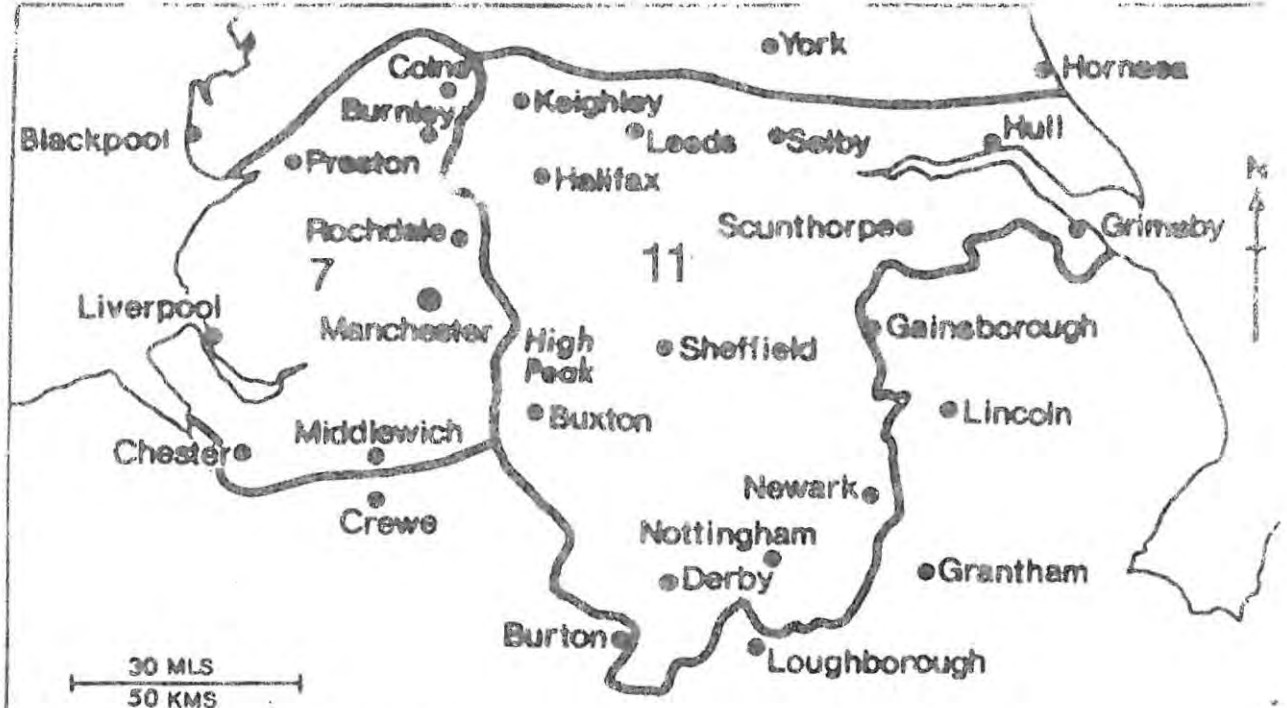
2. THE MAINLAND OF SCOTLAND NORTH OF THE HIGHLAND BOUNDARY FAULT

NII

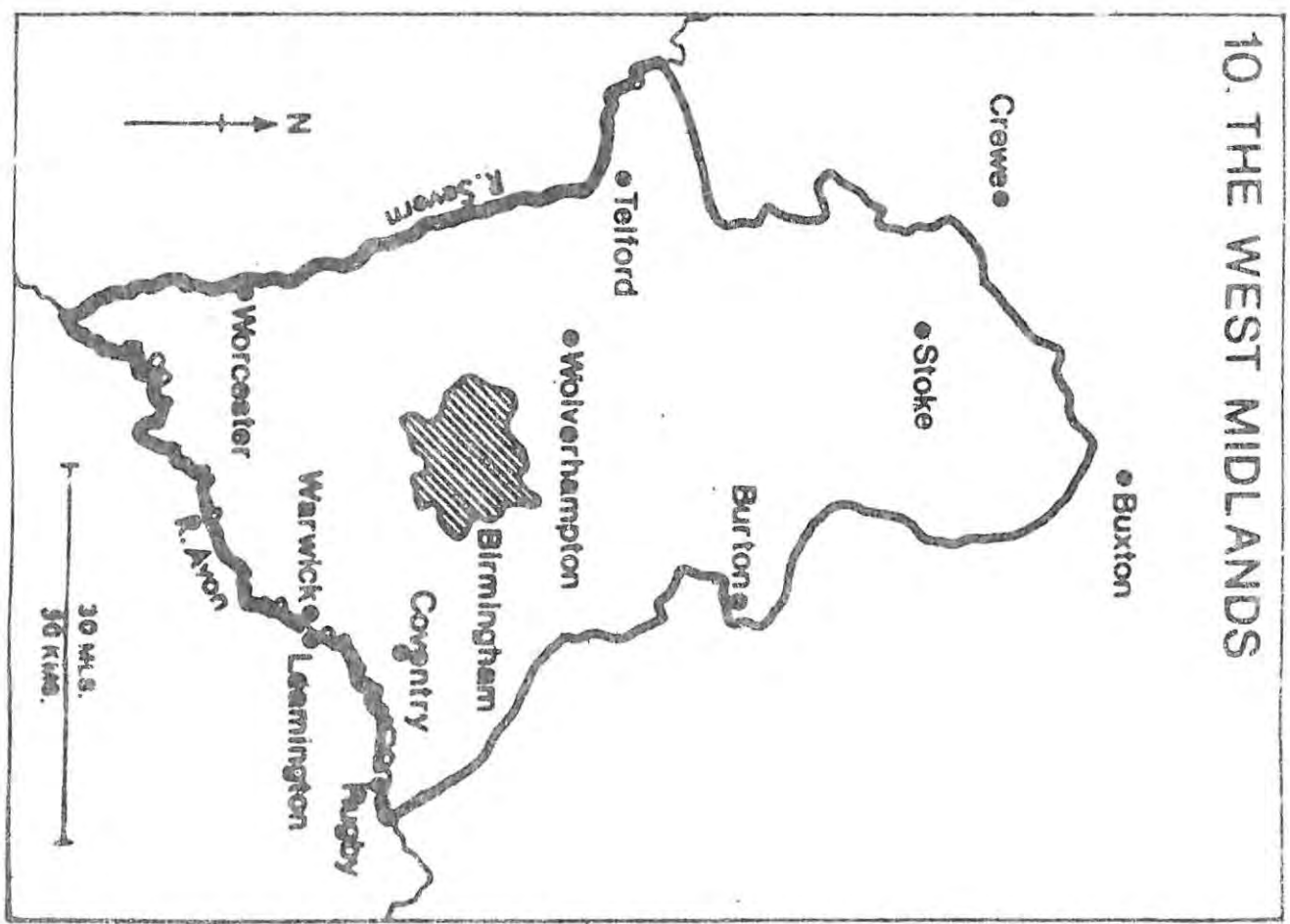


NII





7. SOUTH LANCASHIRE & NORTH CHESHIRE
 11. WEST & SOUTH YORKSHIRE, DERBYSHIRE,
 NOTTINGHAMSHIRE AND HUMBERSIDE



10. THE WEST MIDLANDS

Paper 3 Section C Area Studies

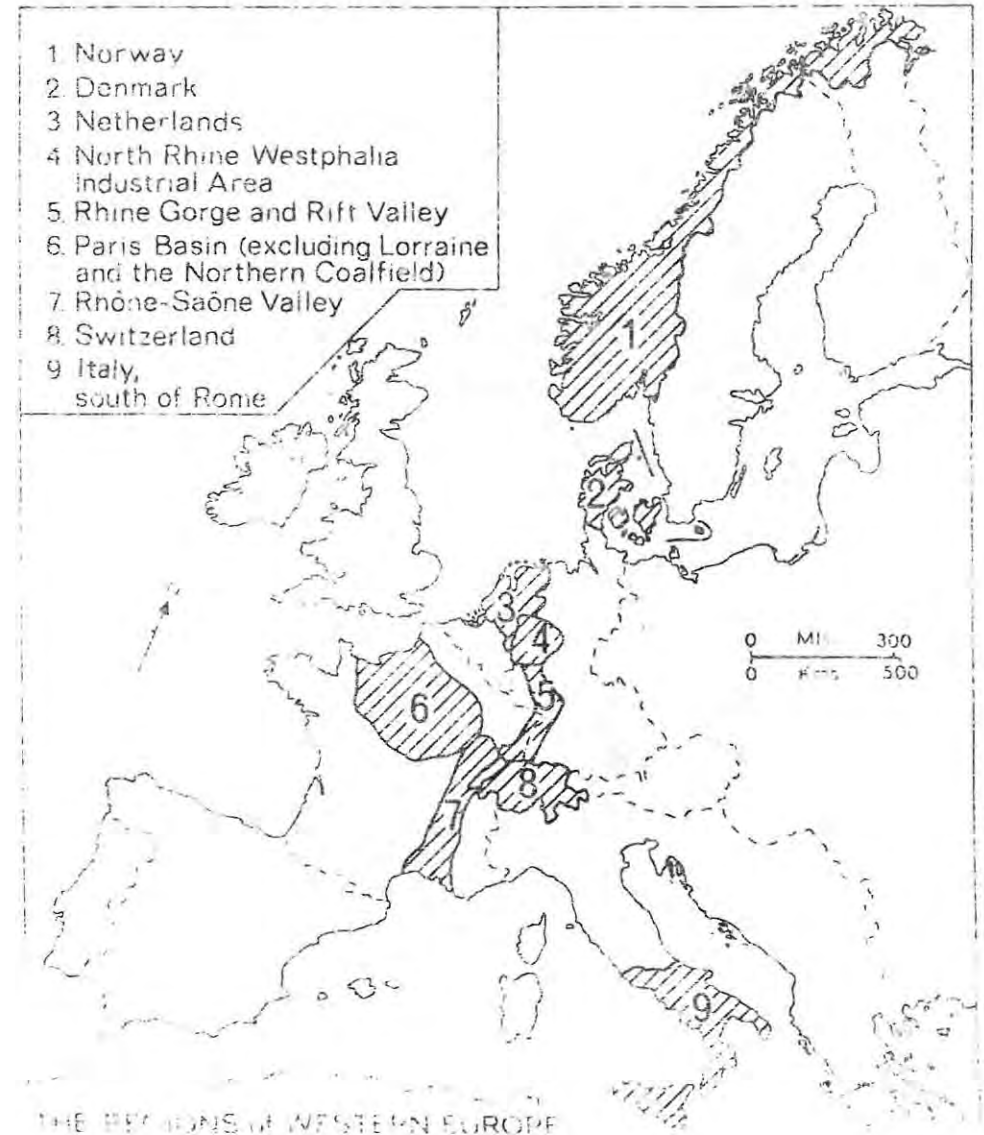
*Western Europe*A The Regions of Western Europe

1. Norway
2. Denmark
3. Netherlands
4. North Rhine/Westphalia
5. Rhine Gorge & Rift Valley
6. Paris Basin (excluding Lorraine & Northern Coalfield)
7. Rhone-Saône Valley
8. Switzerland
9. Italy, south of Rome

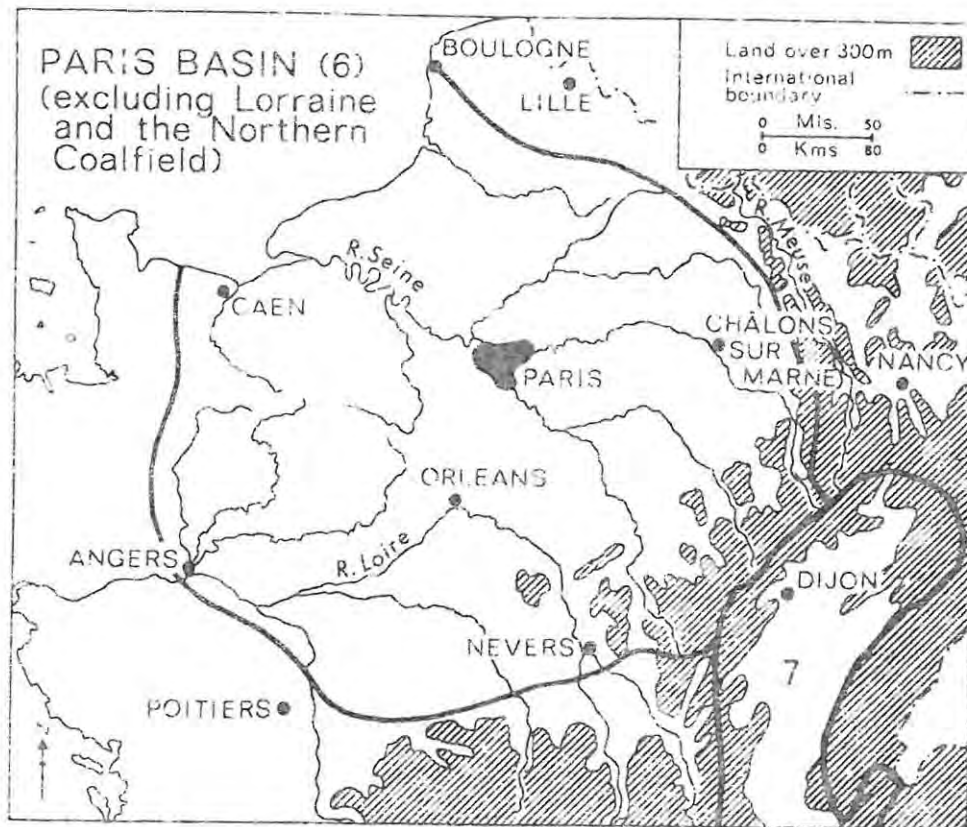
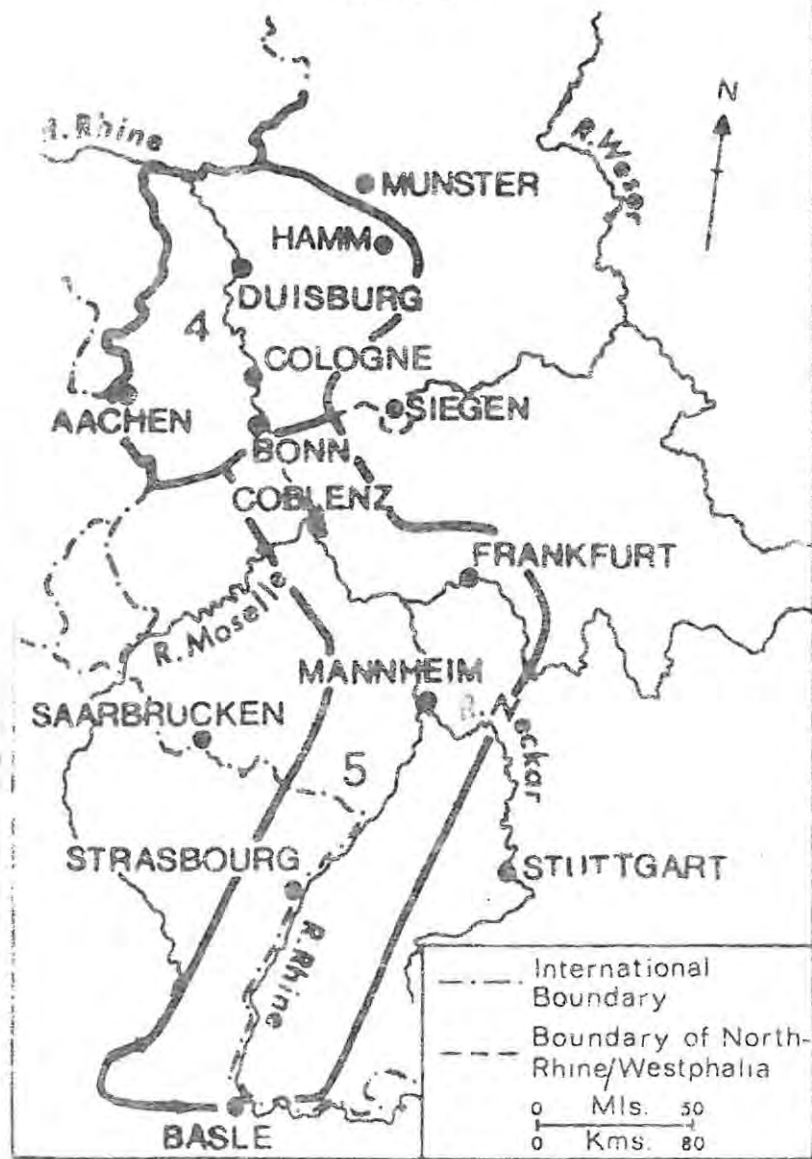
Individual maps are given of regions 4, 5, 6, 7 & 9 to show the boundaries of these regions for examination purposes.

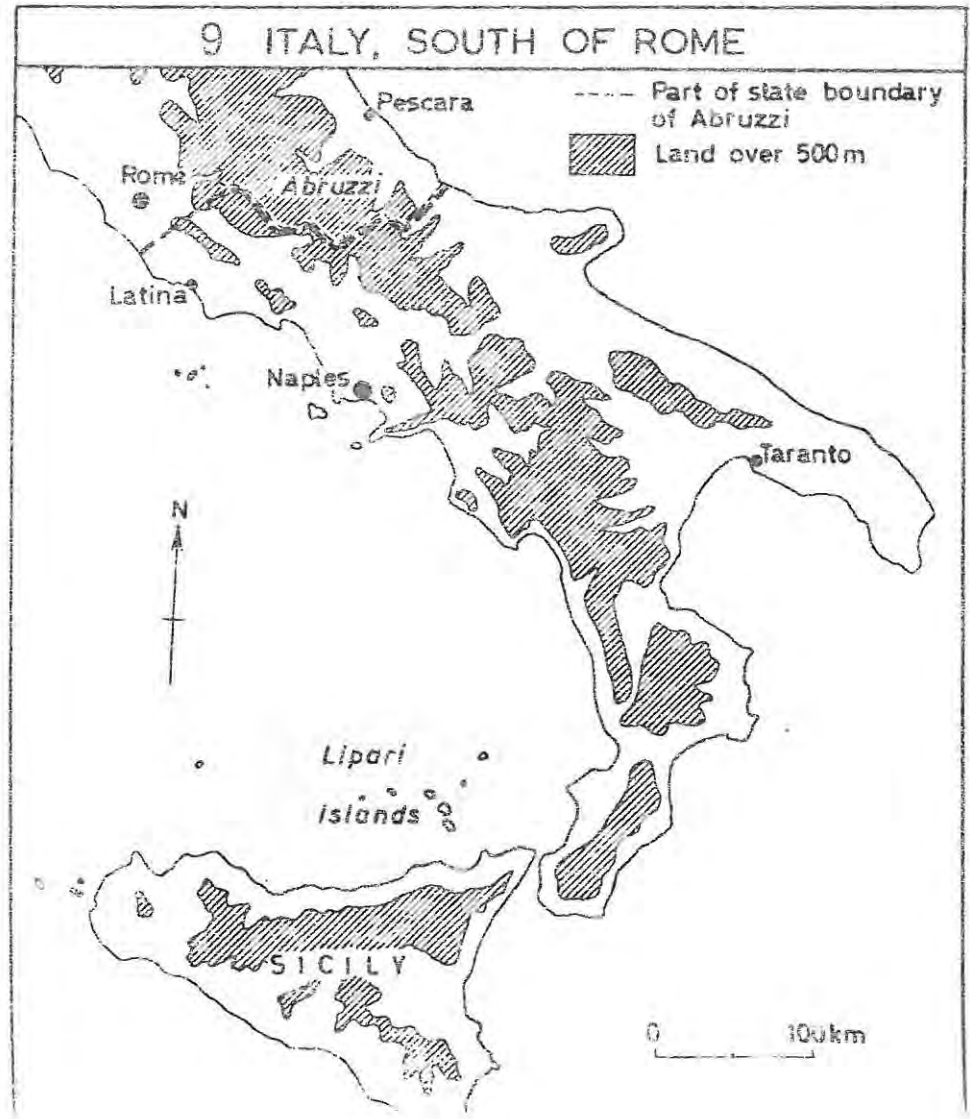
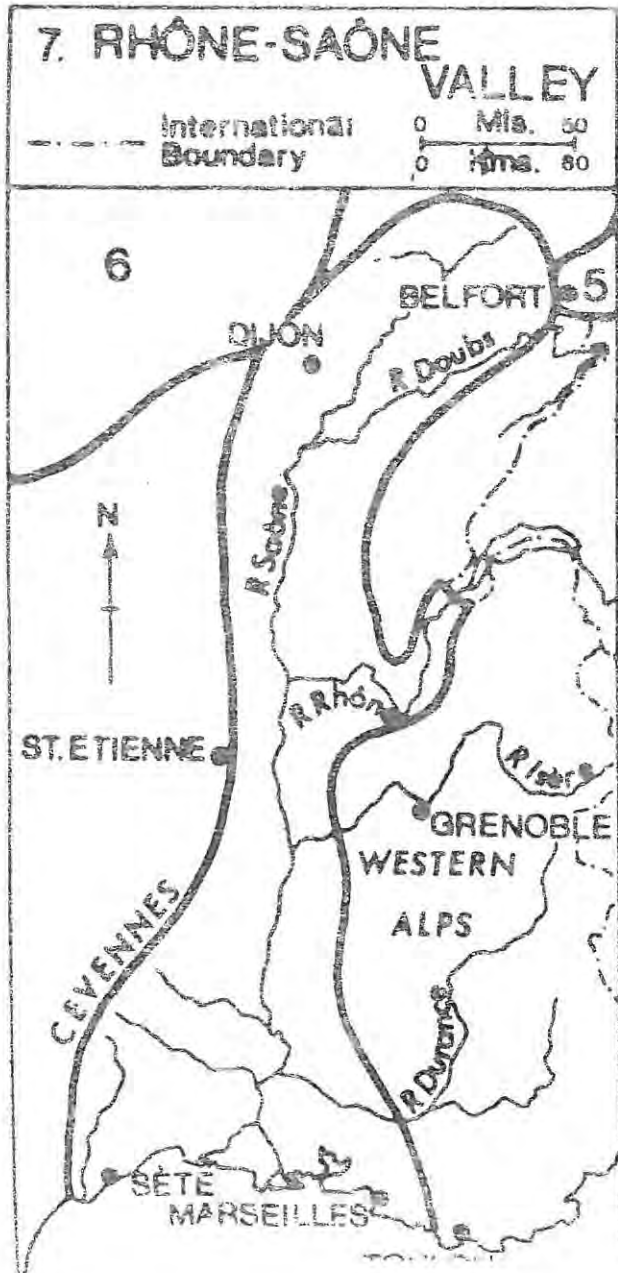
*North America*B The Regions of North America

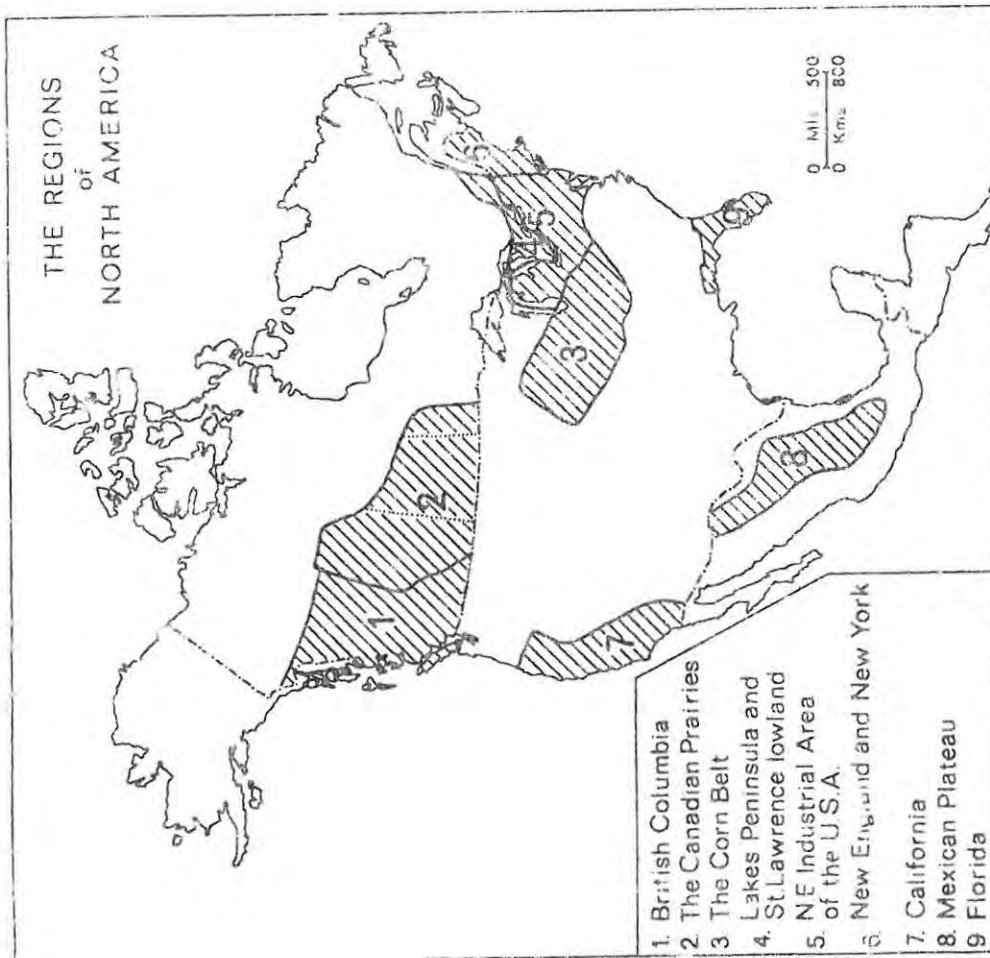
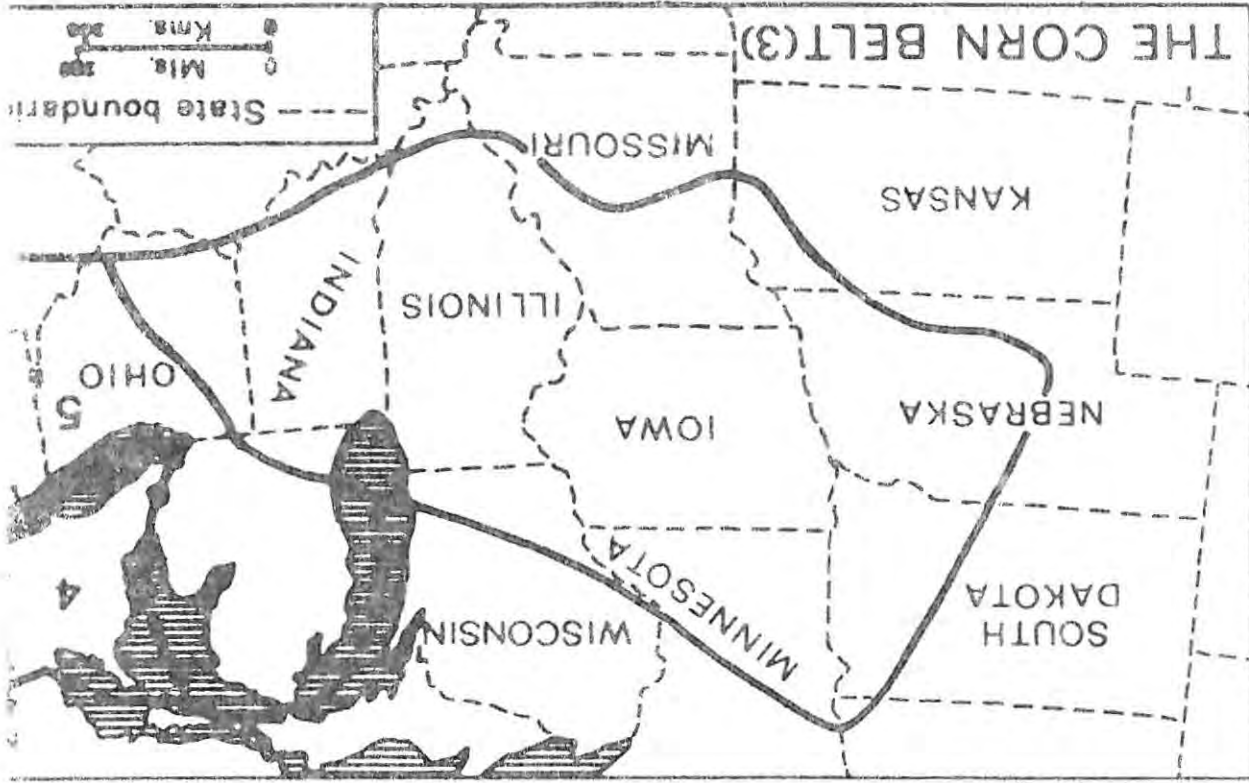
1. British Columbia
2. The Canadian Prairies
3. The Corn Belt
4. Lakes Peninsula & St. Lawrence Lowland
5. N. E. Industrial Area of the U. S. A.
6. New England and New York urban area
7. California
8. Mexican Plateau
9. Florida

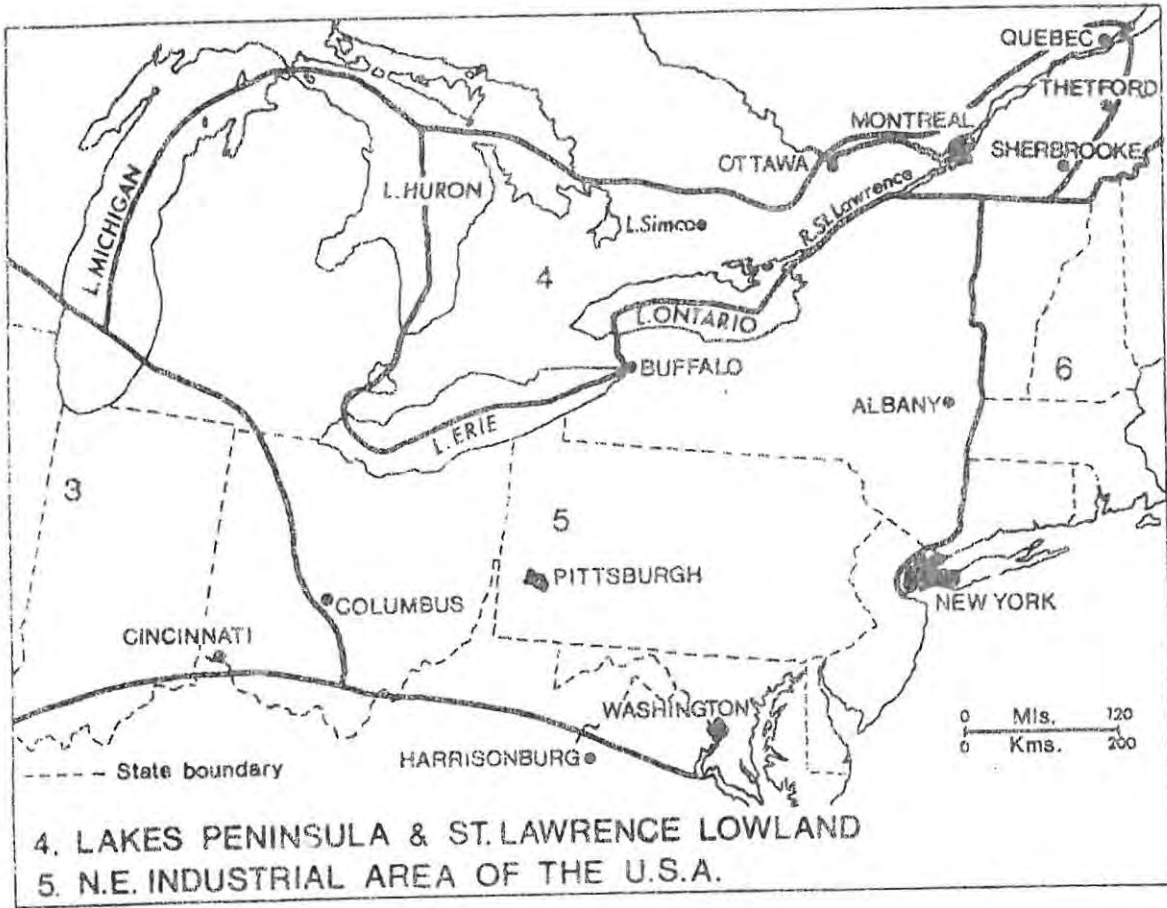


NORTH RHINE/WESTPHALIA Gorge and Rift Valley

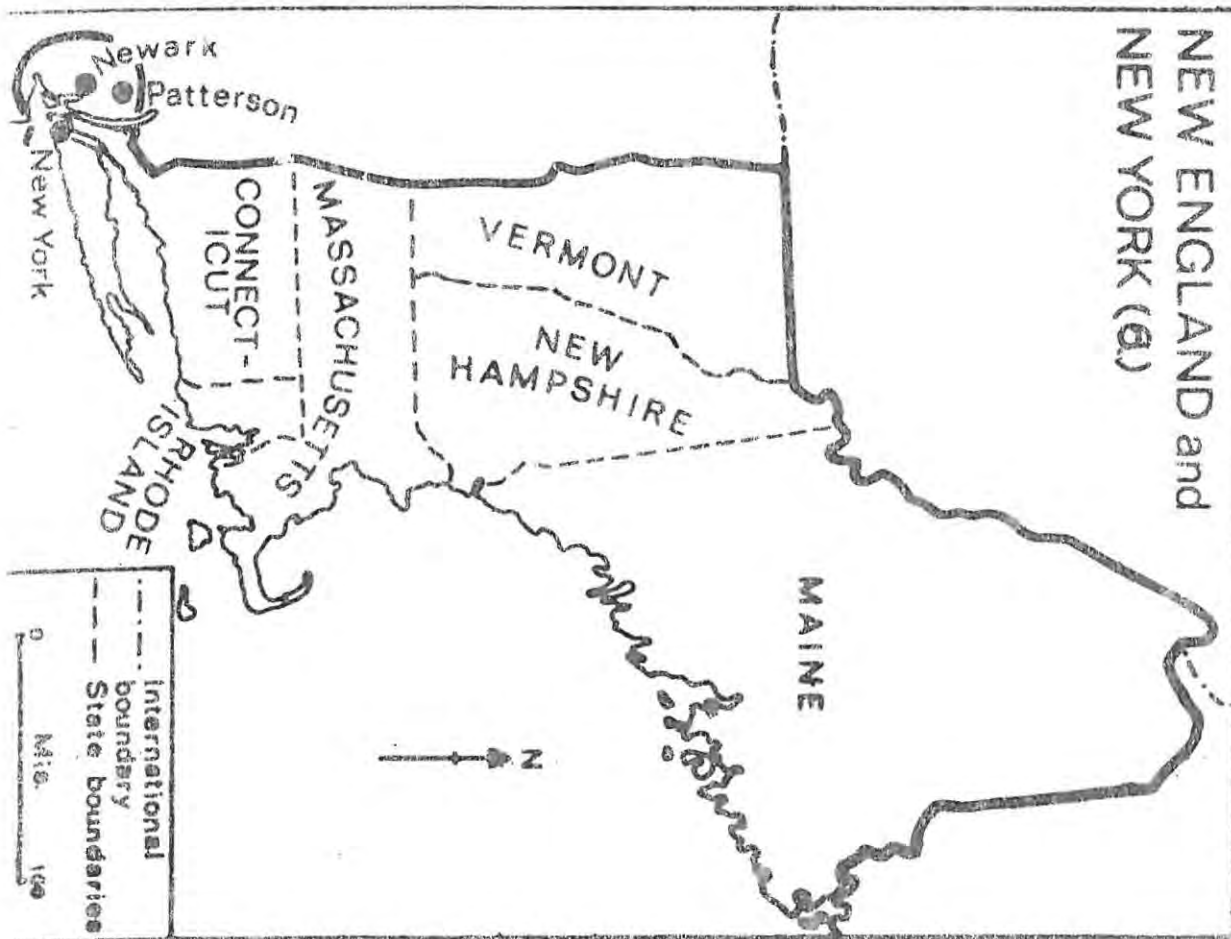








XXIV



XXV

GEOGRAPHY.

Aims.

Geography is seen as the discipline concerned with the description, analysis and explanation of the location of phenomena on the surface of the earth.

A syllabus for the senior secondary school should ideally achieve the development of an orderly framework of ideas to assist in the understanding of the immense and increasing volume of information available about the earth. It should be possible to inculcate a reasoned and objective approach to the study of the natural and cultural features of the earth's surface, to develop a sense of problem and objectivity in observation, controlled imagination in the use of evidence and the development of explanation, and a rigourousness in the testing of these explanations. It should be possible to develop critical attitudes toward geographical problems whether those of the local area, the homeland, or of other parts of the world.

Objectives.

Concepts. The major objective of the syllabus is that the student, through a study of advanced economies in mid-latitude environments will develop a clear understanding of spatial concepts. This understanding should be manifest in the student's ability to use that knowledge to show comprehension, application, analysis and synthesis of the following basic concepts which are applicable to a wide range of geographical examples.

(1) *Location and Distance.* The idea of "site" and "relative location"; the manner in which some characteristics of places derive from their relative locations. Factors in the making of locational choices for human activities. The role of distance as a factor in geographical distributions.

(2) *Distribution.* The areal or spatial patterns that derive from the arrangement of features on the earth's surface.

(3) *Association.* The degree to which the distribution of two (or more) phenomena are similar. Associations between distributions as starting points for explanations.

(4) *Interaction.* The reciprocal effects of forces and objects, both physical and cultural, on the earth's surface. Man's effects on the physical environment; the significance of the physical environment to man as varying with different cultures and levels of technology.

(5) *Energy.* Energy as keeping things working and moving on the earth's surface. Solar energy and its transformations at the surface of the earth; energy in the water cycle and in human use of the earth. The frictional effects of distance in human distribution patterns.

(6) *Areal Change.* Physical and cultural patterns on the earth's surface as changing through time.

(7) *The Regional Concept.* Regions as mental concepts for classifying areas in terms of particular criteria and for making generalisations about areas. Uniform and nodal regions; hierarchies of regions.

(8) *Systems.* Comprehension of the complexity of the real world is aided by identifying sections of reality as interacting systems, i.e. sets of objects and/or attributes related in a specific manner and at varying scales. Systems which have spatial form are of particular interest in geography, e.g. drainage basins, glaciers, sea beaches, natural and artificial ecosystems, farms, cities, nodal regions.

Each of the above fundamental ideas should be exemplified during the course with reference to appropriate examples and case studies.

In the study of particular topics and areas the student should be able to identify and evaluate the essential concepts which concern geographers. A systems approach encourages an awareness of the dynamic and inter-related nature of phenomena on the earth's surface.

Middle Latitude Examples.

It is intended that the student will be able to demonstrate understanding of particular topics by reference to specific mid-latitude case studies and regional examples. Some general knowledge of world distribution and characteristics may be required in certain topics to provide a satisfactory context for mid-latitude studies.

Skills.

The student should be able to:

- (a) read and interpret maps, diagrams and graphs of various kinds and scales, and construct them;
- (b) identify and interpret the interrelationships of elements of information derived from ground and aerial photographs;
- (c) interpret and use written materials such as tables, reports, census data, extracts from relevant journals, texts, newspapers, etc.
- (d) apply field and laboratory techniques appropriate to the investigation of geographic problems;
- (e) observe, measure and record appropriately and accurately data which are relevant to the solution of geographic problems, both in the field and classroom.
- (f) formulate and test hypotheses in the field and laboratory to attempt to solve geographic problems;
- (g) comprehend and apply geographical terminology;
- (h) communicate information and ideas in a logical manner and clear prose;
- (i) draw appropriate illustrations (e.g. topographic sketches, graphs, cross sections) and use them to complement written information.

Integration of Subject Matter.

There is nothing inherently advantageous nor obligatory in the order of the topics listed. They should be tackled in the order or combination most appropriate to the student and the general objectives of the syllabus.

Although it may be necessary to study some topics separately there should be opportunities to show the interactions of the components of the physical environment on each other and to present a view of physical environment as offering opportunities and handicaps to human activity and settlement. The role of man in modifying the physical environment, intentionally or unwittingly, can be shown in the treatment of soils, vegetation, rivers and coastlines, and atmospheric pollution.

The regional example and case studies in both core and optional topics offer good opportunities for showing the role of physical environment in agriculture, the role of physical factors in industrial settlement location and, conversely, the effects of human activities on the local environment.

Another form of integration that a student may find appropriate and beneficial is that of the coincidental study of a chosen option with related core topic.

Examination Format.

The examination will consist of short answer questions, 40%; three essay-type questions, 60%.

The short answer questions of the examination will be based on core section of the syllabus and the essay questions will examine both the core and optional topics.

Content.

Students will study *all* topics in the core (Section A) and any one topic from the options (Section B).

Time Allocation. It is recommended that the core (Section A) (including about one week on Topic 1) be covered within seventy per cent of the teaching year, the options (Section B) within twenty per cent, with the field study (Section C) taking about 10% of the class time.

Choice of Options. Choice of option should reflect the interest and abilities of the students, the resources available to them, and the teacher's own special interests. It may be appropriate for different students within one class to study different options.

SECTION A: CORE TOPICS.

(All topics must be studied.)

Introductory Theme.

Topic 1: Man as consumer and man as producer.

How do advanced urban-industrial societies organise space on the earth's surface to satisfy human wants?

Content. Man's biological necessities for food and shelter and his culturally acquired wants for goods and services. The notions of resources and environmental constraints. The concentration and dispersal of human activity. Technological change and transport improvements have favoured increasing spatial separation of areas of consumption from areas of food, raw material and energy production.

Patterns and processes in the physical environment.

Topics 2, 3 and 4 deal with the physical processes which support life and their geographic variations especially in middle latitudes.

Topic 2: Solar energy and moisture.

A basic understanding of energy and moisture balances on a global scale with emphasis upon energy and moisture transfer.

Content: Particular studies should be made of:-

- The concept of the water cycle and its significance to man; the global variation of moisture in terms of evaporation, precipitation and runoff; flood and drought as examples of extreme variations in the water cycle.
- The radiation and energy balances; diurnal, seasonal and latitudinal imbalances. The global variation of energy in terms of net radiation, latent heat and sensible heat transfer.
- Air movement which results from energy imbalances e.g. local winds; seasonal movement (north and south) of the major pressure systems; the pattern of the general circulation.
- An examination of climates as systems of energy and moisture flows. Air masses and fronts. Special emphasis should be given to mid latitude climates.

Topic 3: The earth's surface.

Landforms resulting from the interaction of energy inputs and earth materials and structures.

Content. Common structures of the earth's crust and their impact on the shape of the land surface: e.g. landforms developed on flat-lying and folded sediments; faults and related forms, volcanoes and their activity; forms influenced by joints as for example on granite and limestone. Weathering, river erosion and deposition in the mid-latitude lands; river channel processes and their effect on valley development; processes operating on valley-side slopes.

Topic 4: Plant distribution in mid-latitudes.

The ecosystem concept and its relevance in geography.

Content. Requirements for plant growth: the plant as an individual; the plant in a community. Major natural plant communities of the mid-latitudes—(deciduous woodlands, coniferous forests, temperate rainforests, temperate grasslands, sclerophyllous woodland and forests)—a study of their composition and structure, and development, emphasising factors affecting the distribution of these communities—climate, soils, fauna and the impact of man.

Patterns and Processes in Primary Production—Manufacturing and settlement.

Topics 5, 6 and 7 aim to provide an understanding of the factors involved in the distribution of primary production, manufacturing and settlement in the "advanced" economies of middle latitudes. The case studies should develop the concept of regions based on various criteria and the way in which society organises activities and resources over space.

Topic 5: Primary production.

Reasons for the patterns and characteristics of production systems concerned with provision of food and raw materials.

Content. (either) *Agriculture.* Overview of the factors which influence what farmers produce, how they grow it and what they do with it; agricultural systems as man-controlled ecosystems; physical, economic and socio-political constraints. To be illustrated with regional case studies of at least two of the following: commercial dairying, mixed livestock and crop farming, horticulture and intensive animal production, extensive pastoral farming.

(or) *Non-agricultural primary production.* Factors affecting the location and characteristics of any two of the following: commercial forestry; marine fisheries; metalliferous mining; energy production. Regional case studies should be undertaken to illustrate the physical, technological, economic and political factors applicable.

Topic 6: *Manufacturing industry.*

Reasons for the patterns and characteristics of manufacturing systems.

Content. Analysis of the forces influencing the characteristics, location and relocation of manufacturing activities; the role of raw materials, energy sources, labour, transport, capital, technological changes, government policies, site characteristics, historical and cultural factors, trade relationships, scale economies, and the quality of the physical and human environment affected by the distribution of manufacturing. The study of the concentration of industrial activities in a manufacturing region. This topic is to be illustrated with reference to one of the following: Australia; Japan; The Ruhr; The Great Lakes Industrial Region (U.S.A.).

Topic 7: *Town and city.*

Urban settlements, their functions and internal characteristics.

Content. Factors affecting the location, spacing and patterns of distribution of urban settlements and their hinterlands: the "primate" and "rank size" models of city size-distributions; simple notions of Central Place Theory. The internal differentiation of cities into areas of contrasting function, landscape and social character. Simple models of urban spatial structure such as the urban land-rent model, the concentric zone, sector and multiple nuclei models.

SECTION B: OPTIONS.

(Select any one topic.)

Topic 8: *The coastal zone.*

The interaction of the physical characteristics and human use of this distinctive environment.

Content. Physical types of coasts, near shore, shoreline and offshore features. The relationships between coastal processes (winds, waves, land-sea level relations, sub-aerial processes and biological activity) and coastal forms. Man's impact on coastal zones used for settlement, transport, industry and mining, recreation, and waste disposal. Conflicts of use and problems of land-use planning and of landscape design should be treated.

Topic 9: *The Quaternary.*

The Quaternary Ice Age and its effects.

Content. Landscape processes active during the Quaternary including frost action, snow accumulation, ice motion, glacial erosion and deposition, isostatic and eustatic movements. Direct effects of glaciation in the Quaternary in mountain, lowland and coastal terrain and comparisons with modern glaciers. Sea level changes and their effects on coastal landforms. Climatic changes and the concept of inherited landforms.

Topic 10: *Dynamic climatology.*

The role of atmospheric circulation, expressed in terms of heat and water vapour flows, in producing world climates

Content:

1. Regions of convergence and divergence in the general circulation. Climates associated with the Inter-tropic Convergence Zone; subtropical anti-cyclones; frontal cyclones.
2. The relation between upper-level flows and surface weather. Upper-level waves; jet-stream.
3. Recent climatic variability as a result of small changes in the general circulation and its significance to man e.g. changes in the mean position of the Inter-tropic Convergence Zone and subtropical anticyclones.

Topic 11: *A regional study.*

An illustration of the regional concept by a case study.

Content. Types of region—formal or functional; the criteria used to define the region. The growth and development of the region. The internal and external interactions of the region. Areal change through time in the physical and cultural patterns in the region.

Case Study. The metropolitan area of London, or Sydney, or Melbourne, or the S.E. Australian Wheat-Sheep belt.

Topic 12: *The changing rural landscape of South Australia.*

An historical study of the rural geography of South Australia with emphasis on man's changing technology and its impact on the land.

Content. The framework for occupation of the land; characteristics and perceived characteristics of the physical setting; the social environment of the settlers. The sequence of settlement: basic phases:

- (a) pre-European and European up to 1869 (the older settled areas);
- (b) 1869-c.1900 (Northern area and the South-East);
- (c) c.1900-1930 (Murray Mallee and Eyre Peninsula);
- (d) 1930-1975—internal change.

The making of the rural landscape; clearing woodland and scrub, draining swamps, irrigation, improvement and deterioration, making farms and creating trade centres.

Recent changes in the rural landscape: e.g., farm mechanisation, increased mobility of population, changing size of holdings, out-migration, decline of small towns; national parks and the countryside as a place for urban recreation.

Topic 13: *Urban problems in their geographical context.*

Content. The processes of spatial change in the city, in particular edge-of-city growth and inner area succession; the distribution of recreational, educational, social and commercial facilities in relation to needs of the urban population; transport networks and circulation within the city including the journey to work; alternative responses to problems of urban living e.g. land use zoning, urban renewal, the planned location of facilities.

Topic 14: *Negotiated special topic.*

An optional topic may be approved if a case is outlined and addressed to the Secretary of the P.E.B. not later than the end of February of the year in which the examination is held, provided a sufficient number of students were expected to be affected by the application and the Chairman of the Subject Committee and the Chief Examiner believed it to be an appropriate topic.

SECTION C: FIELD AND PRACTICAL WORK.

In order to gain experience in the range of skills listed in the preamble to this syllabus students should undertake a variety of field and practical work related to several of the concepts and topics of the syllabus. Practical skills will be tested in the examination by the ability to interpret statistical data and photos and to interpret and draw maps and diagrams related to the specified concepts and topics.

The field and practical work could lead to a single field report of the student's observations made in a study deriving from one or more of the syllabus topics and carried out either individually or as a member of a group. The study should be designed to give the opportunity to carry out field observations, to analyse data and to present the findings in the form of a well illustrated report.

Alternatively more than one assignment might be undertaken by individual students, provided each is clearly related to the concepts and topics of the syllabus and that a variety of geographical techniques including field observation has been employed.

School Assessment Advice.

1. Moderated school assessment will form a 25% component of the final mark in this subject at the 1979 Matriculation Examination and thereafter until further notice.

2. Teachers will be asked to provide a mark in a range from 0-100 for each student by October 31 on a computer sheet sent to schools by the P.E.B. after the processing of candidates' entries for the examination has been completed. Teachers who use a range of marks other than 100 will be asked to scale their marks to be out of 100 before entering them on the computer sheet. Teachers should be wary of using a too restricted section of the range of marks.

3. Teachers are advised that they should ensure that the assessment is based on the whole range of work specified in the syllabus.

4. It is suggested that teachers allocate marks for school assessment in the following way:

The school's assessment should cover the entire range of the year's work and should be made in the light of the aims and objectives set out in the preamble to the syllabus. It is suggested that the 100 marks be distributed in the following manner:

40 marks: *Field and Practical Work* (see Section C of the syllabus):

This should consist of a single field report by the student involving a variety of sources and techniques; alternatively, it could be more than one assignment involving student work in field observation, map and photo interpretation and the analysis of statistical data. The field and practical work is to be related to one or more of the topics in the syllabus including the optional topics offered by the student.

60 marks: *Understanding of the Concepts and Content of the Core Topics and Selected Options:*

Methods of testing could include short answer questions including those calling for interpretation of data, reports on prepared topics and short essays on chosen questions. It is suggested that approximately equal weighting in the assessment should be given to the several topics of the syllabus, core and option, bearing in mind the nature of the field and practical work already assessed above.

General References.

Note: Works marked with an asterisk have been written primarily as student sources and are recommended for consideration as texts or for purchase as multiple copy sets. Other works are recommended as library resources or teacher references. A fuller list of references in this second category will be included in *Notes on the Matriculation Geography Syllabus* to be available from the P.E.B. late in 1979.

Geographical Concepts:

- *McCaskill, M., *Patterns on the Land—Basic Concepts in Geography* (Longman, 1973).
- Biddle, D. S., and Deer, C. E., *Readings in Geographical Education*, volume 2, 1966-1972 (*Whitcombe and Tombs for Australian Geography Teachers Assn.*, 1973).
- Walford, R. (ed.), *New Directions in Geography Teaching* (Longman, 1973).

Field and Practical Work.

- *Coggins, R. S., and Walford, R. K., *The Practical Geography* (Longmans).
- *Briggs, K., *Fieldwork in Urban Geography* (Oliver and Boyd).
- *O'Regan, D., *Geography Fieldwork for Australian Schools* (McGraw-Hill, 1976).

*Specific Topic References.**Topic 1:*

- *Holmes, J. H. (ed.), *Man and the Environment, Regional Perspectives, Introduction* (Longman, 1976).
- *Irwin, P. G., *Systems in Human Geography*, chapters 1 and 2 (Longman, 1973).

Topic 2:

- *Barlow, M. H., and Newton, R. G., *Pattern and Process in Man's Physical Environment* (McGraw-Hill).
- *Guern, C. C., *The Water Cycle—Concepts and Processes* (Camel, 1979).
- *Mason, B., *Aspects of Physical Meteorology* (Heinemann, 1971).
- *Tweedie, A. D., *Water and the World* (Nelson, 1975).
- Davidson, B. R., *Australia, Wet or Dry?* (Melbourne U.P.).
- Centilli, J., *Sun, Climate and Life* (Jacaranda, 1968).
- Lockwood, J. G., *World Climatology, an Environmental Approach* (Edward Arnold, 1974).
- *Chandler, T. J., *Modern Meteorology and Climatology: An Introduction* (Nelson, 1972).
- Flohn, H., *Climate and Weather* (World Uni Library, 1969).
- Sellers, W. D., *Physical Climatology* (Chicago Uni Press, 1965).
- Strahler, A. N., *Physical Geography* (J. Wiley and Sons, 1975).

Topic 3:

- *Tweedie, A. D., (1975 *op. cit.*).
- *Twidale, C. R., and Foote, M. R., *Landforms Illustrated* (Nelson, 1969).
- *Twidale, C. R., *Geomorphology* (Nelson, 1973).
- Pitty, A. P., *Introduction to Geomorphology* (Methuen, 1971).
- Spall, R. J., *The Study of Landforms* (C.U.P., 1979).
- Twidale, C. R., *Structural Landforms* (A.N.U. Press, 1971).
- Twidale, C. R., *Analysis of Landforms* (Wiley, 1976).

EXAMEN VOORBEREIDEND WETENSCHAPPELIJK ONDERWIJS IN 1980

Donderdag 8 mei, 13.30 - 16.00 uur

AARDRIJKSKUNDE

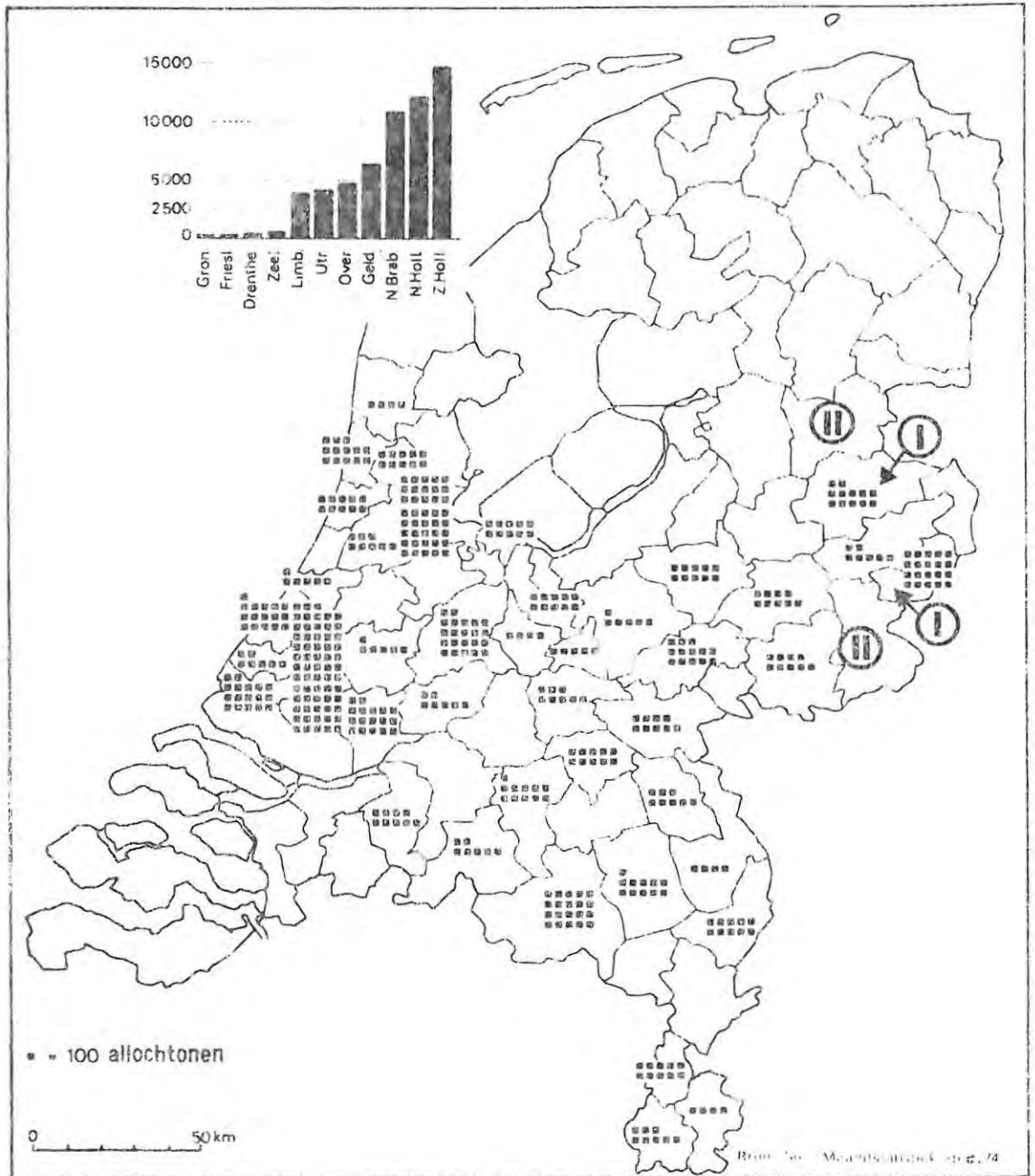
Deze opgaven zijn vastgesteld door de commissie bedoeld in artikel 24 van het Besluit eind-
examens v.w.o.-II a.v.o.-III a.v.o.

HET EXAMEN BESTAAT UIT 30 OPGAVEN. SLA GEEN OPGAVEN OVER.
 GEEF PER OPGAVE NIET MEER ANTWOORDEN DAN ER WORDEN GEVRAAGD.
 OVERTOLLIGE ANTWOORDEN WORDEN NIET MEEGEREKEND.

A17 *met in Nederland*

antwoord opgave 1 met behulp van onderstaande kaart.

De regionale spreiding van een bepaalde groep allochtonen in Nederland in 1974.



Vrij naar: *Geografisch Tijdschrift* 1975, nr. 4

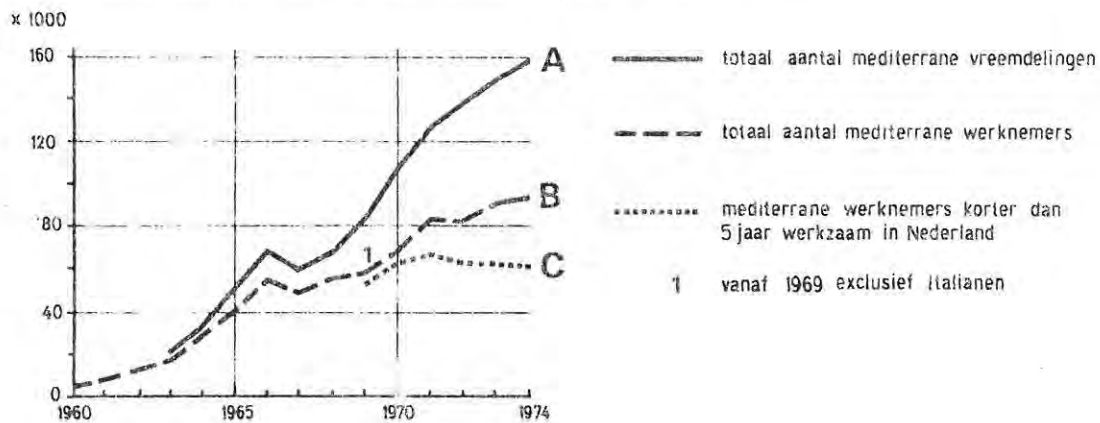
1. a. Noem de groep allochtonen in Nederland waarop deze spreidingskaart betrekking heeft. Kies daarbij uit de volgende groepen:
- Molukkers, voorzover woonachtig in speciale woonwijken en woonoord
 - Surinaamse Nederlanders door het Centraal Bureau of op andere wijze van huisvesting voorzien
 - Repatrianten afkomstig uit Indonesië voorzien van huisvesting
 - Chinese werknemers met een arbeidsvergunning
 - Mediterrane werknemers met een arbeidsvergunning.
- b. Noem de specifieke oorzaak waardoor in de gebieden die op de kaart staan aangegeven met het cijfer I, deze allochtonen wél voorkomen, en in die gebieden aangegeven met het cijfer II niet.

Beantwoord nu opgave 2.

2. De aanwezigheid van de Mediterraneanen vertraagde de daling van de natuurlijke bevolkingsaanwas in het landsdeel West.
- a. Deed deze vertraging zich het sterkst gelden voor de daling van het geboortecijfer of voor de daling van het huwelijksvruchtbaarheidscijfer in dit landsdeel?
- b. Noem een argument voor je keuze.

Beantwoord opgave 3 met behulp van onderstaande grafiek.

De ontwikkeling van het aantal mediterrane vreemdelingen en werknemers in Nederland tussen 1960 en 1974

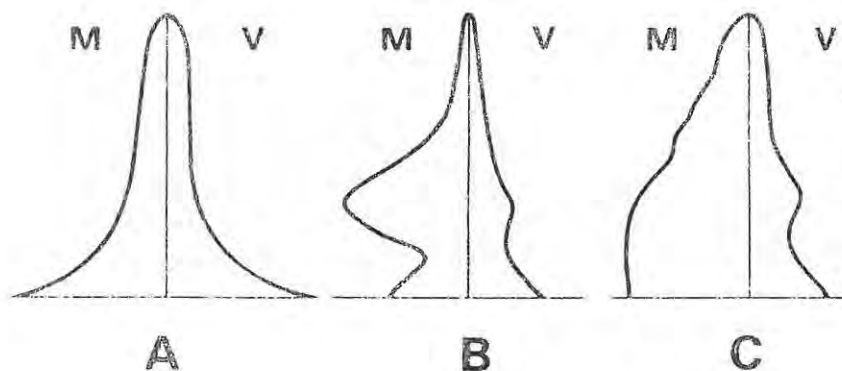


Vrij naar: *Geografisch Tijdschrift* 1975, nr. 4.

3. a. Waarom worden de in ons land werkzame Italianen vanaf 1969 niet meer opgenomen in de statistieken van de buitenlandse werknemers?
- b. Verklaar waardoor curve a en b uiteenlopen.

Beantwoord opgave 4 met behulp van onderstaande figuren.

Bevolkingspyramides

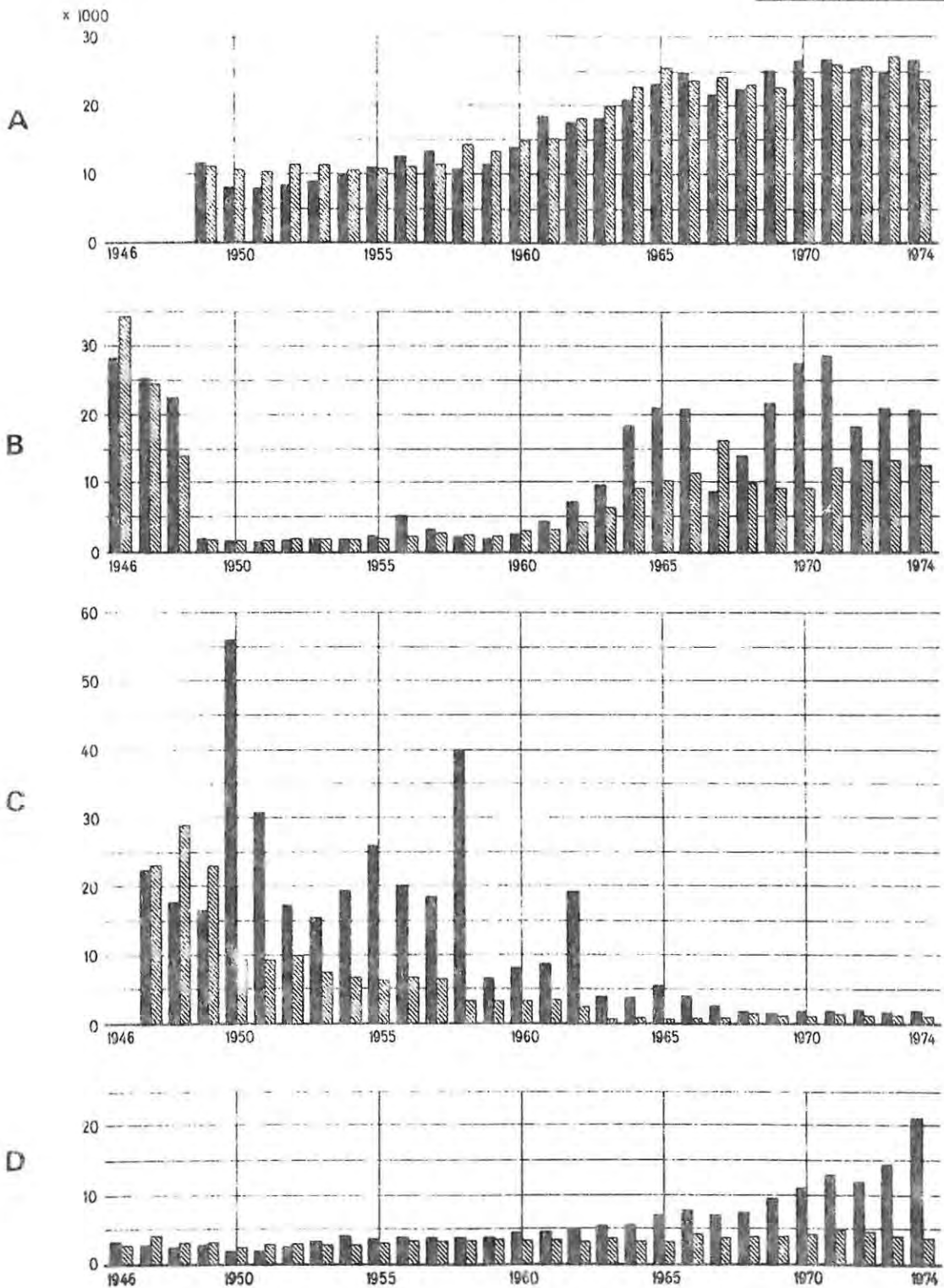
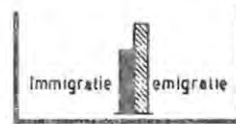


4. a. Welke van de drie bovenstaande figuren A, B of C komt het meest overeen met de bevolkingspyramide van de buitenlandse werknemers (inclusief gezinsleden) in Nederland?
Verklaar je keuze door het noemen van twee argumenten afgeleid uit de door jou gekozen figuur.
- b. Welke van de drie bovenstaande figuren A, B of C komt het meest overeen met de bevolkingspyramide van de Molukkers in Nederland?
Verklaar je keuze door het noemen van een argument afgeleid uit de door jou gekozen figuur.

Beantwoord opgave 5 met behulp van nevenstaande grafieken A t/m D.

5. De grafieken A, B, C en D hebben betrekking op de buitenlandse migratie betreffende
- Suriname/Nederlandse Antillen
 - E.G.-landen
 - overig Europa (vanaf 1964 inclusief Turkije)
 - Indonesië/Westelijk Nieuw Guinea.
- a. Welke van de grafieken A, B, C of D stelt de buitenlandse migratie voor met betrekking tot Suriname/Nederlandse Antillen?
Geef een argument voor je keuze.
- b. Welke van deze grafieken A, B, C of D stelt de buitenlandse migratie voor met betrekking tot de E.G.-landen?
Geef een argument voor je keuze.
- c. Welke van deze grafieken A, B, C of D stelt de buitenlandse migratie voor met betrekking tot Indonesië/Westelijk Nieuw-Guinea?
Geef een argument voor je keuze.

Buitenlandse migratie naar enkele gebieden van herkomst, resp. bestemming



Vrij naar: Statistiek van de buitenlandse migratie 1973 - 1974, CBS.



De burger en de ruimtelijke ordening

6. De investeringspremieregeling geldt in het westen van het land alleen maar voor Goeree-Overflakkee, de Kop van Noord-Holland en de groeikernen.
- Wat is het doel van de investeringspremieregeling?
 - Met welke doelstelling uit de Tweede Nota over de Ruimtelijke Ordening komt het beperken van de investeringspremieregeling tot bovengenoemde gebieden het meest overeen?
7. In de onderstaande vraagonderdelen *a*, *b* en *c* worden telkens een aantal woonkernen genoemd, waarvan de overheid – volgens de Nota's over de Ruimtelijke Ordening –, de verdere uitbreiding wil toestaan of stimuleren. Het planologische doel hiervan is echter bij elk van de drie groepen duidelijk verschillend.
- Met welk planologisch doel (afwijkend van het doel, bedoeld onder *b* en *c*) wordt de uitbreiding van Purmerend, Spijkenisse en Houten bevorderd?
 - Met welk planologisch doel (afwijkend van het doel bedoeld onder *a* en *c*) wordt de verdere groei van Zwolle en Helmond bevorderd?
 - Met welk planologisch doel (afwijkend van het doel, bedoeld onder *a* en *b*) wordt de verdere groei van Woerden, Gouda en Zierikzee toegestaan?
8. Als één van de oorzaken van de verhuisstromen uit de Randstad wordt wel genoemd de sociale overbevolking.
Noem drie kenmerken van sociale overbevolking van dit gebied.

Beantwoord opgave 9 met behulp van onderstaande tabel.

Geboortenoverschot in ‰ in de periode '60-'64, '65-'69 en '70-'71.

	1960-1964	1965-1969	1970-1971
A	9,7	7,1	5,2
B	16,9	15,4	14,2
C	11,5	9,1	7,6
D	8,5	5,8	3,1

Vrij naar: *Het Groene Hart binnen de Randstad*, H. F. L. Otrens, 1976

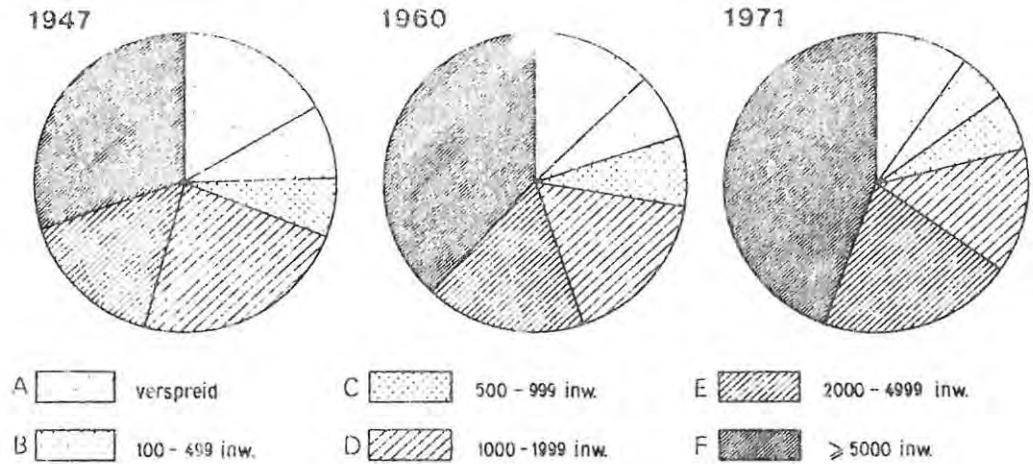
9. De bovenstaande gegevens hebben betrekking op de volgende gebieden:
- de gehele Randstad
 - het Middengebied van de Randstad
 - de Randsteden (gemeenten met meer dan 50.000 inwoners)
 - de Stedenring (de noord- en zuidvleugel van de Randstad)

Neem de letters A, B, C en D op je antwoordblad over en zet achter elke letter op welk gebied deze gegevens van toepassing zijn.

Zuidwest-Nederland als ontsluitingsgebied

Beantwoord de opgaven 10 en 11 met behulp van onderstaande diagrammen.

Procentuele verdeling van de bevolking over woonkernen naar grootteklasse in 1947, 1960 en 1971 in Zeeland



Vrij naar: *Bewoningspatroon voor Zeeland, PPD 1975.*

10. Het absolute aantal inwoners in Zeeland is tussen 1947 en 1971 voortdurend toegenomen. Is dit uit de diagrammen af te lezen? Licht je antwoord toe.
11. Ook in de periode 1947 - 1960 is het absolute aantal inwoners in Zeeland toegenomen.
 - a. Is de conclusie juist dat het totale aantal inwoners in categorie E in deze periode is toegenomen? Licht je antwoord toe.
 - b. Is uit bovenstaande diagrammen af te leiden dat het gemiddelde aantal inwoners per kern van categorie E in de periode 1947 - 1960 is gedaald? Licht je antwoord toe.

Beantwoord nu de opgaven 12 en 13.

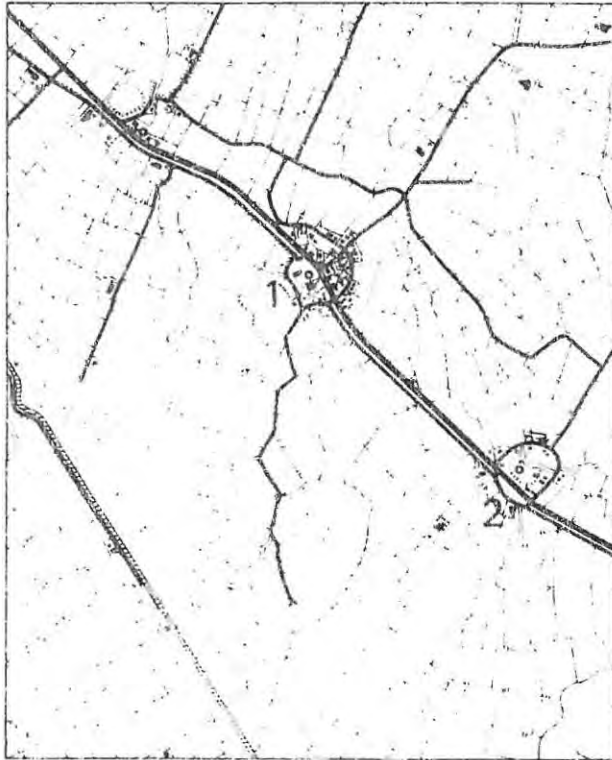
12. Van het totale aantal werknemers in de dienstverlenende sector in de provincie Zeeland werkt ± 70% in Midden-Zeeland (Walcheren, Noord- en Zuid-Beveland). Toch kan men uit dit gegeven niet zonder meer afleiden dat deze regio wat betreft de dienstverlenende sector de centrumfunctie voor heel Zeeland vervult. Licht dit toe.
13. In Zeeland was het bevolkingsdraagvlak voor tal van voorzieningen - voornamelijk voor die van de hoogste categorie - te smal. Welk specifiek kenmerk van de ruimtelijke structuur van Zeeland was een extra nadeel om de drempelwaarde voor dit soort voorzieningen te halen?



Nederzettingen in Nederland

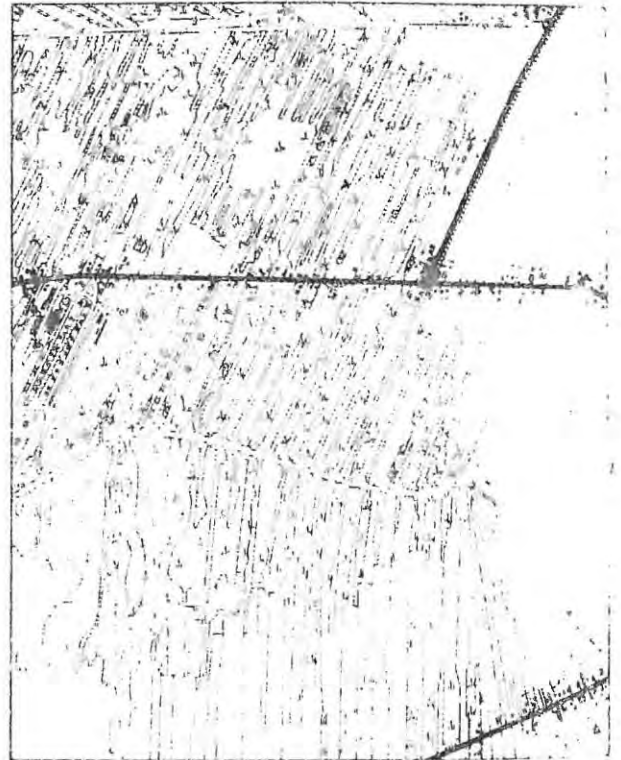
Beantwoord opgave 14 met behulp van onderstaande kaarten A en B.

Kaart A



- | | | |
|----------------|------------------|--------|
| Verharde weg | Lofbos | Water |
| Onverharde weg | Opgaand loofhout | Duiker |
| Bebouwing | Grassig land | Bomen |
| Kultuurland | Riet en biezen | Kerk |

Kaart B



0 750 900 1050 1500 m

Vrij naar: Bijhouwer: *Het Nederlandse Landschap 1977*.
Atlas van Nederland, blad IX.

14. a. Welk type nederzetting is te onderscheiden bij 1 en 2 op kaart A?
 b. Welk type nederzetting is te zien op kaart B?
 c. In welk van de hieronderstaande landschappen kunnen we het type nederzetting, bedoeld in vraag b, aantreffen?
 laagveenstreken
 hoogveengebieden
 de dekzandgebieden van Oost-Nederland
 de lössgebieden van het zuiden
 -- de bedijkte kwelders van Noord-Nederland.

Beantwoord nu de opgaven 15 en 16.

15. De vorm die het verzorgingsgebied van een centrale plaats in werkelijkheid aanneemt is o.a. afhankelijk van historische factoren, van de oriëntatie van de consumenten op een bepaalde plaats, van de ligging ten opzichte van gelijkwaardige centrale plaatsen en van landschappelijke factoren.
 Noem twee andere factoren die mede de vorm van het werkelijke verzorgingsgebied kunnen bepalen.
16. a. Noem een oorzaak voor het verschijnsel dat, onafhankelijk van de groei van het inwonertal, het verzorgingsniveau van sommige dorpen onder invloed van de nabije ligging van een grotere plaats, kan stijgen.
 b. Noem een oorzaak voor het verschijnsel dat, onafhankelijk van de groei van het inwonertal, het verzorgingsniveau van sommige dorpen onder invloed van de nabije ligging van een grotere plaats, juist kan dalen.



Het Kwartair in Nederland en het agrarische grondgebruik

Beantwoord met behulp van onderstaande kaart de opgaven 17, 18 en 19.



17. Op de punten A tot en met E zijn boringen verricht. De resultaten van deze boringen zijn in onderstaande tabel aangegeven. De volgorde I tot en met V in de tabel correspondeert *niet* met de volgorde A t/m E.

Boring	Afzetting van boven naar beneden.
I	dekzand; zand en grind.
II	jonge zeeklei; veen; oude zeeklei; basisveen; dekzand; keileem; zand en grind.
III	zand en klei (Holoceen); zand en grind (Pleistoceen).
IV	dekzand; fluvio-glaciaal zand; keileem; fluvio-glaciaal zand; zand en grind.
V	jonge zeeklei; veen, oude zeeklei; basisveen; dekzand; zand en grind.

Neem de letters A tot en met E op je antwoordblad over en zet achter elke letter het bijbehorende cijfer uit de tabel.

18. Op de kaart staan de punten 1 tot en met 4 aangegeven.
De hoogte van deze punten ten opzichte van het zeeniveau is in willekeurige volgorde:
- 4m; - 1m; + 2m; en + 57m.
Neem de cijfers 1 tot en met 4 op je antwoordblad over en zet achter elk cijfer de juiste hoogte ten opzichte van het zeeniveau.
19. Welke vorm van agrarisch grondgebruik overheerst in het gebied rond punt 2:
weidebouw, akkerbouw of bosbouw?
Noem ter verklaring hiervan twee oorzaken van fysisch-geografische aard.

Beantwoord nu de opgaven 20 t/m 22.

20. In het Gooi komen de volgende pleistocene afzettingen aan de oppervlakte voor:
- pre-glaciaal fluviaal zand en grind
- grondmorene
- fluvio-glaciaal zand en grind
- dekzand.
Met behulp van de aanwezigheid van welke van bovengenoemde afzettingen kun je nagaan of de uiterste grens van de ijsbedekking in de Saale-ijstijd (Riss-ijstijd) ten noorden of ten zuiden van het Gooi heeft gelegen?
Licht je antwoord toe.
21. Een combinatie van drie natuurlijke factoren verklaart hoofdzakelijk waarvan de nu nog bestaande bos- en heidegebieden in het stuwwallenlandschap vroeger niet voor akker- en weidebouw in beslag zijn genomen.
Welke combinatie van drie natuurlijke factoren wordt hier bedoeld?
22. Noem drie landbouwtechnische ontwikkelingen uit de afgelopen honderd jaar, waardoor de betekenis van de bodemgesteldheid voor het agrarische bedrijf op de zandgronden niet meer zo groot is als vroeger.

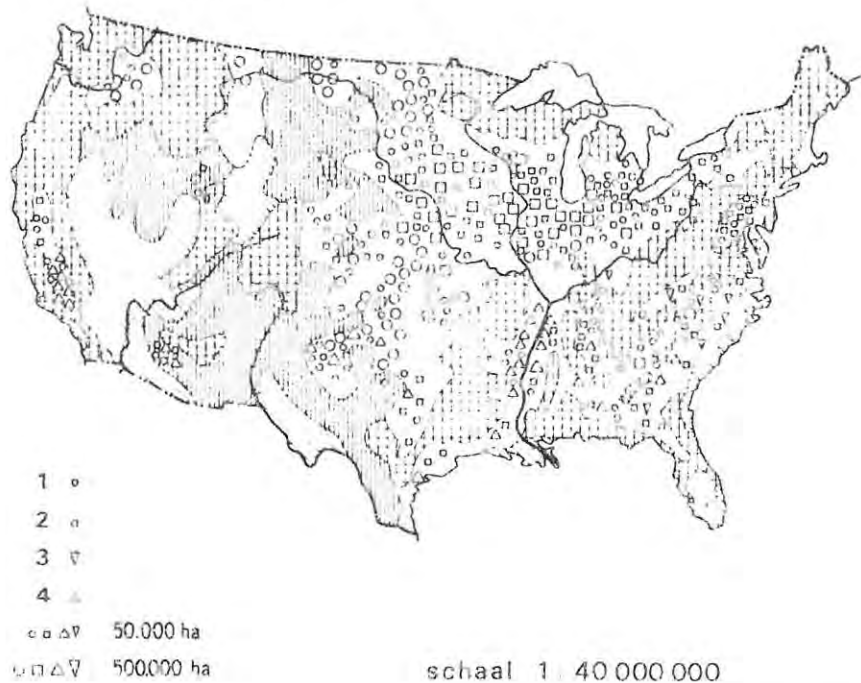


De Verenigde Staten van Amerika

- 23 a. In Californië neemt in het algemeen de werkelijke verdamping, in tegenstelling tot de temperatuur, van zuid naar noord toe. Verklaar dit.
- b. Noem drie oorzaken waardoor de agglomeratie Los Angeles méér water toegevoerd moet krijgen dan de agglomeratie San Francisco.

Beantwoord opgave 24 met behulp van onderstaand kaartje.

**Agrarisch grondgebruik in de Ver. Staten
(1977)**



Vrij naar: Meulenhoff schoolatlas, 1e druk.

24. Neem de nummers 1 t/m 4 uit de legenda van het kaartje op je antwoordblad over en zet er de namen van de erbij behorende gewassen achter.

Beantwoord na de opgaven 25 en 26.

25. Ziet ruimtelijke patroon van de landbouw zoals zich dat tot de dertiger jaren had ontwikkeld is niet het huidige ruimtelijke patroon.
- a. Noem vier agrarische „belts” die zich tot de dertiger jaren hadden ontwikkeld.
- b. De meeste agrarische „belts” hebben een grotere verscheidenheid in gewassen verkregen. Noem ter verklaring hiervan drie factoren (overheidsmaatregelen buiten beschouwing gelaten) die voor één of meer „belts” gelden.
26. Een probleem van de Amerikaanse landbouw is de overproductie. De Amerikaanse landbouwpolitiek heeft o.a. ten doel de produktie te beperken en tevens de boeren een redelijk inkomen te verschaffen.
- a. Noem twee elkaar aanvullende maatregelen die de overheid genomen heeft om dit doel te bereiken.
- b. Verklaar waardoor, ondanks de in vraag a bedoelde maatregelen, de beoogde produktiebeperking niet is bereikt.
- c. De gevolgde landbouwpolitiek draagt bij tot het afnemen van het aantal kleine agrarische bedrijven. Verklaar dit.

Belgie

17. In de polders vindt schaalvergroting in de landbouw voornamelijk plaats door middel van mechanisatie, op de zandgrond voornamelijk door middel van intensivering. Verklaar dit verschil.
18. a. De huwelijksfrequentie in de Eerste en de Tweede Wereldoorlog week af van die in de aangrenzende perioden. In welk opzicht?
b. Geef precies aan waaruit in de bevolkingspyramide van 1980 de afwijking in de Eerste Wereldoorlog blijkt.
19. a. Ondanks het feit dat lokatiefactoren zich in de loop der tijd wijzigen, weten bepaalde industrieën zich toch in de oorspronkelijke vestigingsplaatsen te handhaven. Hoe noemt men dit verschijnsel?
b. Bedoeld verschijnsel doet zich o.a. voor bij de zware industrie in Luik en Charleroi. Noem voor deze industrie twee lokatiefactoren die sinds de Tweede Wereldoorlog in Luik en Charleroi in negatieve zin veranderd zijn.
10. Noem vier oorzaken waardoor de zware industrie zich in Luik en Charleroi handhaaft.

EINDE

COMMISSIE VASTSTELLING OPGAVEN V.W.O.-H.A.V.O.-M.A.V.O.

Bindende normen voor de beoordeling van het schriftelijk werk, vastgesteld door de commissie, bedoeld in artikel 24, lid 1, van het Besluit eindexamens v.w.o.-h.a.v.o.-m.a.v.o.

V.W.O.

AARDRIJKSKUNDE

Eerste tijdvak 1980

In het Besluit eindexamens v.w.o.-h.a.v.o.-m.a.v.o. zijn twee artikelen opgenomen die betrekking hebben op de correctie van het schriftelijk werk.

Artikel 27, vijfde lid, luidt:

„Indien de commissie belast met de vaststelling van de opgaven bindende normen voor de beoordeling van het werk heeft opgesteld, passen de examinator en de gecommiteerde deze bij hun beoordeling toe”.

Artikel 28, eerste en tweede lid, luidt:

„De examinator en de gecommiteerde stellen in onderling overleg het cijfer voor het schriftelijk examen vast. Daarbij gebruiken zij één van de cijfers uit de schaal van cijfers, genoemd in artikel 16, achtste lid. (cijfers lopende van 1 tot en met 10 met de daartussen liggende cijfers met één decimaal)

Komen ze daarbij niet tot overeenstemming, dan wordt het cijfer bepaald op het rekenkundig gemiddelde van het door ieder van hen voorgestelde cijfer. Indien het gemiddelde, bedoeld in de vorige volzin, een cijfer is dat als tweede decimaal een vijf heeft, wordt de eerste decimaal met één verhoogd.”

De examinator en de gecommiteerde zijn derhalve verplicht de bindende normen toe te passen. Indien men na mondeling overleg geen overeenstemming bereikt heeft op basis van de bindende normen, dan wordt het cijfer vastgesteld op het rekenkundig gemiddelde van beide voorgestelde cijfers.

De staatssecretaris van Onderwijs en Wetenschappen heeft besloten in 1980 in het eerste tijdvak de correctie van het vak aardrijkskunde te laten verrichten door de examinator en de gecommiteerde aan de hand van een correctievoorschrift met bijbehorende puntenschaal dat *van te voren* is vastgesteld door de Commissie Vaststelling Opgaven (C.V.O.).

De examinator en de gecommiteerde stellen met behulp van dit correctievoorschrift voor elke kandidaat de score vast uitgedrukt in een puntenschaal van 10-100.

Deze score wordt bij de schoolleiding op een daarvoor bestemd formulier (A.575) ingeleverd.

De schoolleiding ontvangt van de C.V.O. na de vaststelling van de cesuur onvoldoende/voldoende een omzettingstabel score-cijfer c.s.e. voor dit vak.

Is het werk „normaal” dan zal de cesuur bij 54/55 punten liggen.

1. SCORINGSVOORSCHRIFTEN EN RICHTLIJNEN VAN ALGEMENE AARD.

1. Voor het gehele examenwerk worden aan iedere kandidaat maximaal 100 punten gegeven.
2. Aan iedere kandidaat worden vooraf 10 punten toegekend (bonuspunten).
Er blijven derhalve maximaal 90 punten over voor de waardering van de prestaties van de kandidaat.
3. Bij de waardering van een *onderdeel* van het schriftelijke werk worden slechts *hele* punten toegekend. Een onderdeel is elke opgave of deel van een opgave waarvoor punten kunnen worden gegeven.
4. Voor elk onderdeel van het schriftelijke werk wordt onder II in de kolom „Punten” het maximaal toe te kennen aantal punten aangegeven.
5. Ontbreekt voor een onderdeel elke prestatie of is een onderdeel volledig foutief beantwoord, dan worden voor dit onderdeel geen punten toegekend.
6. In het antwoordmodel (zie II)
 - wordt een beschrijving gegeven van de goede antwoorden;
 - worden bij enkele onderdelen in de kolom „Opmerkingen” fouten aangegeven die noodzakelijk moesten worden vermeld en/of antwoorden die ook mogen worden goedgekeurd.
 In de scoringsvoorschriften onder II
 - wordt bij enkele onderdelen ook het aantal punten voor gedeeltelijk goede antwoorden vermeld.
7. Is de beantwoording van een onderdeel niet geheel juist of niet volledig en zijn hiervoor onder II geen aanvullende scoringsvoorschriften gegeven, dan dient op basis van het maximaal beschikbare aantal punten voor dit onderdeel een zodanig geheel aantal punten te worden gegeven dat een daarmee evenredige waardering wordt uitgedrukt.

8. Wanneer een kandidaat meer antwoorden geeft dan worden gevraagd, mag het *laatste* overtollige antwoord resp. mogen de *laatste* overtollige antwoorden niet worden gehonoreerd.
9. Het antwoordmodel geeft slechts de essentie van het gewenste antwoord aan. Andere juiste verwoordingen die in de kolom „Opmerkingen” niet nader staan aangegeven, moeten ook volledig worden gehonoreerd.
10. Een antwoord dat niet in het antwoordmodel is opgenomen en dat naar het oordeel van de corrector aantoonbaar juist is, mag worden gehonoreerd met inachtneming van de bovenvermelde regels.
11. Indien U met behulp van het antwoordmodel en de bijbehorende scoringsvoorschriften en na overleg met de tweede corrector het totale aantal punten (inclusief de bonuspunten) per kandidaat heeft vastgesteld, bent U verplicht het cijfer te geven dat staat vermeld in de nog aan U toe te zenden omzettingstabel score-cijfer c.s.e.

II. ANTWOORDMODEL EN BIJBEHORENDE SCORINGSVOORSCHRIFTEN

Antwoorden	Opmerkingen	Punten
<i>Allochtonen in Nederland</i>		
1. a. Mediterrane werknemers met arbeidsvergunning. b. In de gebieden aangegeven met het cijfer I de aanwezigheid van de textielindustrie. In de gebieden aangegeven met het cijfer II ontbreekt industrie.	b. In het antwoord moeten beide gebieden tegen elkaar afgewogen worden.	a. 1 b. 2
2. a. Bij de daling van het huwelijksvruchtbaarheids-cijfer. b. Eén van de onderstaande: — weinig oudere Mediterrane vrouwen — hoge huwelijksvruchtbaarheid bij de Mediterraneanen.		a. 1 b. 2
3. a. Door de E.G.-bepalingen met betrekking tot vrij verkeer van personen en goederen. b. Door het toenemende aantal gezinsherenigingen.	b. Hoog geboortencijfer is een fout antwoord.	a. 1 b. 2
4. a. B. Twee van de onderstaande: — een groot mannenoverschot — het geringe aantal ouderen — weinig kinderen (in de leeftijd van 10–20 jaar) met evenveel jongens als meisjes — oververtegenwoordiging van de produktieve leeftijdsgroep. b. A. Eén van de onderstaande: — de zeer jonge bevolkingsopbouw — de evenwichtige verdeling mannen - vrouwen.		a. totaal 2 p.: alleen B: 0 B met 1 argument goed: 1 B met 2 argumenten goed: 2 b. alleen A: 0 A met 1 argument goed: 1
5. a. D. De immigratie uit deze gebieden is vooral in de jaren voorafgaande aan de onafhankelijkheid van Suriname sterk gestegen. b. A. Eén van de onderstaande: — de immigratie uit deze landen is het grootste en het meest constant — immigratie en emigratie heffen bij deze groep elkaar het meeste op. c. C. De immigratie uit deze gebieden was vooral groot rond 1950 en 1955–1958 door de soevereiniteits-overdracht resp. Nieuw-Guinea-conflict.		a. 1 p. alleen D is 0 p. b. 1 alleen A is 0 p. c. 1 alleen C is 0 p.
<i>De burger en de ruimtelijke ordening</i>		
6. a. Het bevorderen van de werkgelegenheid. b. Het uitwaarts laten groeien van de Randstad.	b. Alle andere antwoorden zijn fout.	a. 1 b. 2
7. a. Het opvangen van de overloop. b. Eén van de onderstaande: — de economische ontwikkeling van de gebieden waarin deze steden liggen, bevorderen. — het verminderen van de bevolkingsdruk in het westen. — gelijkmatiger bevolkingsverspreiding over de landsdelen.	b. Fout zijn andere antwoorden, zoals: het opvangen van de overloop, het open houden van het Groene Hart, de beperking van van het verkeer, het bevorderen van de gebundelde deconcentratie.	a. 1 b. 1

Antwoorden	Opmerkingen	Punten
7. c. Eén van de onderstaande: - het openhouden van de centrale open ruimte - het opvangen van de eigen bevolkingsgroei.	c. Fout zijn andere antwoorden, zoals: het opvangen van de overloop, het stimuleren van achtergebleven gebieden, het bevorderen van gebundelde deconcentratie, het open houden van het Groene Hart.	c. 1
8. Drie van de onderstaande: - te weinig (kwalitatief) goede woningen - te grote verkeersdichtheid - overlast van lucht-, bodem- en waterverontreiniging - te weinig recreatieruimte.		totaal 3 p: voor elk kenmerk 1 p.
9. A: de Stedenring. B: het Middengebied. C: de gehele Randstad. D: de Randsteden.		totaal 3 p: 1 antwoord goed: 1 p. 2 antwoorden goed: 2 p. 3 en 4 antwoorden goed: 3 p.
<i>Zuidwest-Nederland als ontsluitingsgebied</i>		
10. Nee. Dan zouden de stralen/oppervlakten van de drie diagrammen niet even groot zijn.		3 p. Alleen ja of nee = 0 p.
11. a. Ja. Sector E omvat in 1960 een (iets) groter percentage van een groter absoluut getal. b. Nee. Weliswaar is het totale aantal inwoners van categorie E toegenomen, maar de ontwikkeling van het aantal kernen in categorie E is niet bekend.		a. 1 Alleen „ja” = 0 p. b. 2 Alleen „nee” = 0 p.
12. In deze categorie zijn ook lokaal verzorgende functies opgenomen.		3
13. Het eilandkarakter.		3
<i>Nederzettingen in Nederland</i>		
14. a. Terpdorp. b. Eén van de onderstaande: - streekdorp - laagveenontginningsdorp. c. Laagveenstreken	Fout: lintbeouwing veenkolonie. Wegdorp mag goed gerekend worden.	a. 1 b. 1 c. 1
15. Twee van de onderstaande: - de mate van bereikbaarheid van de centrale plaatsen of het wegennet - het spreidingspatroon van de bevolking - koopkrachtvariaties.	Wegennet en bereikbaarheid gelden niet als twee verschillende factoren.	totaal 3 p.: 1 antwoord goed: 1 p. 2 antwoorden goed: 3 p.
16. a. Eén van de onderstaande: - door suburbanisatie van stedelijke voorzieningen - mentale verstedelijking. b. Doordat men gebruik kan maken van de voorzieningen van de grotere plaats.		a. 2 b. 1
<i>Het Kwartair in Nederland en het agrarische grondgebruik</i>		
17. I : E. II : A. III : B. IV : C. V : D.		totaal 3 p.: 1 antwoord goed: 0 p. 2 antwoorden goed: 1 p. 3 antwoorden goed: 2 p. 4 of 5 antwoorden goed: 3 p.

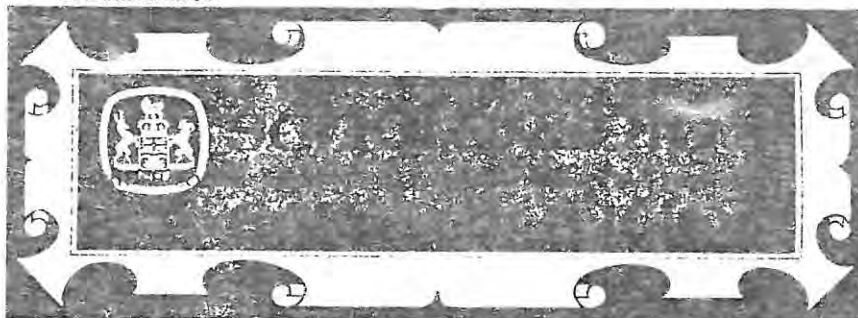
Antwoorden	Opmerkingen	Punten
18. 1: + 2 m. 2: -- 4 m. 3: - 1 m. 4: + 57 m.		totaal 3 p.: 1 antwoord goed: 1 p. 2 antwoorden goed: 2 p. 3 of 4 antwoorden goed: 3 p.
19. Akkerbouw. De aanwezigheid van vruchtbare zeelei. De grondwaterstand is goed te regelen.		1 1 1
20. Grondmorene. Dit is een afzetting die onder het ijs wordt afgezet, dus moet er een ijsbedekking in het Gooi zijn geweest, en dus lag de uiterste grens van de ijsbedekking ten zuiden van het Gooi.		1 2
21. Zandgrond (slechte chemische vruchtbaarheid). Grote doorlatendheid van de grondsoort. Lage grondwaterstand in de hoge delen.		1 1 1
22. Het toepassen van kunstmest. Het toepassen van moderne vormen van irrigatie. Het uitvoeren van bodemstructuurverbeteringen (diepploegen e.d.).	„Bemesting” is fout.	1 1 1
<i>De Verenigde Staten van Amerika</i>		
23. a. De neerslaghoeveelheid neemt van zuid naar noord toe. b. Drie van de onderstaande: -- in de agglomeratie Los Angeles valt minder neerslag -- de agglomeratie Los Angeles heeft meer inwoners -- de agglomeratie Los Angeles heeft meer industrie -- in de agglomeratie Los Angeles verdampt een groter deel van het toegevoerde water.		a. 1 b. totaal 2 p.: 1 antwoord goed: 0 p. 2 antwoorden goed: 1 p. 3 antwoorden goed: 2 p.
24. 1 = tarwe. 2 = mais. 3 = tabak. 4 = katoen.		totaal 3 p.: 1 antwoord goed: 1 p. 2 antwoorden goed: 2 p. 3 of 4 antwoorden goed: 3 p.
25. a. Dairy Belt. Corn Belt. Cotton Belt. Wheat Belt. b. Drie van de onderstaande: -- opkomst nieuwe gewassen -- ongunstige bedrijfsresultaten bij bepaalde monocultures -- uitputting van de bodem -- bodemerosie -- spreiding van bedrijfsrisico's.		a. vier goede antwoorden: 1 p. b. totaal: 2 p: 1 antwoord goed: 0 p. 2 antwoorden goed: 1 p. 3 antwoorden goed: 2 p.
26. a. Het jaarlijks vaststellen van garantieprijzen voor bepaalde produkten en het vaststellen van de oppervlakte die met die produkten mag worden ingezaaid. b. Op de overgebleven grond steeg de opbrengst per ha. c. Eén van de onderstaande: -- kleine boeren konden geen deel van hun oppervlakte missen en kwamen daardoor niet in aanmerking voor subsidie -- de subsidie was gekoppeld aan de hoeveelheid afgeleverd produkt en derhalve voor kleine boeren gering.		a. 1 b. 1 c. 1

Antwoorden	Opmerkingen	Punten
<i>België</i>		
27. Op de grote bedrijven in de polders is mechanisatie rendabel, op de kleinere bedrijven op de zandgronden niet. Hier is intensivering de enig mogelijke vorm van schaalvergroting.		3
28. a. Was lager. b. De jaarklassen 61 t/m 65 zijn (zowel voor mannen als vrouwen) kleiner.		a. 1 b. 2
29. a. Inertie/standplaatstrouw. b. Twee van de onderstaande: - de verhouding gewichtshoeveelheid steenkool-ijzererts is veranderd (meer ijzererts - minder steenkool) - de prijzen voor overzees transport zijn relatief gedaald - moderne bedrijven hebben behoefte aan vele soorten ertsen.		a. 1 b. 2
30. Vier van de onderstaande: - aanwezigheid van geschikte arbeid - aanwezigheid van voldoende zoet water - aanwezigheid van een afzetgebied - aanwezigheid van een goede infrastructuur - goedkope treintarieven in de bestaande installaties is veel kapitaal geïnvesteerd.	Inertie is fout.	totaal 3 p.: 1 antwoord goed: 0 p. 2 antwoorden goed: 1 p. 3 antwoorden goed: 2 p. 4 antwoorden goed: 3 p.

GEOGRAPHY 12
JANUARY 1980

BRITISH COLUMBIA SCHOLARSHIP EXAMINATION

Social Insurance Number



General Instructions

1. Fill in your Social Insurance Number in the allotted space above. Under no circumstances is your name or identification, other than your Social Insurance Number, to appear on this paper.
2. Candidates should not make entries on the margin to the right of the heavy black line on each page of this booklet.
3. Candidates are urged to use ink when answering examination questions.
4. When instructed to open this booklet, check the numbering of the pages, each side, to ensure that they are numbered in sequence from "page one" to the last page which is identified by "The End."
5. You are requested to indicate with an "X" on the chart below the subjects you are writing for this year's Scholarship competition.

Scholarship Examinations Being Written This Year
Mark With "X"

	Jan.	June		Jan.	June
English Composition	- <input type="checkbox"/>	<input type="checkbox"/>	Geography 12	- - <input type="checkbox"/>	<input type="checkbox"/>
Algebra 12	- - <input type="checkbox"/>	<input type="checkbox"/>	Geology 12	- - - - <input type="checkbox"/>	<input type="checkbox"/>
Biology 12	- - - <input type="checkbox"/>	<input type="checkbox"/>	German 12	- - - - - <input type="checkbox"/>	<input type="checkbox"/>
Chemistry 12	- - <input type="checkbox"/>	<input type="checkbox"/>	History 12	- - - <input type="checkbox"/>	<input type="checkbox"/>
English Literature 12	- <input type="checkbox"/>	<input type="checkbox"/>	Latin 12	- - - - <input type="checkbox"/>	<input type="checkbox"/>
French 12 (Auditory)	- <input type="checkbox"/>	<input type="checkbox"/>	Physics 12	- - - - <input type="checkbox"/>	<input type="checkbox"/>
French 12 (Written)	- <input type="checkbox"/>	<input type="checkbox"/>	Spanish 12	- - - - - <input type="checkbox"/>	<input type="checkbox"/>

For Examinations Branch Use Only

Raw Score	Converted Score		
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Specific Instructions

1. This examination consists of three parts, Part I, Part II, and Part III. The examination is worth a total of 100 marks.
2. PART I is worth 25 marks. An answer sheet is provided for this part of the examination. All Answers in Part I are to be made on the Objective ANSWER SHEET supplied to you separately by the Supervisor. You must use a soft black (2B) lead pencil and follow the instructions given on the Answer Sheet.
3. PART II is worth 50 marks. PART III is worth 25 marks.
4. Read the instructions for each section and each question carefully.
5. Sketches, maps, and diagrams are to be done in pencil (not with ink or ball-point pen).
6. Sketches, maps, or diagrams should be used where they serve to illustrate the points made.
7. Ample space is provided in the examination booklet for your answers. You may find that you do not require all the space provided to complete a fully answered question.
8. Rough work pages are provided in Part I of the examination to assist you in planning your essay.
9. Consider the marks value for each question as you work, and budget your working time accordingly.
10. You have TWO and ONE-HALF HOURS to complete this examination. Use your time wisely. On the basis of the marks given for each part of the examination you might distribute your working time as follows:
 PART I—35 minutes.
 PART II—30 minutes.
 PART III—35 minutes.

Appendix E2 439

PART I
MULTIPLE CHOICE QUESTIONS
(Questions 1 to 25)

Value
25

INSTRUCTIONS: All questions in this Part are valued at one mark each and are worth a total of 25 marks. Choose the correct or best answer in each question, and on your Answer Sheet blacken in the space under the number of your choice with your pencil.

SECTION A (Questions 1-15 inclusive)

1. Modern geographers suggest that man's progress is closely related to
 1. his following the dictates of his specific environment closely.
 2. his ability to change significantly his environment.
 3. his ability to make rational choices in view of his environment.
 4. his great intelligence which allows him to ignore nature.
 5. his ability to reproduce in very large numbers.

2. The structure of the earth's crust strongly influences all but one of the following. Identify the exception.
 1. The size and distribution of mineral resources.
 2. The climate and vegetation regions.
 3. The agricultural land-use pattern.
 4. The soil distribution pattern.
 5. The seasonal climate variations.

3. Identify the statement below which is *not* accepted as evidence that the earth is an oblate spheroid.
 1. The earth casts a spherical shadow upon the moon during an eclipse of the moon.
 2. Ships are seen to disappear in a "sinking" fashion over the horizon.
 3. The earth's curved surface can be observed from a high-flying aircraft.
 4. Satellite air-photographs show a spherical image of the earth.
 5. The sky position of Polaris (the North Star) remains constant throughout the year.

(OVER)

TOTAL SCORE THIS PAGE

4. Select the statement below which is a correct statement about the world's hydro-electricity resource.
 1. The largest undeveloped hydro-electric potential exists in Europe.
 2. The potential and developed hydro-electric resources of the world are not evenly distributed.
 3. Most of the world's electrical energy comes from hydro-electric sources.
 4. Most of the developed world hydro-electric energy sources are located far from populated areas.
 5. Most of the developed world electrical energy is located in underdeveloped countries.

5. The main problem(s) of the world's water resources relate(s) to
 1. The uneven distribution of the fresh water resources.
 2. the conflicting demands of a wide variety of users.
 3. the widespread use of waterways for waste disposal purposes, especially in industrial countries.
 4. all of the above.
 5. 1 and 2 only.

6. The fact that the world's fishery resource "belongs to everyone and therefore belongs to no one" makes it impossible to
 1. develop world-wide total annual catch quotas.
 2. control the size and total catch of each country.
 3. protect endangered species effectively.
 4. all of the above.
 5. 1 and 3 above.

7. The perception man has about a resource is strongly influenced by
 1. the abundance or scarcity of a resource.
 2. the availability of technology for its use.
 3. the location of a resource in relationship to markets.
 4. all of the above.
 5. none of the above.

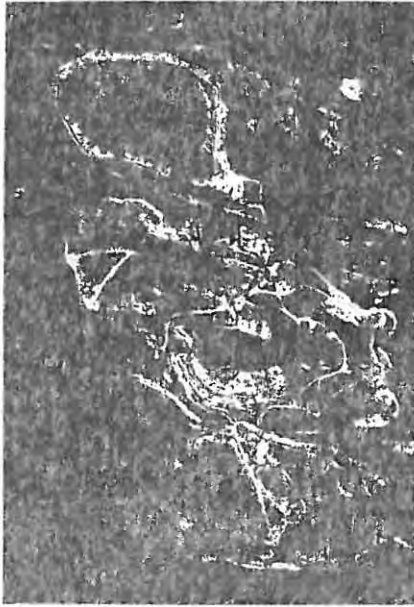
(OVER)

TOTAL SCORE THIS PAGE

434

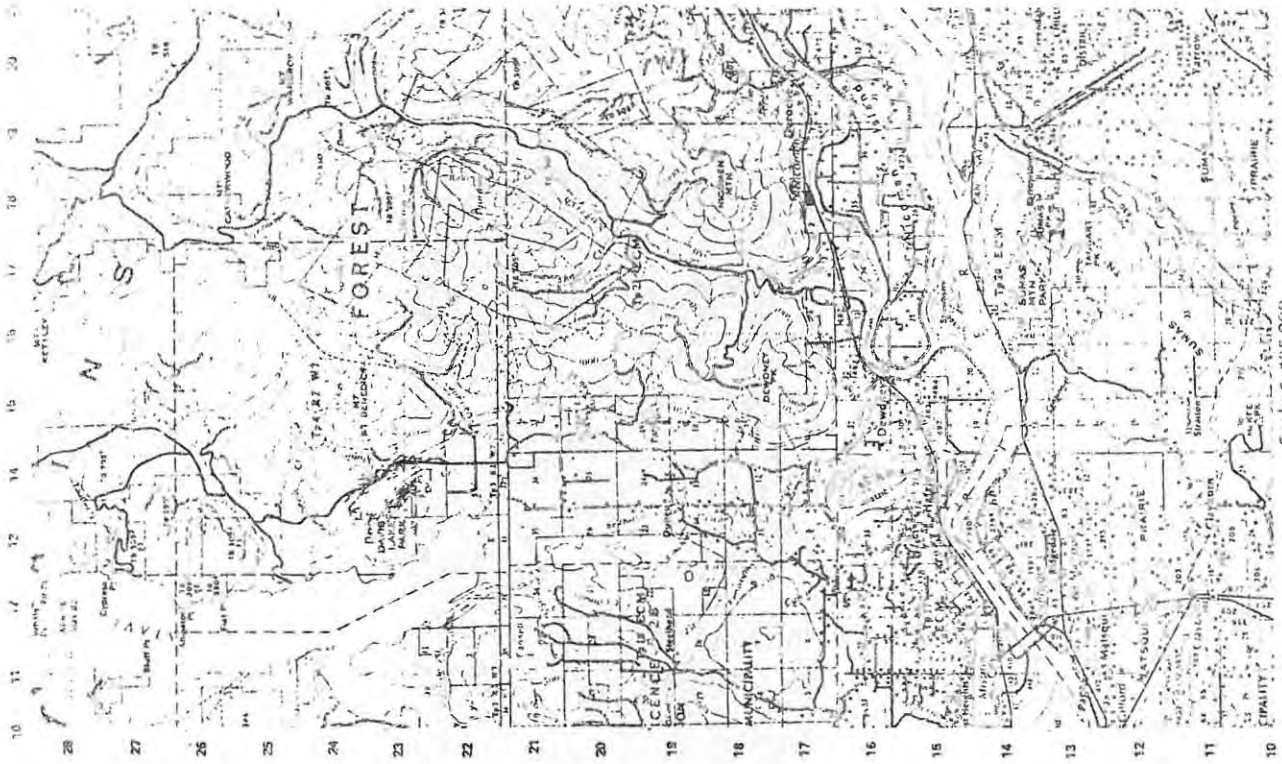
8. Petroleum resources in North America are often carried to consuming areas by pipe-lines because
1. it is impossible to carry petroleum by-products safely by other means.
 2. it costs too much to transport finished petroleum products in North America.
 3. electrical resources are in short supply at the petroleum production locations.
 4. no other means of transporting the crude petroleum is available.
 5. they are the least expensive per unit carrier available.

9. Select the item below which is a non-renewable resource.
1. Evergreen forests.
 2. Beluga whales.
 3. Wind-generated energy.
 4. Uranium ore.
 5. Salmon fishery.



10. The economic activity shown in the aerial photograph above may be said to be
1. resource-centred.
 2. energy-centred.
 3. labour-centred.
 4. market-centred.
 5. transportation centred.

TOTAL SCORE
100% / 100



Scale 1:125,000



(CENTER)

7

6

Rough Work

- 11. Physical weathering is most active in a climate which
 - 1. is hot and dry most of the time.
 - 2. is cold and wet most of the time
 - 3. has a small annual range in temperature.
 - 4. has a consistently high temperature.
 - 5. has a small daily range in temperature.

- 12. Hot deserts, while they have very low annual precipitation totals, do nevertheless, have occasional, heavy precipitation conditions which produce
 - 1. halogilites.
 - 2. calderas.
 - 3. musaraks.
 - 4. all of the above.
 - 5. none of the above.

- 13. Loess (or eolian) soils consist of fine rock particles which
 - 1. are usually deposited at the mouths of large river valleys.
 - 2. are often located to the leeward sides of large arid regions.
 - 3. are always the result of the weathering of limestone rock formations.
 - 4. are mainly the result of glacial deposition processes.
 - 5. are mainly the result of the exposure of batholiths through a variety of erosional processes.

- 14. Select the physical feature listed below which is *not* the result of ocean wave deposition processes.
 - 1. baymouth bar
 - 2. shingle beach.
 - 3. recurved sand-spit
 - 4. stack
 - 5. tombolo

- 15. The base of a sea-cliff is often undercut by rocks and sand being hurled against it by wave action. This process is called
 - 1. attrition.
 - 2. corrosion.
 - 3. solution.
 - 4. hydraulic action.
 - 5. evaporation.

SECTION B (Questions 16-25 inclusive)

The following questions, numbered 16 to 25 inclusive, are to be answered by referring to the topographic map and aerial photographs provided on pages 6 and 7. Pages 6 and 7 are perforated so that they may be removed from the examination booklet for more convenient use.

16. The elevation of Dewdney Peak is
1. more than 850 metres but less than 900 metres.
 2. more than 900 metres but less than 950 metres.
 3. more than 950 metres but less than 1 000 metres.
 4. more than 1 000 metres but less than 1 050 metres.
 5. none of the above.
17. If the Canadian Pacific Railway wished to replace both steel rails between co-ordinate point 11214J (Mission City) and co-ordinate point 193170 (Deroche) it would require double rails for a distance equal to approximately
1. 8.8 kilometres.
 2. 11.9 kilometres.
 3. 14.4 kilometres.
 4. 19.5 kilometres.
 5. 24.6 kilometres.
18. Identify the characteristic(s) which the lakes located at co-ordinate point 149239 and at co-ordinate point 177218 have in common
1. Both have characteristics associated with cirque lakes (tarns).
 2. Both drain in essentially the same direction.
 3. Both are located at approximately the same elevation.
 4. Both are surrounded on their south sides by higher elevations.
 5. All of the above.
19. The soil type most likely to occur at co-ordinate point 145145 is
1. podzol type.
 2. chernozem type.
 3. chestnut brown type.
 4. alluvial type.
 5. regosol type.

20. The physical feature located at co-ordinate point 165110 may be best described as being
1. an island surrounded by a low dike.
 2. an ox-bow lake recently formed.
 3. a sand-bar exposed at low tide periods.
 4. an area of low swampy land.
 5. none of the above.
21. The area shown on the map and in the aerial photographs, suggests all but one of the following land-use activities.
1. Dairy farming.
 2. Forest harvesting.
 3. Recreation activity.
 4. Commercial activity.
 5. Mining activity.
22. The geographic condition which is *not present* in the aerial photographs and topographic map provided is
1. a central business district.
 2. a nucleated settlement.
 3. a stream confluence.
 4. primary resource processing.
 5. sawah agriculture type.
23. The location on aerial photograph number II which has the likely highest land value is the location lettered
1. A
 2. B
 3. C
 4. D
 5. E
24. Select the physical feature below which is *not present* on aerial photograph number II.
1. delta.
 2. sand and gravel bars.
 3. yazoo stream.
 4. cut-bank
 5. slope-off slope.
25. The natural hazard to agricultural land-use which is *most obviously present* in aerial photograph number II is
1. aridity.
 2. poor drainage.
 3. sheet erosion.
 4. saltation.
 5. solifluction.

This is the end of the examination section related to the topographic map on page 6 and the aerial photographs on page 7.

This is the end of Part I—Multiple Choice Questions. The balance of this examination is to be answered in this examination booklet.

Finished Work

PART II

INSTRUCTIONS: Read the instructions for each question carefully.

1. The two climate station statistics below are located as shown.

	FREETOWN, SIERRA LEONE—Latitude 8° north, longitude 15° west											
	1	2	3	4	5	6	7	8	9	10	11	12
Temperature (°C)	27	27	27	27	27	27	27	27	27	27	27	27
Precipitation (millimeters)	10	1	3	7	17	25	27	26	27	28	13	3
Days of Precipitation	3	1	3	7	17	25	27	26	27	28	13	3
Relative Humidity (per cent)	72	70	73	74	79	84	87	84	84	82	81	76
Cloud Cover (in tenths)	3	1	3	5	6	7	8	8	7	6	5	4

	SANTOS/SAO PAULO BRAZIL—Latitude 24° south, longitude 47° west											
	1	2	3	4	5	6	7	8	9	10	11	12
Temperature (°C)	28.6	23.8	23.6	23.6	21.4	20.0	19.4	19.2	20.3	21.4	23.0	24.4
Precipitation (millimeters)	239	234	312	183	152	143	109	104	165	162	196	239
Days of Precipitation	18	18	24	16	14	13	10	9	16	16	20	24
Relative Humidity (per cent)	72	76	78	72	72	72	72	72	72	72	72	72
Cloud Cover (in tenths)	4	6	4	3	3	3	3	3	4	4	7	7

A. State four important characteristics of the Tropical Wet climate type illustrated by the Santos/Sao Paulo statistics.

1. _____
2. _____
3. _____
4. _____

B. List two important characteristics of the Tropical Wet and Dry climate type illustrated by the Freetown statistics.

1. _____
2. _____

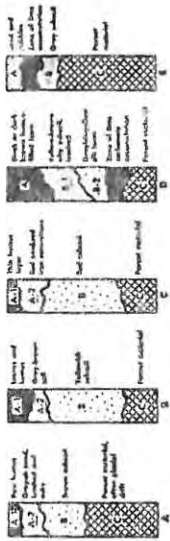
shown which is most associated with each station.

Freetown

Soil Profile Number

Santos, Sao Paulo

Soil Profile Number



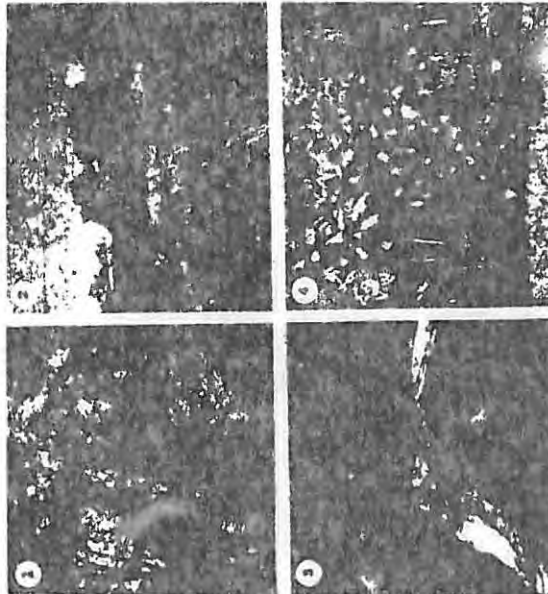
D. In the space provided below, place the number of the natural vegetation type most likely associated with each station.

Freetown

Natural Vegetation Number

Santos/Sao Paulo

Natural Vegetation Number



of the two areas in terms of growing season, type of crops and soil management.

I have chosen to discuss the agricultural activity of the area around

- (i) Freetown, Sierra Leone.
- (ii) Santos/Sao Paulo, Brazil.

Underline the area you intend to discuss.

[This section contains multiple lines of horizontal lines for writing, which are currently blank.]

6. Answer either Question A or Question B. Do not answer both A and B. Question B is on page 17.

A. Name the three types of precipitation shown in the diagrams. Explain why condensation or precipitation occurs in each diagram.

TYPE



Explanation

.....

TYPE



Explanation

.....

TYPE

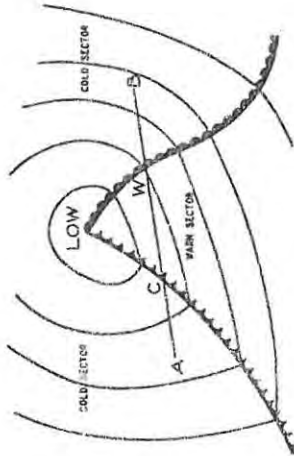


Explanation

.....

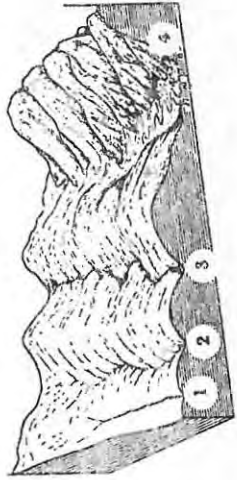
6.

B. The diagram below represents a warm sector depression. Draw a cross-sectional diagram along A C W B, showing air-movement, air-types, and cloud-types likely to be present in the circumstances shown. (Note—If you answered Question A you should not answer this question.)



A	B

Value
8
5. In the four spaces below, draw simple contour maps to represent each of the stream types shown. Contour maps should be drawn in the order shown, and contour line values should be indicated.



2	4
1	3

(COVER)

Value
6
4. Using the three headings below, compare and contrast the characteristics of glaciers and streams.

1. Velocity	Glaciers	Streams

2. Erosional Processes

Glaciers	Streams

3. Depositional Landforms

Glaciers	Streams

6. Wind, water, and temperature change are three important agents which create desert landforms. State the role each of these agents plays in shaping desert landscapes.

Wind

Handwritten notes on lined paper under the heading 'Wind'.

Water

Handwritten notes on lined paper under the heading 'Water'.

Temperature change

Handwritten notes on lined paper under the heading 'Temperature change'.

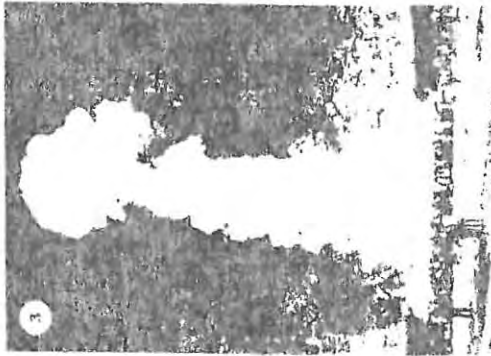
7. Choose one of the three following items:

Describe the physical process or processes which have occurred to create the physical condition shown. Your answer should demonstrate your knowledge of geographic terminology and your understanding of physical processes. Draw a diagram to help explain the process involved in the creation of the physical condition present in the photograph. Label your diagram appropriately.



Finished Work

[Lined writing area for item 3]



I have chosen to answer the item numbered

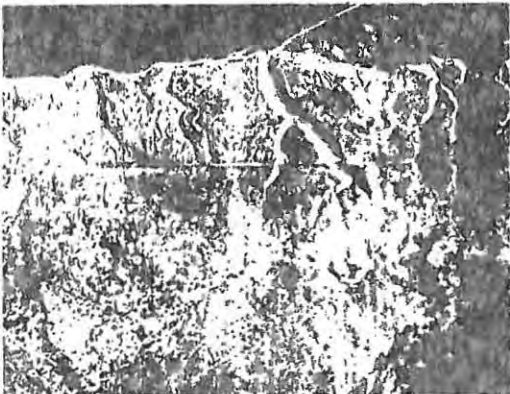


Finished Work

[Lined writing area for item 4]



8. The area shown in the aerial photograph has since this photograph was taken, become an area of small fruit orchards and housing developments. List the inputs which would have to be considered in a semi-arid region such as this to make development possible and profitable.



Finished Work

Blank lined area for writing the answer to question 8.

TOTAL MARKS	
TOTAL PAGES	

Finished Work

Blank lined area for writing the answer to question 8.

TOTAL MARKS	
TOTAL PAGES	

9. The quotation below is from Ian Fleming's book, *The Man With The Golden Arm*.

"The first law for a secret agent is to get his geography right, his means of access and exit, and assure his communications with the outside world. . . . Bond had done his homework on the 1:500,000 Ordnance Survey topographic map . . . and he knew exactly the route the little rail line took . . ."

Rearrict your answer to geographic considerations and explain why James Bond would find a topographic map useful in his detective work. State the advantages a topographic map would have over other types of maps. Indicate the possible disadvantages the map he chose to use might have.

1. Advantages of Using a Topographic Map.

Handwritten notes and lines for the first section.

2. Disadvantages of Using a Topographic Map.

Handwritten notes and lines for the second section.

Finished Work

[Faint, illegible text on page 31]

Finished Work

[Faint, illegible text on page 32]

Finished Work

Rough Work

[This section contains faint, illegible text, likely bleed-through from the reverse side of the page.]

Finished Work

Rough Work

1. The first part of the work was completed on the 15th of the month. The work was done in accordance with the specifications and the work was found to be satisfactory. The work was done in accordance with the specifications and the work was found to be satisfactory.

2. The second part of the work was completed on the 20th of the month. The work was done in accordance with the specifications and the work was found to be satisfactory. The work was done in accordance with the specifications and the work was found to be satisfactory.

3. The third part of the work was completed on the 25th of the month. The work was done in accordance with the specifications and the work was found to be satisfactory. The work was done in accordance with the specifications and the work was found to be satisfactory.

4. The fourth part of the work was completed on the 30th of the month. The work was done in accordance with the specifications and the work was found to be satisfactory. The work was done in accordance with the specifications and the work was found to be satisfactory.

5. The fifth part of the work was completed on the 31st of the month. The work was done in accordance with the specifications and the work was found to be satisfactory. The work was done in accordance with the specifications and the work was found to be satisfactory.



The following information is provided for your information only. It is not intended to be used for any other purpose. The information is provided for your information only. It is not intended to be used for any other purpose. The information is provided for your information only. It is not intended to be used for any other purpose.

TOTAL OF THIS PAGE

The End

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GEOGRAPHY - 626

Syllabus

Notes for Guidance

Specimen Papers

Suggested Booklist

For first examination June 1982

For the General Certificate of Education

SPECIMEN QUESTION PAPER

GEOGRAPHY - ADVANCED LEVEL

Paper 1

626/1

2 hours allowed

Answer any TWO questions.

1. Study the Ordnance Survey map extract (Cardiff, 1:50 000) and photograph A which was taken looking west over Cardiff.

- Draw sketch maps with annotations in order to analyse the site and urban land use of Cardiff.
- Assess the relative contribution which the photograph and map each make to your understanding of the urban geography of Cardiff.
- Compare the physical features of the valleys of the rivers Taff and Ely.

2. Study table 1 below.

TABLE 1. MEAN MONTHLY WATER BALANCE AT HARROGATE (FIGURES IN mm) 1916-1950

	J	F	M	A	M	J	Jy	A	S	O	N	D
Potential Evaporation	8	10	25	42	70	95	110	97	68	42	21	11
Precipitation	80	62	49	53	62	51	72	74	63	75	79	71
Soil Moisture Efficiency	0	0	0	0	8	52	90	102	102	69	11	0
Water Surplus	72	52	24	11	0	0	0	0	0	0	0	40
Storage	102	102	102	102	94	50	12	0	0	33	91	102

- On the graph paper provided, draw appropriate diagrams to illustrate the water balance at Harrogate.
- State the conclusions which can be drawn from the study of the statistics and your diagram.
- How would this information be of use in the management of water resources in the area?

3. The breaking point between the spheres of influence of adjacent towns may be expressed by the formula :

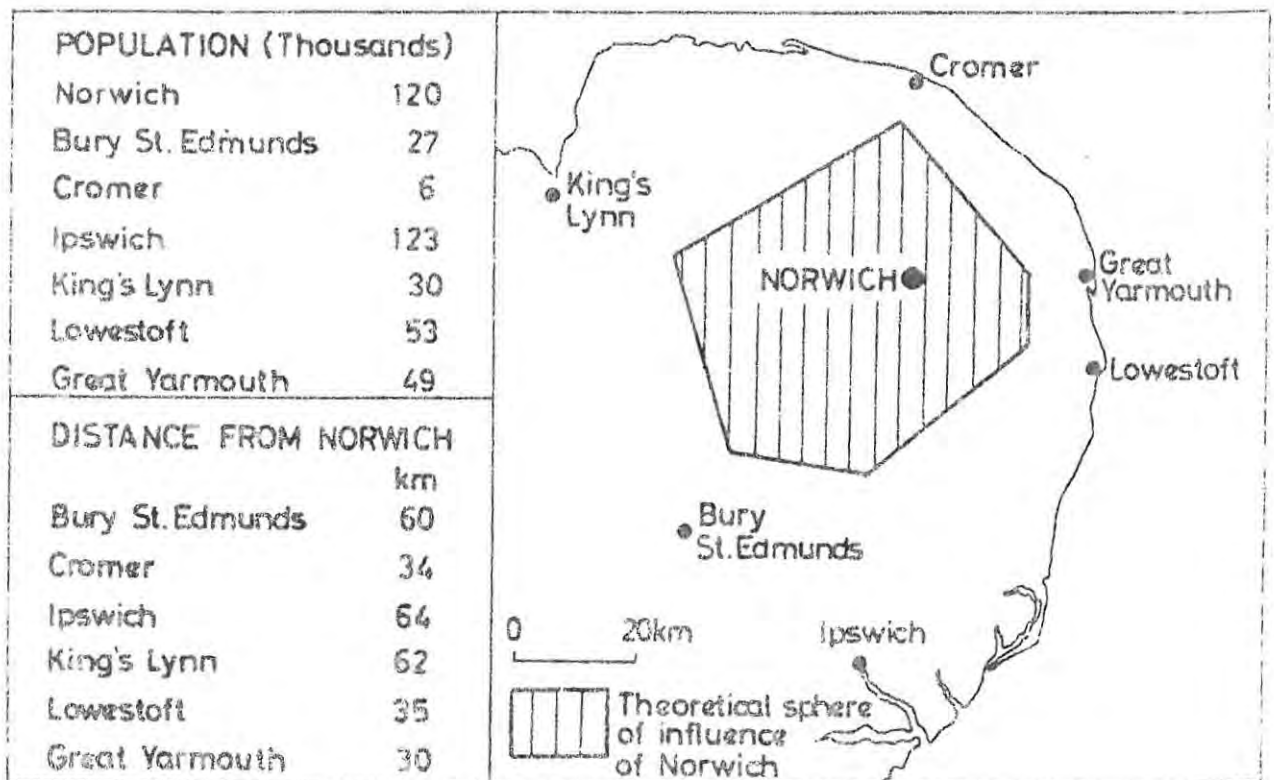
$$P = \frac{d}{1 + \sqrt{\frac{B}{A}}}$$

Where P is the distance of the breaking point from town A
 d is the distance between towns A and B
 A is the population of town A
 B is the population of town B

Map A shows the theoretical sphere of influence of Norwich predicted by applying the formula to Norwich and 6 nearby towns.

(a) Explain in detail how you would carry out a field investigation to test this prediction.

(b) Evaluate the limitations of the theoretical and practical techniques which may be used to determine the sphere of influence of a town.



MAP A (for use with question 3).

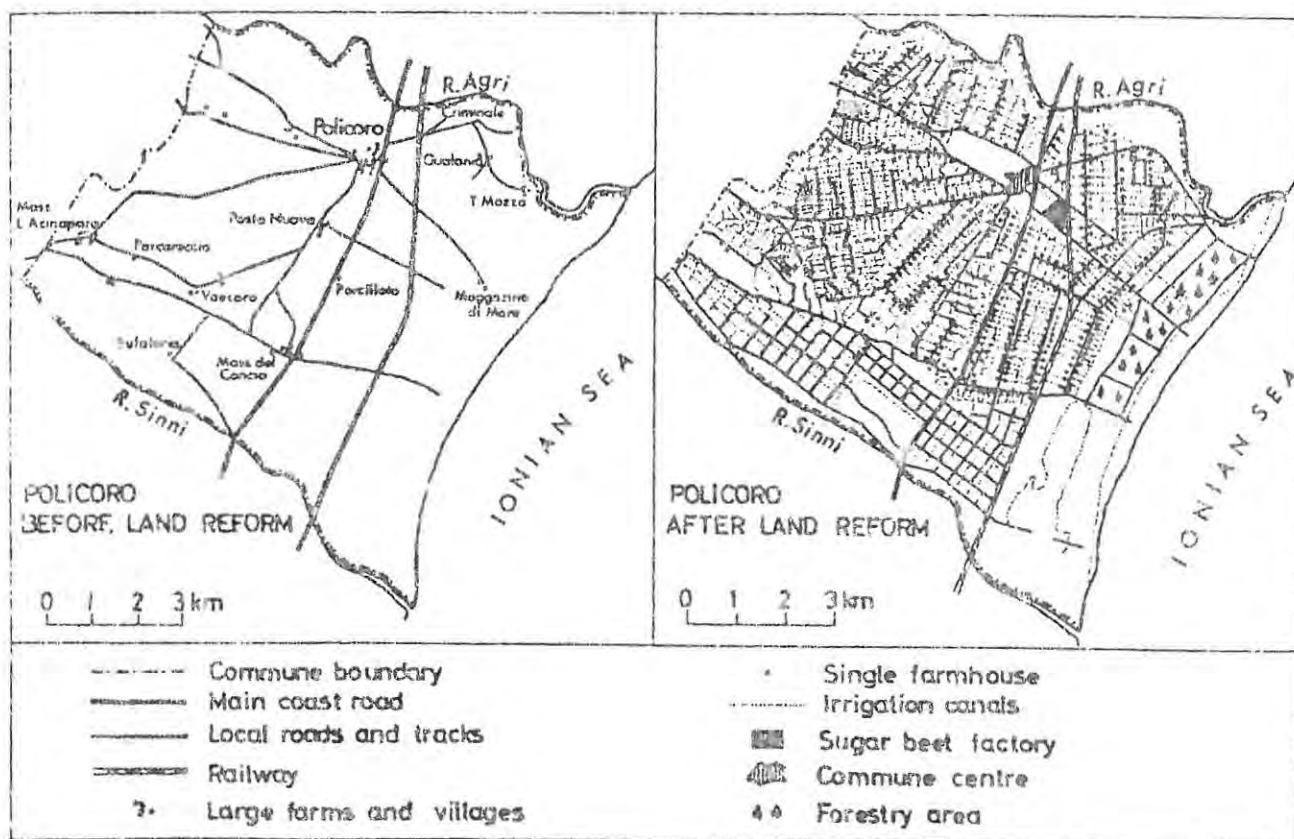
4. The following passage refers to part of the southern Italian region of Basilicata:-

'Across the narrow seaboard tract a number of small rivers, almost dry in summer, bring down the drainage and much of the top soil from the Lucanian Apennines. Until 30 years ago much of the coast plain was only accessible to the railway passing along the coast. It was dominated by large estates, most of several thousand hectares. There were scarcely any inter farm roads and the population was sparse, because much of the seaboard was marshy and malarial.'

The two maps below show one commune 'Policoro' before and after land reform took place in this region, the aim of which was to change from an extensive farming system and achieve a new landscape with high income yielding crops.

POLICORO BEFORE LAND REFORM

POLICORO AFTER LAND REFORM



(a) From the evidence of the maps, indicate the changes that have taken place in the commune, and the extent of increased settlement opportunities resulting from land reform.

(b) What inferences can be made from the data given about the environmental, social and economic effects of land reform in this commune?

(c) What further data or field investigation would be required to complete an assessment of the effects of land reform in this area?

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SPECIMEN QUESTION PAPER
GEOGRAPHY - ADVANCED LEVEL

Paper 2

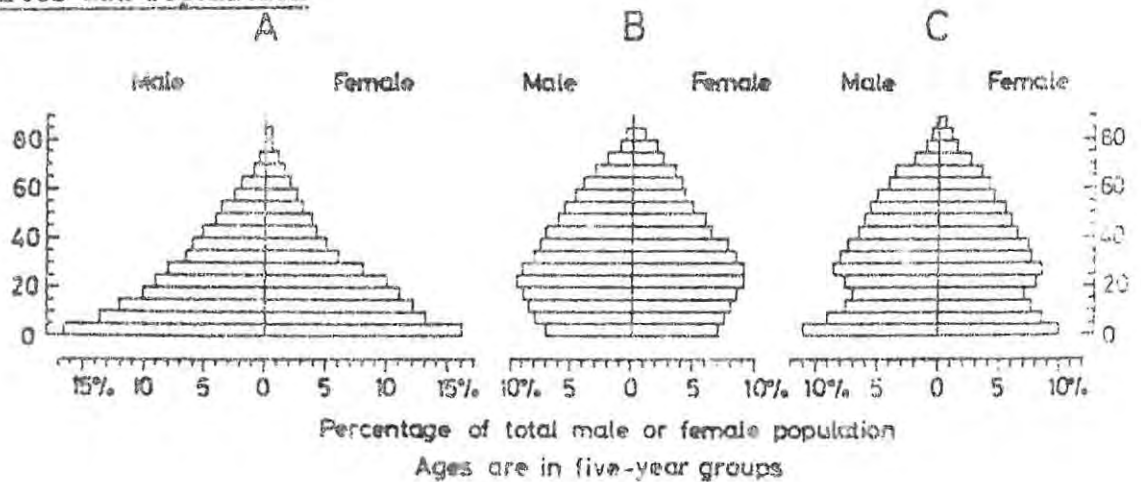
626/2

2 hours allowed

Answer EIGHT questions in the spaces provided. Additional sheets of paper may be used which must be clearly named and firmly attached to this answer book.

Resources and Population

1.



For any two of the population pyramids above -

(a) explain briefly how each population pattern is likely to have evolved.

(b) state the implications of the trends in each for the future population structure and its economic consequences.

2. (a) Distinguish between renewable and non-renewable resources.

(b) The following statistics give information about world production and reserves of uranium.

<u>Year</u>	<u>Production</u> <u>metric tons</u>
1967	15 649
1968	17 448
1969	17 557
1970	18 201
1971	18 581
1972	19 623
1973	19 754
1974	18 461
1975	19 793

Reserves known in January 1975: 1 080 500 metric tons

(United Nations Statistical Year-Book, 1976)

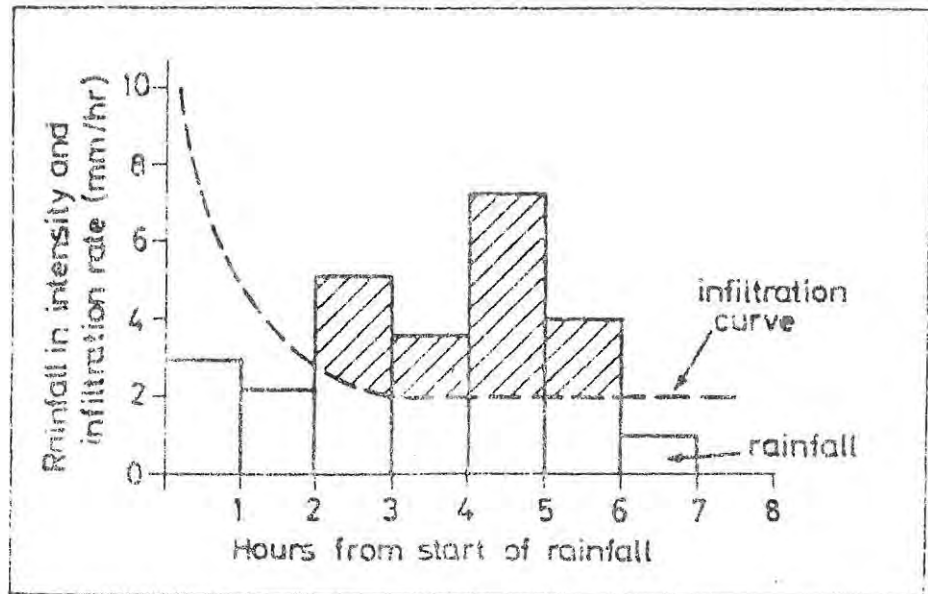
(i) What conclusion do you reach from the study of the statistics concerning the duration of the world's uranium resources?

(ii) What developments might invalidate your conclusion?

Hydrosphere and Lithosphere

3. (a) Define 'infiltration rate'.

(b) The graph given below shows rainfall and infiltration rates over a short period of time.



Using this data:-

- (i) Explain the shape of the infiltration curve.
- (ii) Explain the significance of the shaded area of the graph.
- (iii) Describe the consequences of renewed rainfall in excess of 2 mm/hr after hour 7.

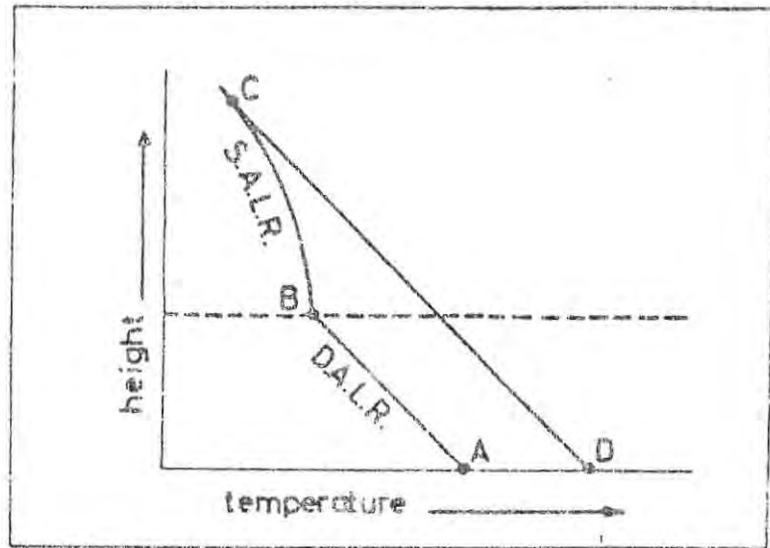
(a) Draw a simple annotated diagram to show a rotational coastal landslide.

(b) In what ways can landslides be initiated?

(c) Briefly discuss the implications of rapid coastal landsliding on man's activities.

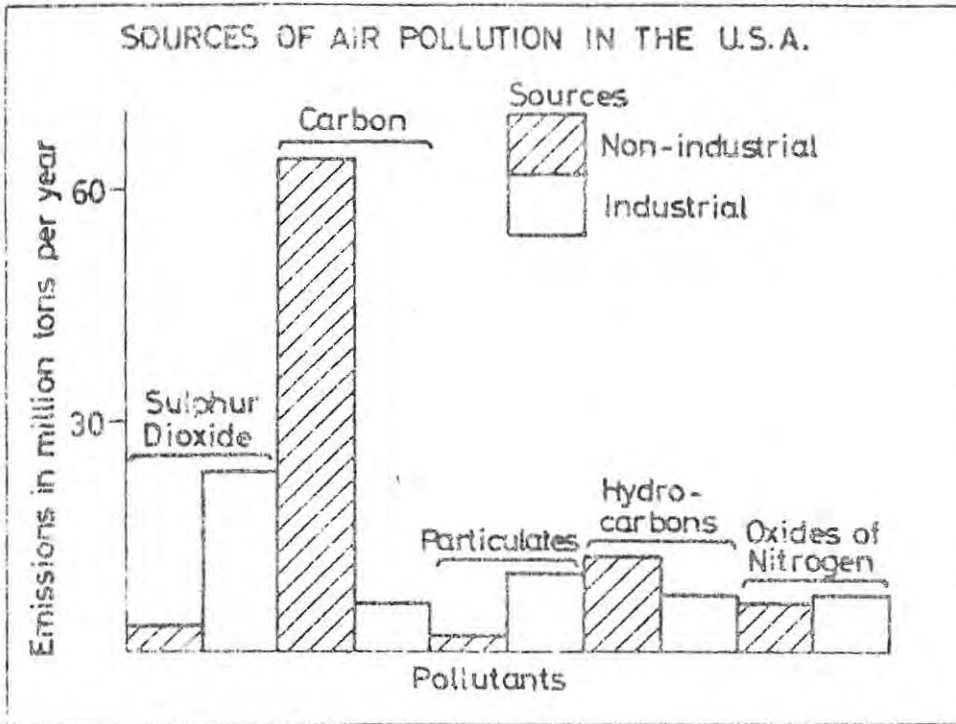
Atmosphere

5. In the diagram below, line ABC represents the decrease in temperature of a rising mass of air, and line CD the temperature rise of the same air descending.



- (a) What is the meaning of the terms 'dry adiabatic lapse rate' and 'saturated adiabatic lapse rate'?
- (b) What happens to the rising mass of air at point B?
- (c) Name and give the essential effect of the weather phenomena illustrated by this graph.

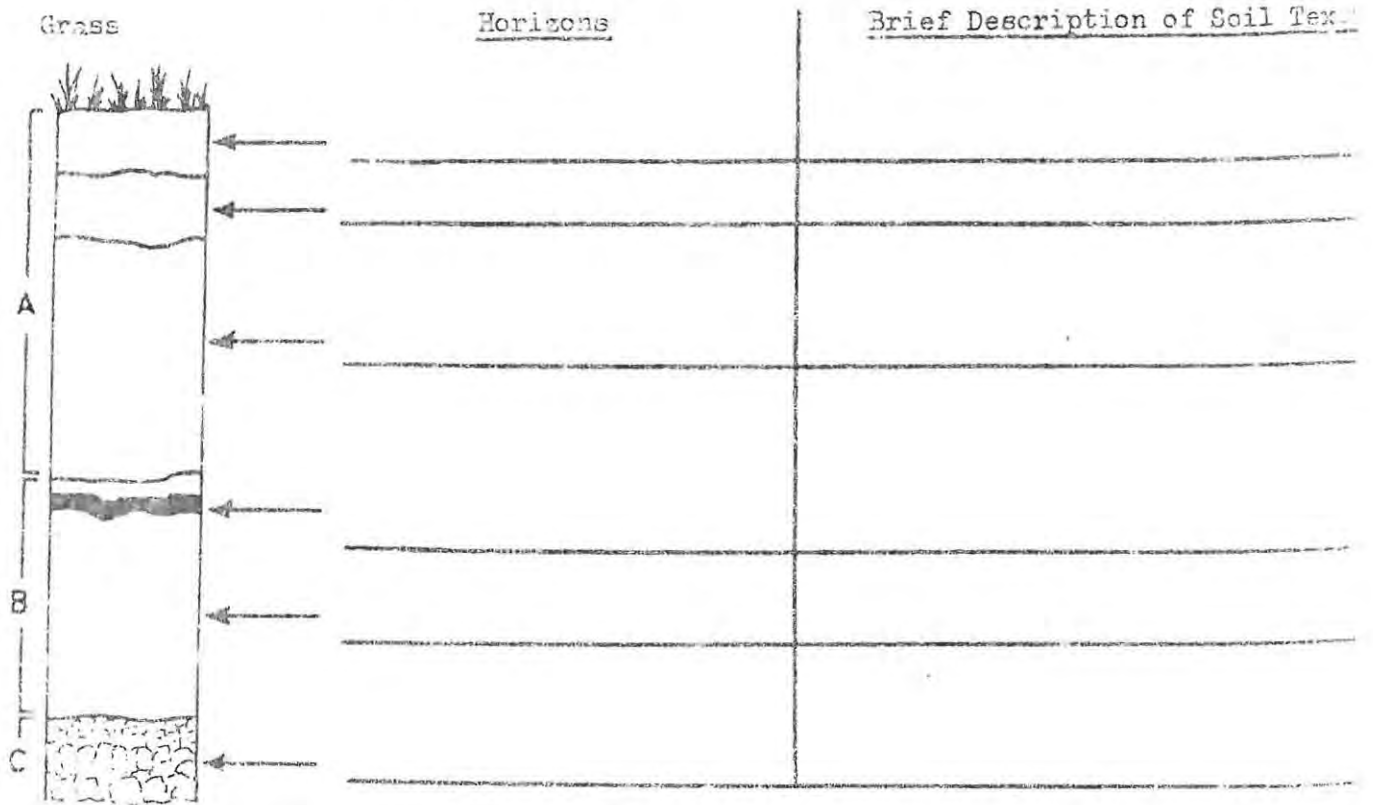
- (a) Study the graph provided below and state the chief source of pollutants shown by the shading in the graph.



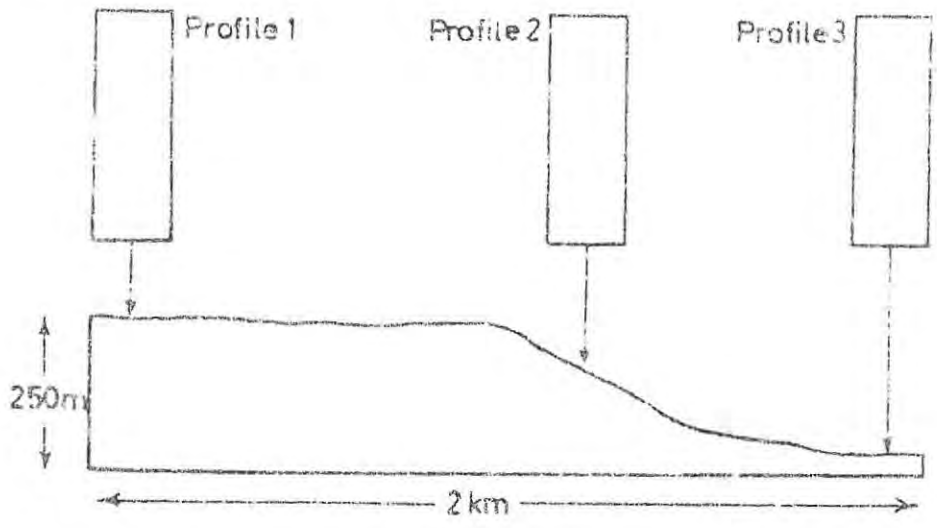
- (b) List the chief effects of air pollution.

- (c) Briefly state how changes in weather caused by air pollution may be harmful to mankind.

7. (a) Study the diagram below of a typical soil profile of a podsol and complete the spaces on the right of it.



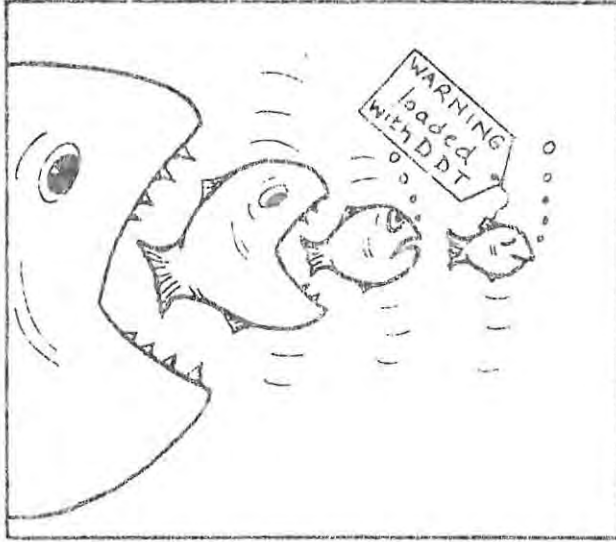
(b) Complete the three profiles to show changes in the profiles of podsol down slope.



(c) State the reasons why coniferous forests are often found on podsol.

8. (a) Explain briefly the geographical significance of the concept of 'trophic levels'.

(b) How does the cartoon below illustrate or develop this concept?

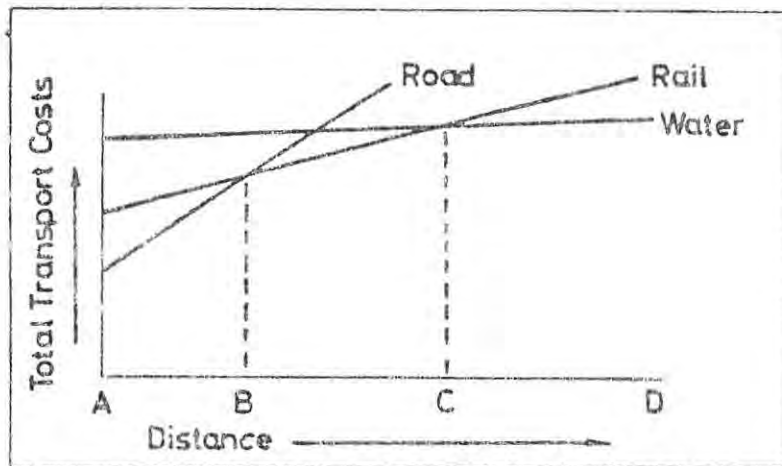


(c) What means of controlling pests are available in addition to chemical pesticides?

Agriculture, Industry, Transport and Trade

9. (a) List three assumptions in the von Thünen model of agricultural land use.
- (b) Draw a simplified map or diagram showing the pattern of land use zones predicted by von Thünen around a large town through which flows a navigable river.
- (c) Give three reasons why von Thünen's theory does not constitute a complete explanation of agricultural land use patterns.

- (a) What basic concepts of cost/distance relationships in transport are indicated by the graph below?



- (b) What other factors must be considered in analysing the comparative economics of road, rail and water transport?
- (c) In what circumstances does air transport become economic despite high capital and running costs?

Settlement

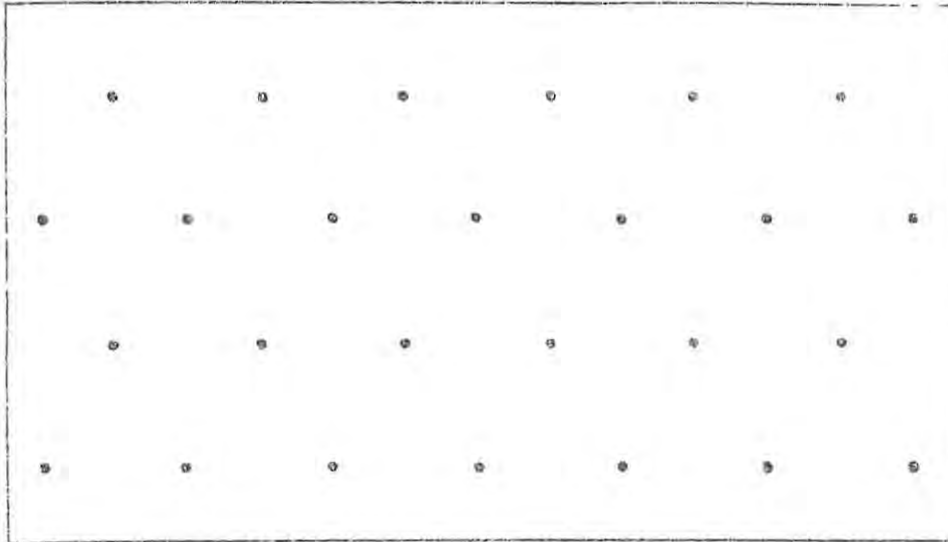
11. (a) Define the term 'central business district'.

(b) What criteria are used to delimit a central business district?

(c) What are the difficulties of using these criteria in field investigation?

12. (a) How does Christaller define 'centrality'?

(b) Complete the diagram below to show a $K = 3$ network.



(c) List and explain the implications of three assumptions in Christaller's model.

Geographical perspectives on current problems

13. (a) What do you understand by the term 'poverty cycle'?

(b) Draw a simple diagram to illustrate this cycle.

(c) Briefly comment on the possible consequences to this cycle of:-

(i) an increase in population;

(ii) a natural disaster.

14. The statistics given below relate to one specific developed country and one specific developing country.

a) What are the significant population trends in developing countries as revealed by the statistics?

	Birth Rate (per thousand)	Death Rate (per thousand)	Urban population (percentage)	Workforce in Agriculture (as a percent- age of total workforce)	Adult Literacy (percentage of total adult population)
DEVELOPED COUNTRY	15	10	74	3	98
DEVELOPING COUNTRY	45	15	15	29	22

Source: United Nations 1975.

b) Why are birth rates in developing countries relatively high?

c) What adverse effects are caused to a country's economy by having a high percentage of illiterate people?

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SPECIMEN QUESTION PAPER
GEOGRAPHY - ADVANCED LEVEL

Paper 3

626/3

3 hours allowed

Answer FOUR questions, selecting ONE from each section. Where appropriate, sketch maps and diagrams should be used to illustrate answers. Refer to relevant regional and case studies where appropriate. The use of an approved atlas is allowed.

Section 1.

1. For any one country or region discuss the relationship between the distribution of population and the availability of resources. Explain to what extent this relationship may be regarded as an optimum one.
2. With reference to one specific area:
 - a) discuss the factors influencing utilisation and/or conservation of any one non-renewable resource.
 - b) assess any inferences or problems for the future which could derive from present management of this resource.
3. Contrast the population structure and trend of population growth of one named developed country and one named developing country. Analyse the factors which help to explain the contrasts which you have noted.

Section 2.

4. Outline the natural processes by which material is moved in the coastal environment. Assess the effects of man's interference with or adaptation of the shoreline in specific locations.
5.
 - a) Describe the nature and formation of the physical features produced at the major plate boundaries of the earth's crust.
 - b) With reference to any one area at a plate boundary assess the advantages and disadvantages on man's activities of the related processes and landforms.

1. a) Outline the ways in which urban areas may affect local weather conditions.
- b) Citing specific examples, describe and account for the differences between the climatic conditions in urban areas and those experienced in the adjacent countryside.

2. a) Outline the factors which influence the relative humidity of the atmosphere.
- b) Discuss the physical effects of saturation of the atmosphere at or near ground level and assess their influence on man's activities.

3. a) With reference to any two processes of soil erosion, outline the factors which are responsible for the soil erosion and the human problems caused by it.
- b) For one area affected by soil erosion:
 - i) indicate the methods used to combat this erosion and
 - ii) assess the contribution of these methods to the physical and economic recovery of the area.

4. With reference to any one forest or grassland ecosystem:
 - a) describe the nature of its energy and nutrient flows;
 - b) state the problems which arise in the management of the resources within the chosen ecosystem.

Section 3.

10. With reference to examples taken from both developed and developing countries, examine the effects of government policy on the location and structure of manufacturing industry.

11. EITHER Discuss the provision and use of railway networks in developed as against developing countries
OR Discuss the provision and use of railway as against road networks in developing countries.

12. With reference to specific examples which you have studied, compare the factors which have influenced the development of (a) nucleated and (b) dispersed patterns of rural settlement.

13. By reference to one major town or city which you have studied, explain the extent to which models of urban structure aid in an understanding of its morphology and patterns of land use.

Section 4.

14. Analyse the problems of unequal regional prosperity within one developed or one developing country.

15. "National Parks represent areas of outstanding beauty which are there for all to enjoy". With reference to specific national parks discuss the implications of this statement mentioning the chief problems and suggesting possible solutions.

16. With reference to examples from more than one area, outline the problems facing attempts either to improve agricultural methods and production in developing lands or to intensify and specialise production from farms in developed lands.

NORTH WEST REGIONAL EXAMINATIONS BOARD

CERTIFICATE OF SECONDARY EDUCATION

GEOGRAPHY—Paper 1

Friday, 25 April, 1980 (Afternoon)

1½ hours + 15 minutes for reading the questions

Surname.....

Other Names.....

Centre.....

Centre No.....

Title of Atlas.....

Spend the first fifteen minutes reading the questions. Do not begin writing until you are told to do so.

Answer, in the spaces provided, **Question A1**,

- one question from Section B,
- one question from Section C,
- one question from Section D.

The marks for each question or part question are shown in brackets.

The end of each question is indicated by a black line.

You may use your atlas at any time during the examination and reading time.

If you do not have enough space for an answer you may continue on a supplementary sheet. At the end of the examination place any supplementary sheets you have used inside this paper with the question to which they refer and fasten them securely.

Write in this column the numbers of the questions answered from Sections B, C and D
B
C
D

For the Examiner's use only	
A1	
B	
C	
D	
Total	

Section A The British Isles (multiple-choice)	See pages 2-4
Section B The British Isles as a Whole	See pages 5-9
Section C The North West Region	See pages 10-15
Section D One other Region—	
Cornwall, Devon, Somerset and Avon	See pages 16-19
East Anglia and the Fens	See pages 20-23
South and Central Wales.....	See pages 24-26
The Highlands and Islands of Scotland	See pages 27-30

The Ordnance Survey Map extract is for Questions A1, B3 and C4; the separate sheet of photographs (*Inset*) is for Questions B2, B3, C4, C5, D7, D8 and D9.

[Turn over

SECTION A — THE BRITISH ISLES (MULTIPLE-CHOICE)

Answer Question A 1 in the spaces provided.

- A 1. Indicate the most suitable answer by placing the appropriate letter in the space alongside the question. The question below is completed for you as an example.

EXAMPLE The highest mountain in Wales is

- A Pen-y-ghent.
- B Plynlimon.
- C Cader Idris.
- D Snowdon.
- E Ben Nevis.

- (a) In which of the following areas would you expect to see dry valleys and escarpments?

- A The Cheviots.
- B The Southern Uplands.
- C The North Downs.
- D The Cumbrian Mountains.
- E The Wicklow Mountains.

- (b) In which of the following areas would you expect to see pot holes (swallow holes) and limestone scars?

- A The Cotswolds.
- B The Yorkshire Dales.
- C The South Downs.
- D The Lincolnshire Wolds.
- E The Yorkshire Wolds.

Refer to the Ordnance Survey map extract provided for (c), (d) and (e).

- (c) The correct six figure grid reference for the bridge by which the M63 crosses the Manchester Ship Canal is

- A 782036.
- B 746003.
- C 970756.
- D 756970.
- E 766976.

- (d) The distance between junctions 15 and 18 on the M62 is

- A 2 km.
- B 4 km.
- C 6 km.
- D 8 km.
- E 10 km.

(e) In grid square 8106 (Whitefield) the main type of land use is

- A textile mills and factories.
- B commercial and shopping premises.
- C an industrial estate.
- D closely packed terrace houses.
- E modern residential estates.

(f) Which of the following motorways links Liverpool and Manchester with West Yorkshire?

- A M6.
- B M56.
- C M61.
- D M62.
- E M66.

For (g), (h), (i) and (j) refer to Map 1 (see page 4).

(g) Which of the following is the main type of farming in area F?

- A Dairy farming.
- B Sheep rearing.
- C Beef cattle rearing.
- D Market gardening.
- E Fruit growing.

(h) Town X is mainly

- A a chemical manufacturing centre.
- B a dormitory town.
- C a fishing port.
- D a shipbuilding town.
- E a mining centre.

(i) Which of the following industries employs most workers in town Y?

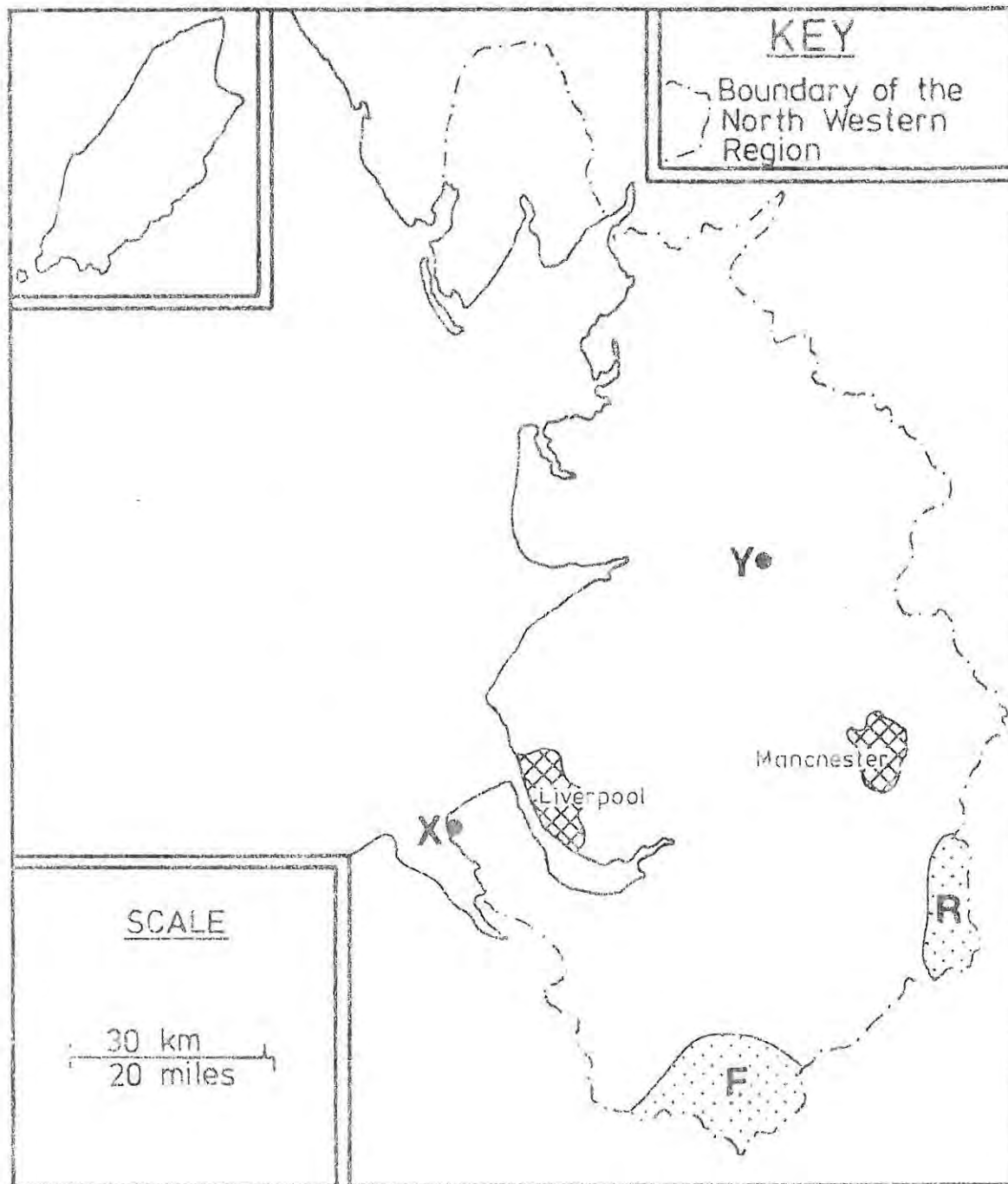
- A Textiles.
- B Chemicals.
- C Motor vehicles.
- D Brewing.
- E Flour milling.

(Question A 1 is continued on page 4)

(Question A 1 continued)

- (j) The main rock type in area R is
 - A Carboniferous Limestone.
 - B Triassic Sandstone.
 - C Coal Measures.
 - D Borrowdale Volcanics.
 - E Millstone Grit.

[10]

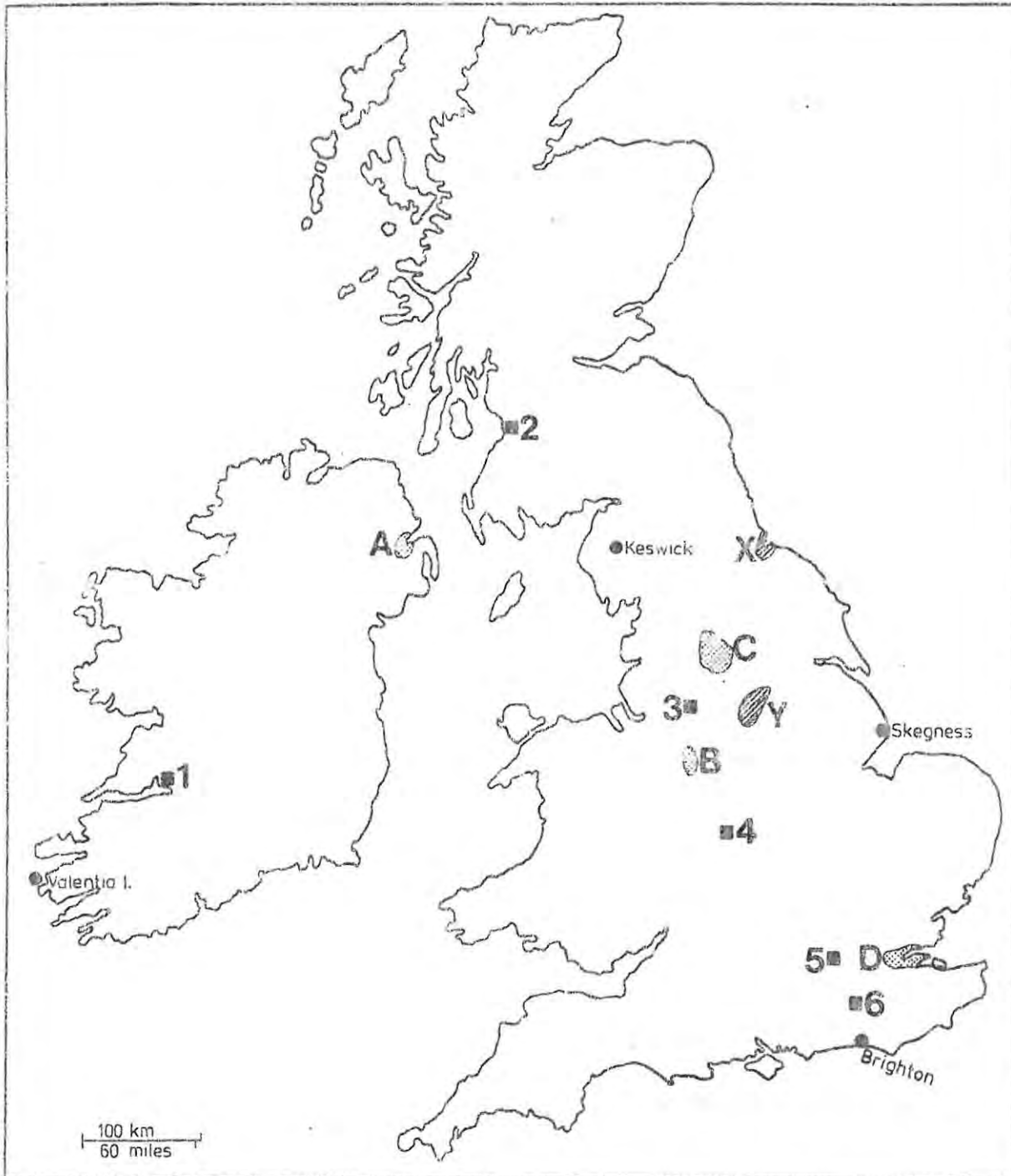


Map 1

SECTION B — THE BRITISH ISLES AS A WHOLE

Answer either Question B 2 or Question B 3 in the spaces provided.

2. Study Map 2 (below) and answer the questions which follow.



Map 2

(Question B 2 is continued on page 6)

Question B 2 continued)

- (a) Four places are named on Map 2 (Valentia Island, Keswick, Skegness and Brighton). Using each name once only, complete the following sentences.

..... with a mean annual rainfall of over 1 500 mm, is one of the wettest places in the British Isles.

..... with a mean January temperature of over 7°C, experiences fewer than 15 days with frost each year.

..... with over 1 750 hours of sunshine each year, is one of the sunniest places in the British Isles.

..... with a mean annual rainfall of 560 mm, is one of the driest places in the British Isles. [4]

- (b) Six of the major airports in the British Isles are marked and numbered 1 to 6 on Map 2. Name two of the airports.

1 2 3
 4 5 6 [2]

- (c) Read the descriptions (below) of four areas shaded and labelled A, B, C and D on Map 2, and complete the sentences which follow by inserting the correct letter.

1. This area has long been famous for pottery manufacture, with coal mined here being used to fire the kilns until recently.
2. Old established industries here include shipbuilding and linen, but both have been declining for several years, resulting in much unemployment.
3. Oil refining and cement manufacture are two of the major industries in this area.
4. Woollen textiles, with the mills originally using water power, are the main industries in this area.

Passage 1 describes the area labelled

Passage 2 describes the area labelled.....

Passage 3 describes the area labelled.....

Passage 4 describes the area labelled..... [4]

(d) Give two reasons favouring the development of steel making in either area X (see Map 2) or area Y.

Area chosen

1

2

[2]

(e) Study Photograph 1 (*Inset*), which was taken in the Lake District, and answer the following questions.

(i) Describe the shape of the main valley and lakes.

.....
.....
.....
.....
.....

(ii) Explain how the lakes and main valley may have been formed.

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[8]

B3. (a) Study the Ordnance Survey map extract provided and answer the following questions.

(i) State the A number of one main (A class) road which is mainly dual carriageway.

.....

(ii) Name two major engineering projects needed in building the M62 between junctions 15 and 17. For each of the engineering projects named give one reason why it was necessary.

Engineering project 1

Reason

.....

Engineering project 2

Reason

.....

[5]

(b) List three different types of land use in grid square 7198.

1

2

3

[3]

(c) Describe the relief in grid square 7804.

.....

.....

.....

.....

[2]

(d) Using map evidence only give two reasons for the location of the power station in grid squares 8001 and 8002.

1

.....

2

.....

[2]

(e) Study Photograph 1, which was taken in the Lake District, and answer the following questions.

(i) Describe and give reasons for the agricultural land use of the area shown in the photograph.

.....

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(ii) State **two** non-agricultural uses of the land which might be found in areas similar to that in the photograph.

1

2

[8]

- (c) Using evidence from the map extract and the photograph state **four** reasons for the growth and development of the Trafford Park Industrial Estate.

1

.....

2

.....

3

.....

4

.....

[4]

- (d) Choose **either** glass making at St. Helens or shipbuilding at Barrow-in-Furness and give **three** reasons favouring its development there.

Town chosen

1

.....

2

.....

3

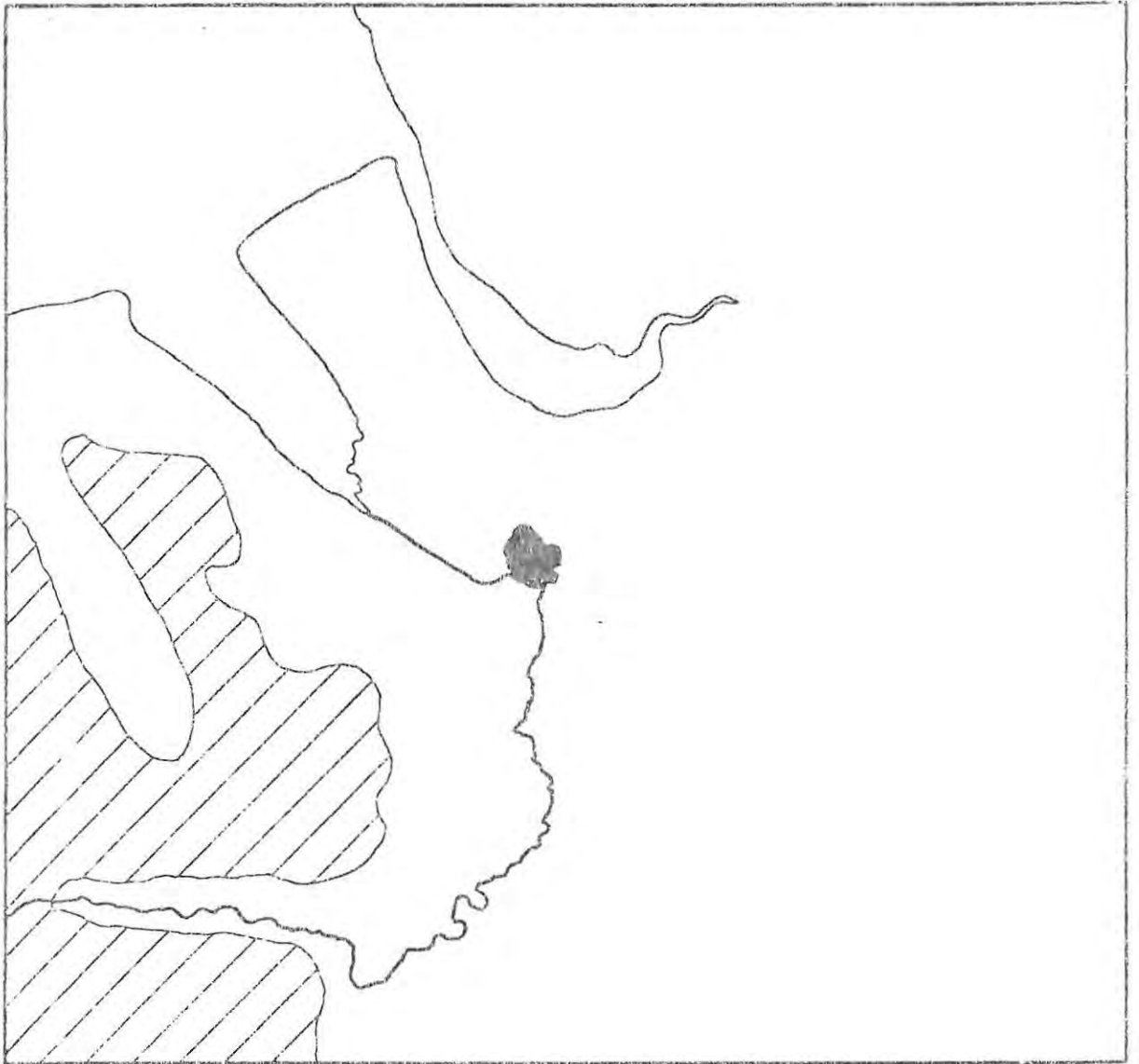
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[3]

(Question C 4 is continued on page 12)

Question C 4 continued)

(e) With the aid of information added to the sketch-map (below) explain the importance of Claster



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5. (a) Study Photograph 3 (*Inset*) which shows part of a New Town in the North West Region, and answer the following questions.

(i) Describe the road network shown on the photograph below area A.

.....

.....

.....

.....

.....

(ii) What is the main function of area A shown on the photograph?

.....

(iii) Describe the buildings and layout of area B on the photograph.

.....

.....

.....

.....

.....

.....

.....

.....

(iv) Give **one** reason why the planners of this New Town placed the buildings in area B in a separate part of the town from area A.

.....

.....

[7]

(Question C 5 is continued on page 14)

(Question C 5 continued)

(b) Choose **one** of the following holiday resorts:

- (i) Ramsey (ii) Southport (iii) Morecambe.

Give **three** reasons favouring the development of the town you have chosen as a resort.

Town chosen.....

1

.....

2

.....

3

.....

(3)

(c) Describe and give reasons for the main features of farming in **either** the Fylde district of Lancashire or the Isle of Man.

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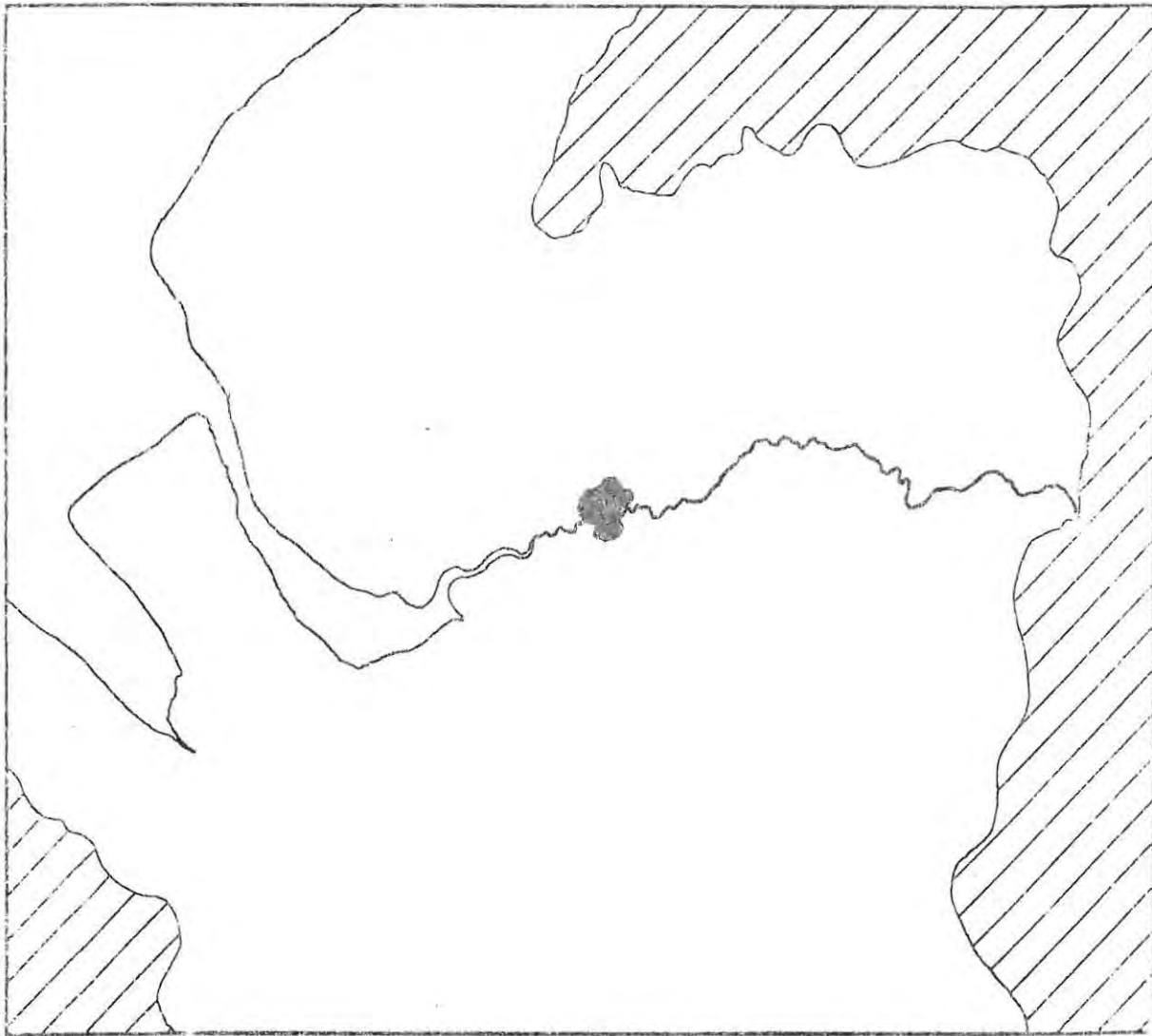
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(5)

(a) With the aid of information added to the sketch-map (*below*) explain the importance of Warrington



.....

.....

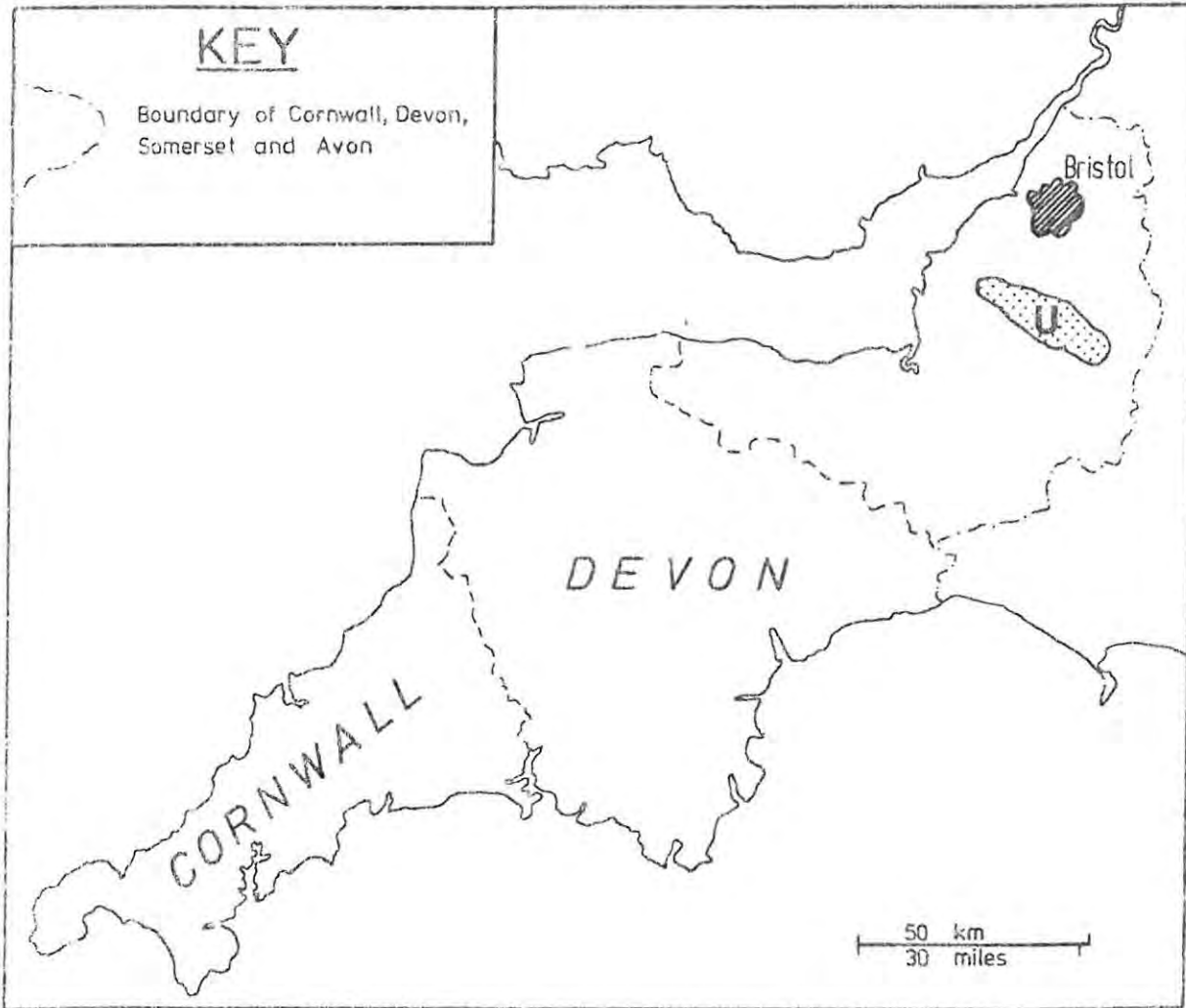
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.....

.....



Map 6

(b) Study the list (below) of selected industries in Bristol and answer the questions which follow.

tobacco chocolate soap sugar refining

(i) Give two reasons favouring the development of these industries in Bristol.

1

.....

2

.....

(ii) Name one other major industry in Bristol.

.....

[3]

(Question D 6 is continued on page 18)

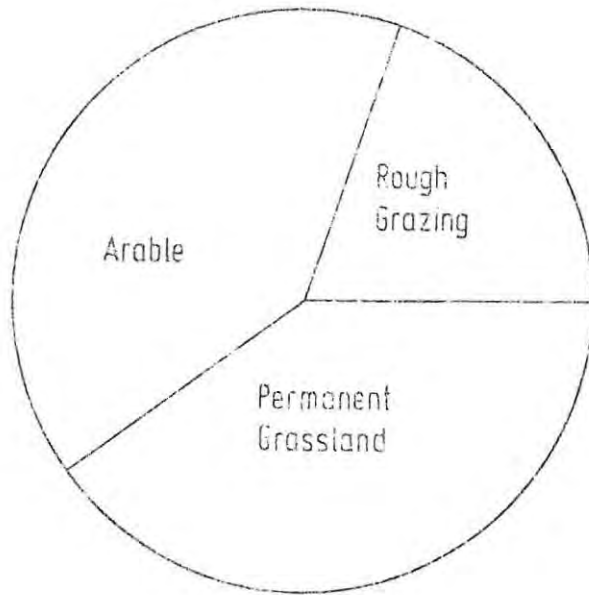
(Question D 6 continued)

(c) Give four reasons favouring the development of tourism in Cornwall.

- 1
- 2
- 3
- 4

[4]

(d) Study the pie graph (below) giving selected information about land use in Devon (see Map 6), and answer the questions which follow.



(i) Approximately what proportion of the land is rough grazing?

.....

(ii) Describe the main types of farming in Devon.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

(iii) Choose one of the types of farming you have described and give two reasons why it is practised in Devon.

Type of farming chosen.....

1

.....

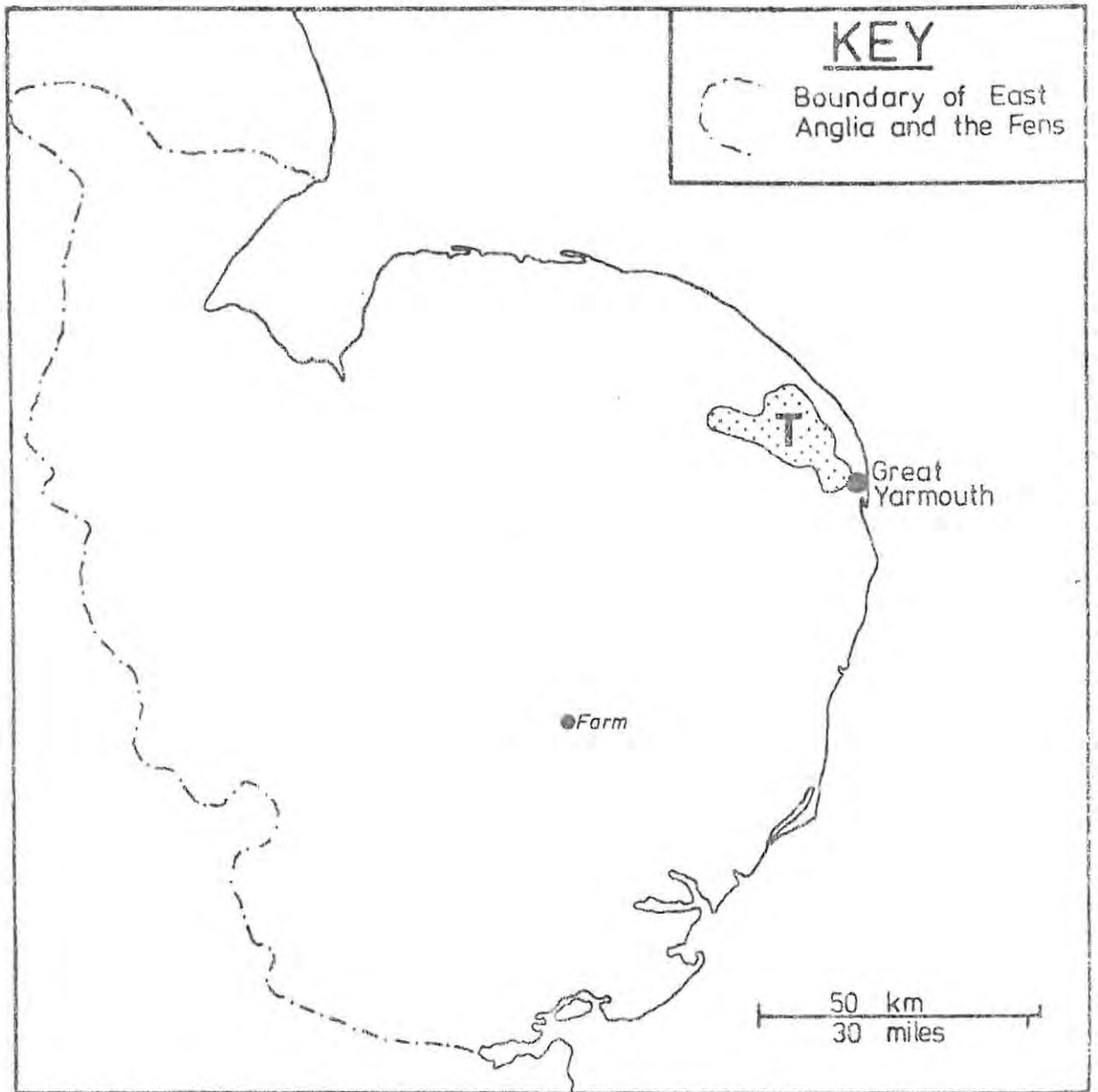
2

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[7]

D7. EAST ANGLIA AND THE FENS

(a) Study Map 7A (below) and answer the questions which follow.



Map 7A

(i) Name the tourist area T.

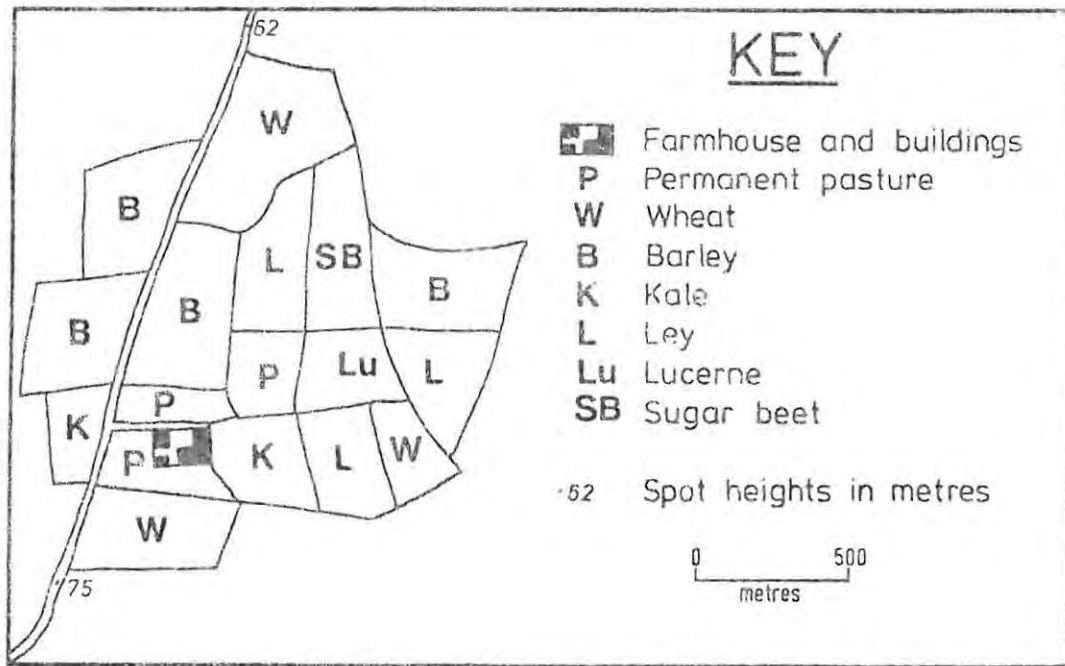
.....

(ii) State one problem which has arisen as a result of the rapid growth of tourism in area T.

.....

.....

- (b) Study Map 7B (below) of a farm in Suffolk and answer the questions which follow. The location of the farm is marked by a dot labelled "Farm" on Map 7A.



Map 7B

- (i) Which crop occupies the largest area on this farm?
-
- (ii) Name one piece of evidence on the map which shows that cattle are kept on the farm.
-
- (iii) What is "ley" grass?
-
-
- (iv) Explain why the fields used as permanent pasture are in the location shown on Map 7B.
-
-
- (v) State one use to the farmer of the sugar beet crop other than its sugar content.
-

(Question D 7 is continued on page 22)

(Question D 7 continued)

(vi) State **two** ways in which the relief and soils of Suffolk favour the type of farming shown on the map.

1

.....

2

.....

[7]

(c) Study the list of towns and selected industries (*below*) and answer the questions which follow.

Town	Selected Industries
Norwich	brewing, starch, fertiliser
Ipswich	flour milling, fertiliser, sugar refining
Great Yarmouth	canning, freezing
Colchester	brewing

(i) State **one** feature which all the listed industries have in common.

.....

(ii) Select **one** of the industries listed and give **one** reason for its development in the town named.

Name of industry.....in town.....

Reason

.....

(d) Study Photograph 4 (*Inset*) of part of Great Yarmouth and answer the questions which follow. Great Yarmouth is marked on Map 7A.

(i) Name the river marked by the letter *A*.....

(ii) State **two** pieces of evidence on the photograph which show that Great Yarmouth is a holiday resort.

1

2

(iii) State **two** pieces of evidence on the photograph which show that Great Yarmouth is also a commercial port.

1

2

[5]

(e) (i) What are the man-made features labeled *B* on Photograph 4?

.....

(ii) What is the purpose of these features?

.....

.....

(iii) Explain how these features achieve their purpose.

.....

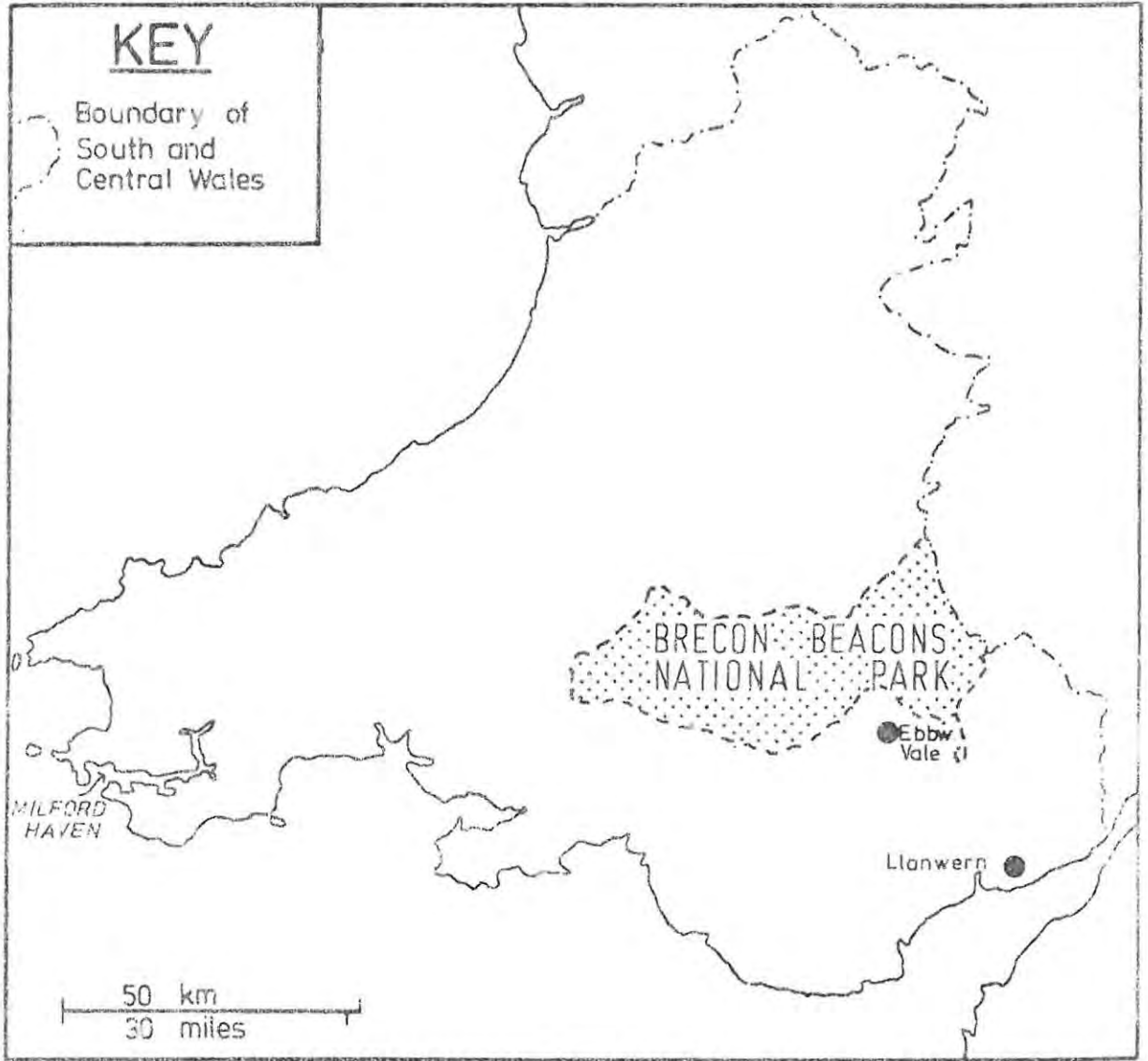
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[4]

D 8. SOUTH AND CENTRAL WALES

(a) Study Map 8 (below) and answer the questions which follow.



Map 8

(i) The Brecon Beacons National Park is shown on Map 8. Give three reasons why a National Park was established in this area.

- 1
- 2
- 3

(ii) Iron and steel making is being phased out at the Ebbw Vale works. In 1963 iron and steel production began at Llanwern. (*Ebbw Vale and Llanwern are both marked on Map 8.*) Give two reasons for this change in the location of iron and steel production in South Wales.

1

.....

2

.....

[5]

(b) Study the table (*below*) and answer the questions which follow.

Coal Mining Operations in South Wales 1950-1980

<i>Number of collieries</i>			
<i>1950</i>	<i>1960</i>	<i>1970</i>	<i>1980</i>
164	118	52	39 (estimated)

(i) Give two reasons for the change shown by the figures.

1

.....

2

.....

(ii) Describe two problems resulting from the closure of collieries.

1

.....

2

.....

(iii) State two ways in which the problems are being overcome.

1

.....

2

.....

[6]

(Question D 8 is continued on page 26)

(Question D 8 continued)

(c) Study Photograph 5 (*Inset*) of part of Milford Haven (*see also Map 8*), and answer the questions which follow.

(i) State **one** piece of evidence on the photograph which shows that Milford Haven is an oil tanker terminal.

.....

(ii) Give **two** reasons favouring the development of Milford Haven as an oil terminal.

1

.....

2

.....

(iii) Much of the area shown on Photograph 5 is in the Pembrokeshire National Park. State **two** reasons why many people have serious doubts and anxieties about the development of Milford Haven as an oil terminal.

1

.....

2

.....

[5]

(d) (i) Explain how the inlet of Milford Haven may have been formed.

.....

.....

.....

.....

.....

(ii) Give **two** pieces of evidence from the photograph which supports your explanation.

1

.....

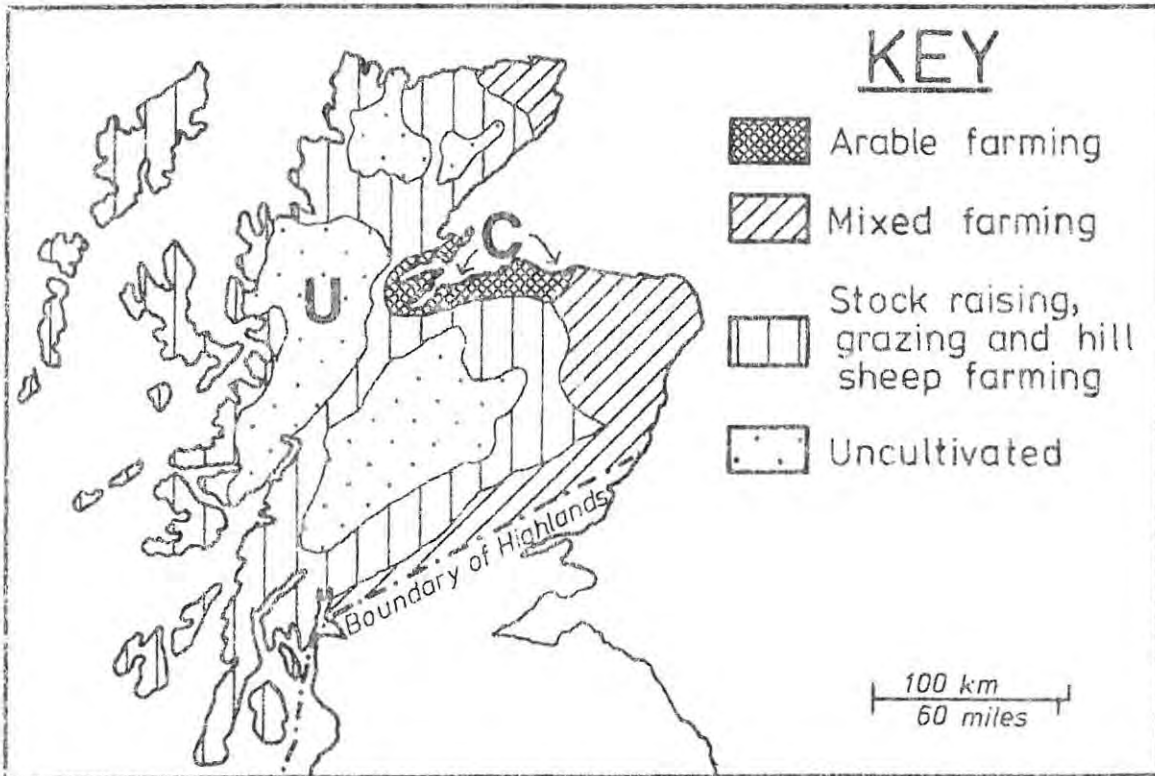
2

.....

[4]

THE HIGHLANDS AND ISLANDS OF SCOTLAND

(a) Study Map 9A (below) and answer the questions which follow. Map 9A is a simplified land use map.



Map 9A

(i) Give three reasons why area U is uncultivated land.

- 1
- 2
- 3

(ii) Name two crops grown on a large scale in area C.

- 1
- 2

(Question D9 is continued on page 28)

(Question D9 continued)

(iii) Give three reasons favouring arable farming in area C.

- 1
- 2
- 3

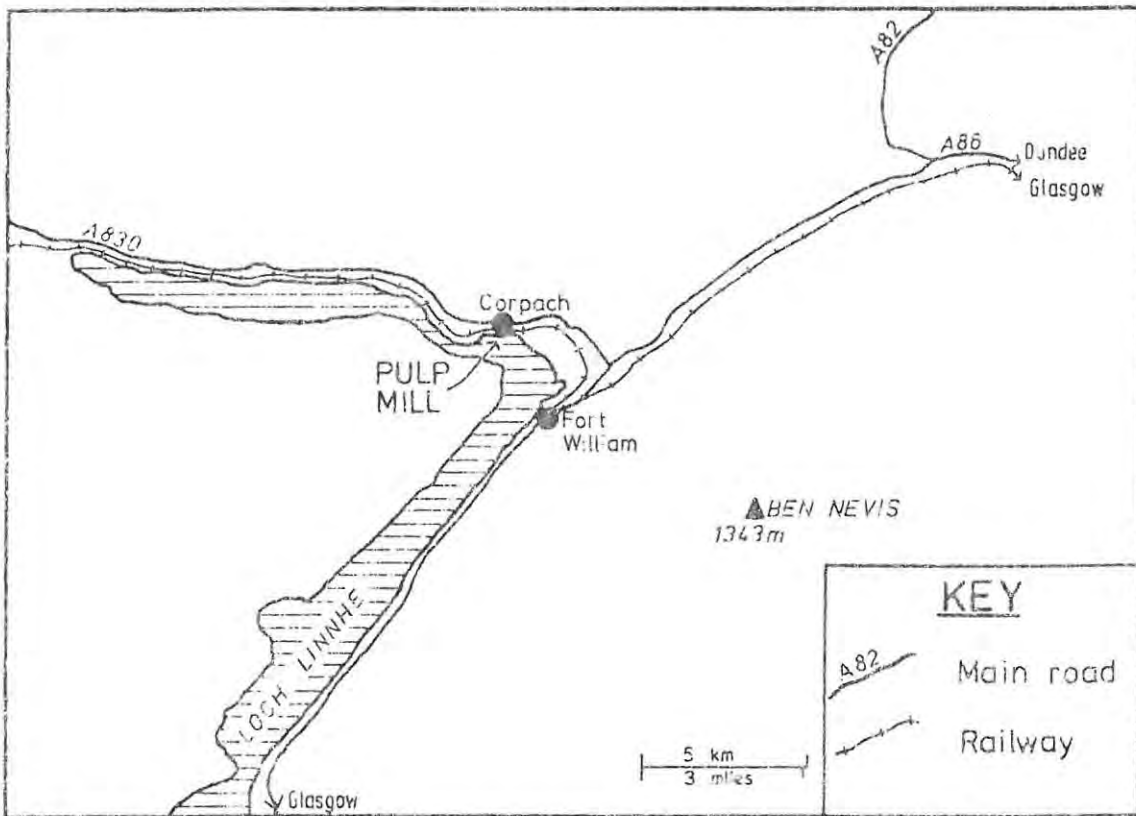
[8]

(b) Give two reasons favouring the development of Aberdeen as a major fishing port.

- 1
- 2

[2]

(c) Study Map 9B (below) showing the location of Scotland's largest pulp mill at Corpach, and answer the question which follows.



Map 9B

Give four reasons why the site at Corpach was chosen for a pulp mill.

- 1
- 2
- 3
- 4

[4]

(Question D 9 is continued on page 30)

(Question D 9 continued)

(d) Study Photograph 6 (*Inset*) which shows part of Aviemore and answer the questions which follow.

(i) The part of the photograph within the pecked line and labelled *T* contains many developments concerned with the growing tourist industry. Describe four features in area *T* which are concerned with the new tourist developments.

1

.....

2

.....

3

.....

4

.....

(ii) Using evidence on the photograph only give two reasons favouring the tourist developments on this site.

1

.....

2

.....



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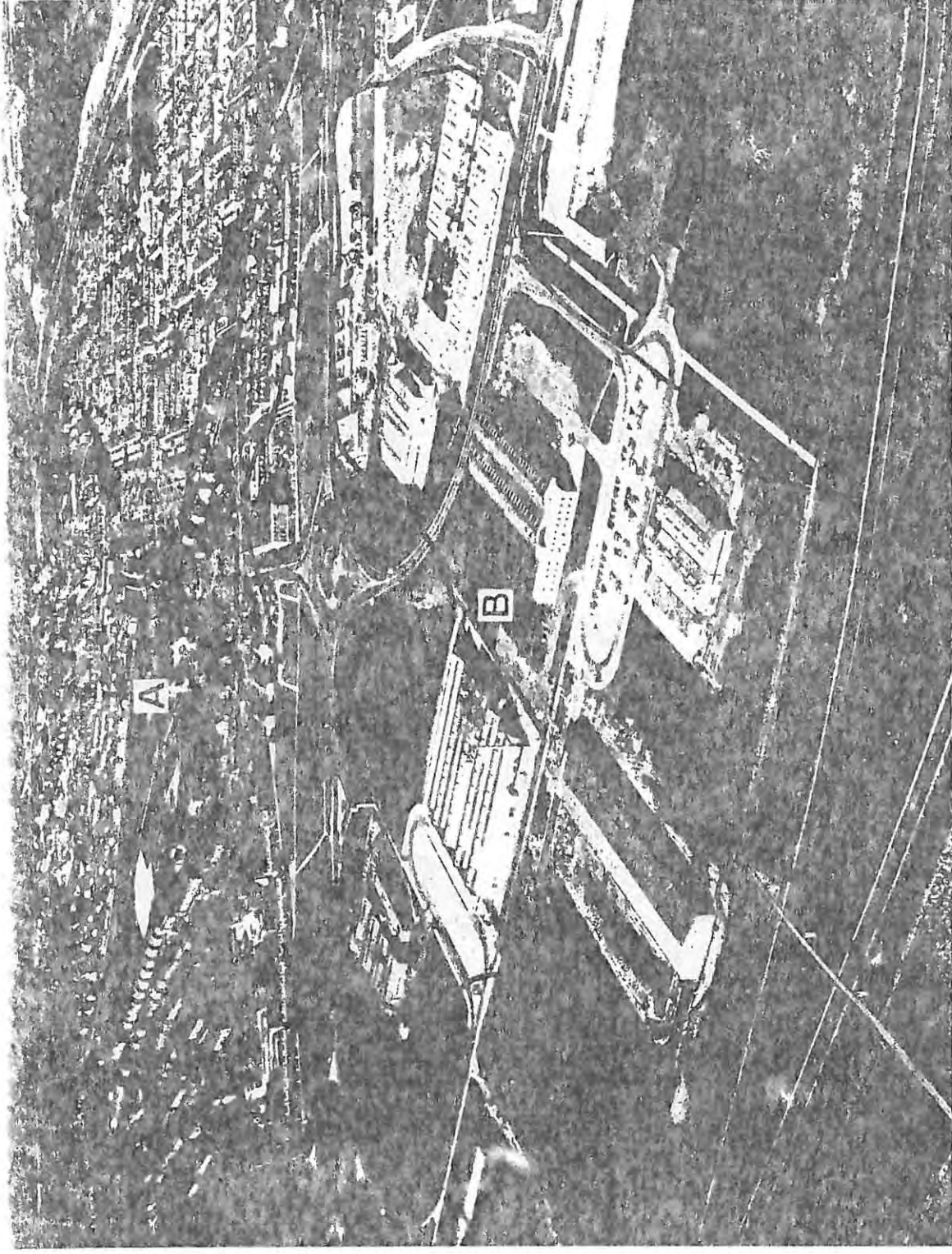
PHOTOGRAPH 1

[Turn over



PHOTOGRAPH 2

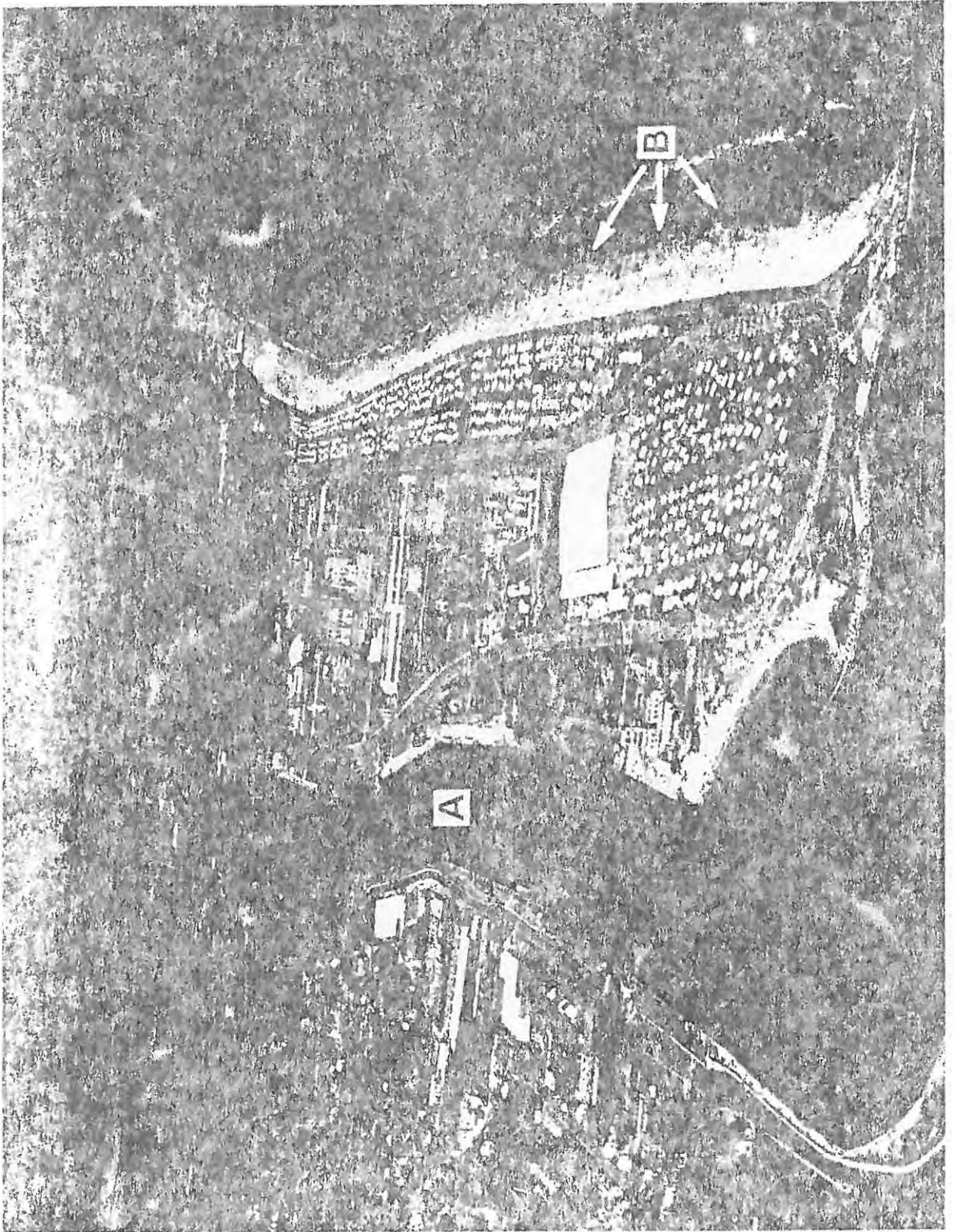
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PHOTOGRAPH 3

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PHOTOGRAPH 4

PHOTOGRAPH 4

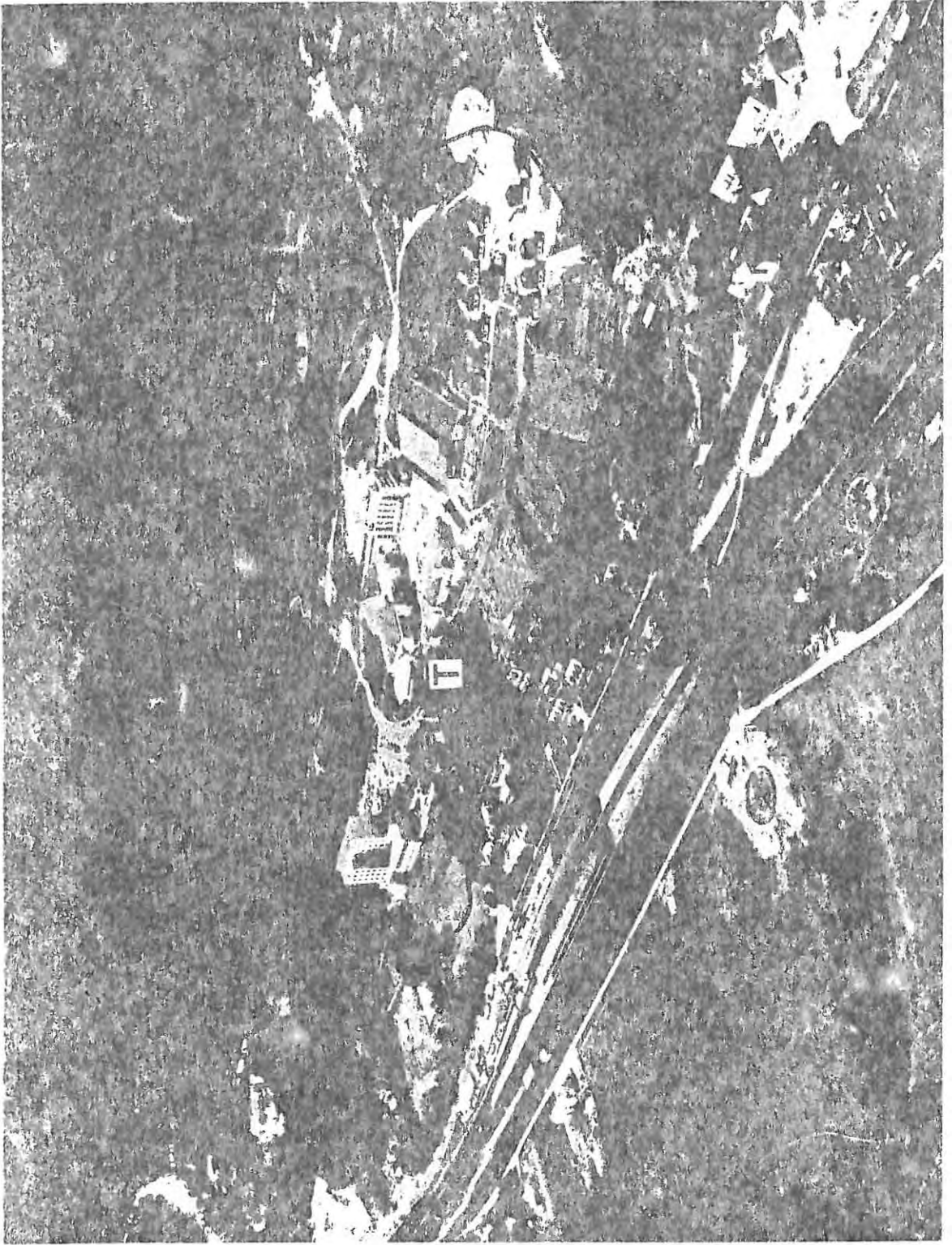
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TOGRAPH 5

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PHOTOGRAPH 6

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SECTION A—WORLD MAP

Question A 1. You must answer this question.



World Map 1

(a) On World Map 1 (*opposite*) five areas are shaded and numbered 1, 2, 3, 4 and 5. A brief description of each area is given below.

- P. This area is a very large plain with deep, stone-free soils. Initially used for cattle rearing, with gaucho herdsmen, farming is now concerned with the cultivation of wheat, maize and alfalfa which is used for fattening cattle.
- Q. One of the largest concentrations of heavy industry in the world, this area has the advantage of power from the continent's largest coalfield. Steel is one of the main products, with sheet steel used in car manufacture.
- R. In this lowland lives one of the greatest concentrations of rural population in the world. Many of the people are peasants living in communes, growing rice as the staple crop.
- S. This is a desert area immensely rich in petroleum much of which is exported. Some of the oil wealth is being used to modernize the countries in the region, both industrially and agriculturally.
- T. Wine and fruit are two of the best known agricultural products of this area. The cultivation of fruit is favoured by the very warm, sunny, dry summers. Much of the wine is exported.

Select three of the passages given above and write the letter of the passage opposite the number of the area it describes.

Area 1 is described in passage

Area 2 is described in passage

Area 3 is described in passage

Area 4 is described in passage

Area 5 is described in passage

[3]

(b) On World Map 1 three areas X, Y and Z are marked. During the past few years each area has been affected by either an earthquake, or a cyclone or a drought. Complete the sentences below with the appropriate letter.

Area.....has experienced a cyclone.

Area.....has experienced a drought.

Area.....has experienced an earthquake.

[3]

[Turn over

(c) Third World countries most seriously affected by poverty often have high birth rates and falling death rates. Explain the terms (i) high birth rates and (ii) falling death rates.

- (i)
 -
 - (ii)
 -
- [2]

(d) In the U.S.A. wheat yields are 1.7 tonnes per hectare whereas in most of the developing countries of Asia, Africa and Latin America they average only 0.7 tonnes per hectare. Suggest two ways in which the yields of crops in developing countries could be increased.

- 1
 -
 - 2
 -
- [2]

(e) Study the graphs (*opposite*) showing world energy consumption and answer the questions which follow.

(i) State two changes in the pattern of consumption shown by the graphs.

- 1
-
- 2
-

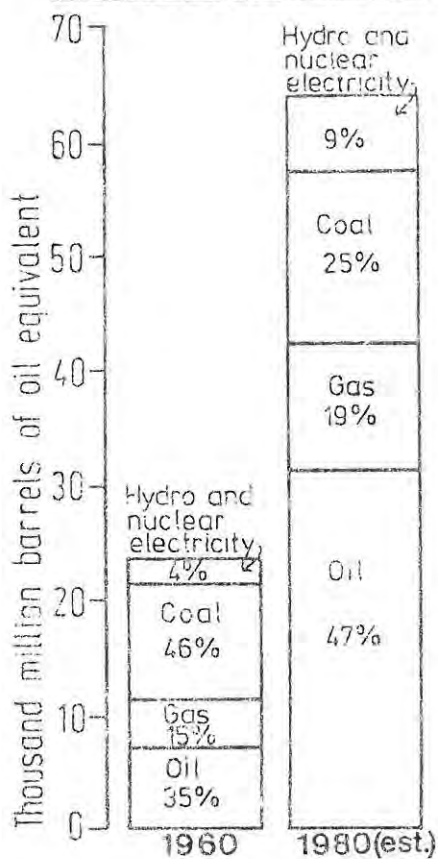
(ii) Give two reasons which help to explain the changes you have stated.

- 1
-
- 2
-

(iii) Give two reasons why many people are seriously concerned about the changes.

- 1
-
- 2
-

WORLD ENERGY CONSUMPTION



(f) Choose either Photograph 1 or Photograph 2 (*Inset*) and answer the following questions.

Either Photograph 1

(i) State two pieces of evidence on the photograph which show that it was taken on a plantation.

1

2

(ii) Describe what the worker is doing to the trees.

.....

.....

.....

.....

(Question A 1(f) is continued on page 6)

(Question A I(f) continued)

- (iii) Name the product obtained from the trees.....
- (iv) State two features of the climate experienced in the areas where these trees are grown.
 - 1
 - 2
- (v) On World Map 1 four places are marked by dots and lettered A, B, C and D. In which one of these areas could the photograph have been taken?

Area

Or Photograph 2

- (i) What is the purpose of the embankments labelled E on the photograph?

.....
- (ii) What material is used to make the farm implements?
- (iii) What work are the farmers doing?

.....
- (iv) Why have the farmers flooded the fields?

.....
- (v) Give one reason why the farming shown on the photograph could be classed as intensive.

.....

.....
- (vi) State two features of the climate experienced in this area.
 - 1
 - 2
- (vii) On World Map 1 four areas are marked by dots and lettered A, B, C and D. In which one of these areas could the photograph have been taken?

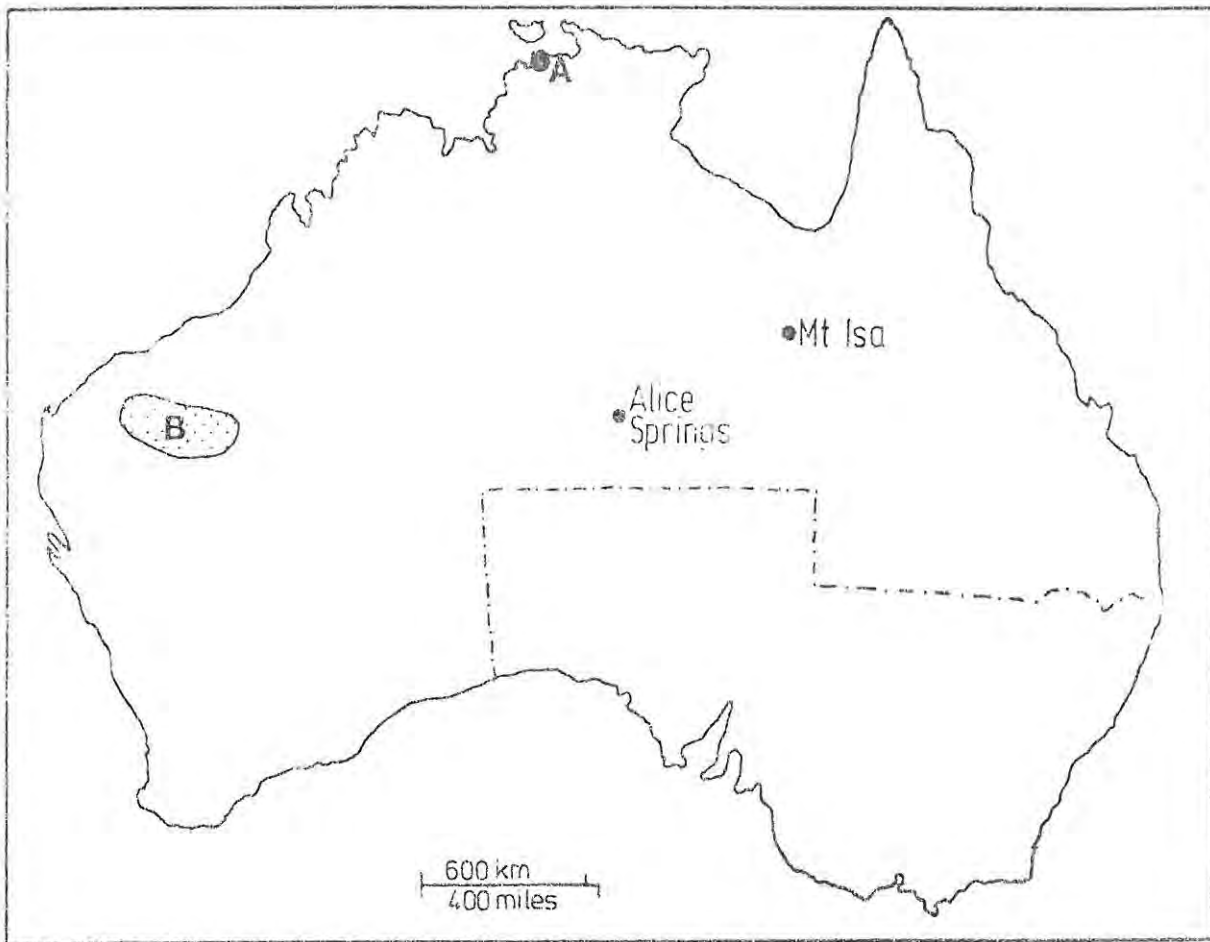
Area

SECTION B

Answer two questions from this section in the spaces provided.

2. AUSTRALIA

(a) Study Map 2A (below) and answer the questions which follow.



Map 2A

(i) Name the town A.....

(ii) Name the mineral mined on a large scale in area B.

.....

[2]

(Question B 2 is continued on page 8)

(d) Study Map 2B (below) which shows the distribution of population in Western Australia, and answer the questions which follow.



Map 2B

(i) Describe the distribution of population shown on Map 2B.

.....

.....

.....

.....

(ii) Give two reasons for the density of population shown in area P.

1

.....

2

.....

(iii) Give two reasons for the density of population shown in area Q.

1

.....

2

.....

[7

[Turn over

B 3. BRAZIL

(a) Study Map 3 (below) and answer the questions which follow.



Map 3

(i) Name the town *A*.....

(ii) Name the river *B*.....

(b) Area C on Map 3 is one of the richest and most varied agricultural regions in Brazil.

(i) Name two crops grown on a large scale in area C.

1 2

(ii) Give three reasons for the rich agricultural development of area C.

1

.....

2

.....

3

.....

[5]

(c) (i) Describe the natural vegetation in area V on Map 3.

.....
.....
.....
.....
.....
.....
.....
.....
.....
.....

(Question B 3(c) is continued on page 12.

Question B 3(c) continued

(ii) Give three climatic reasons why area V has the type of vegetation you have described.

1

.....

2

.....

3

.....

(iii) How is the Brazilian government attempting to develop area V?

.....

.....

[8]

(d) Most of Brazil's industrial development is concentrated in area X shown on Map 3. Some of the largest industrial centres are named. Describe and give reasons for the industrial development of this area.

.....

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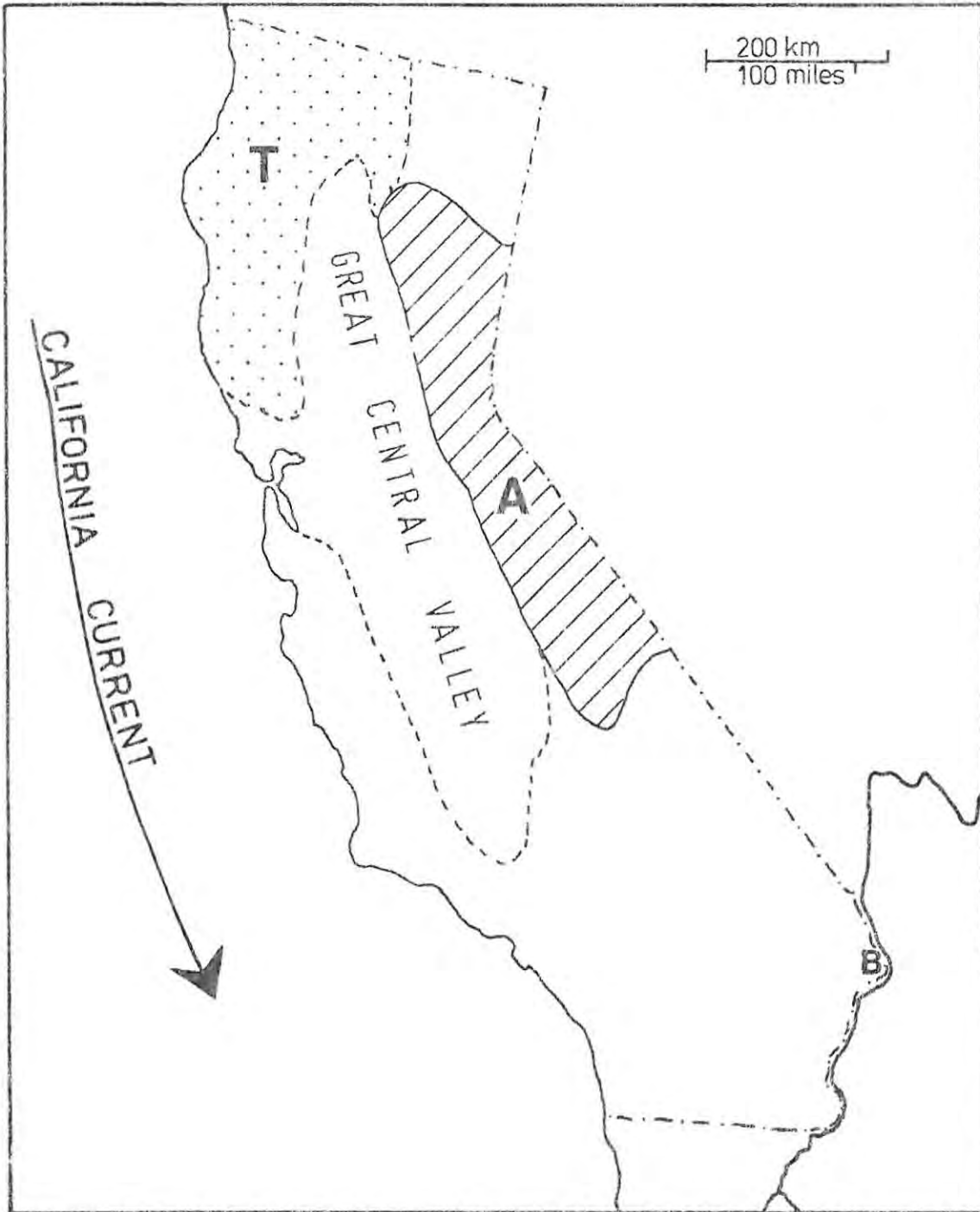
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[8]

B 4. CALIFORNIA

(a) Study Map 4A (below) and answer the questions which follow.



Map 4A

(i) Name the mountain range *A*.....

(ii) Name the river *B*.....

[2]

(Question B 4 is continued on page 14)

(Question B 4 continued)

(b) The California Current is marked on Map 4A. State two effects the Current has on the climate San Francisco.

- 1
-
- 2
-

(c) On Map 4A the chief timber producing region of California is shaded and lettered T.

(i) Name one of the main types of tree growing in area T.

.....

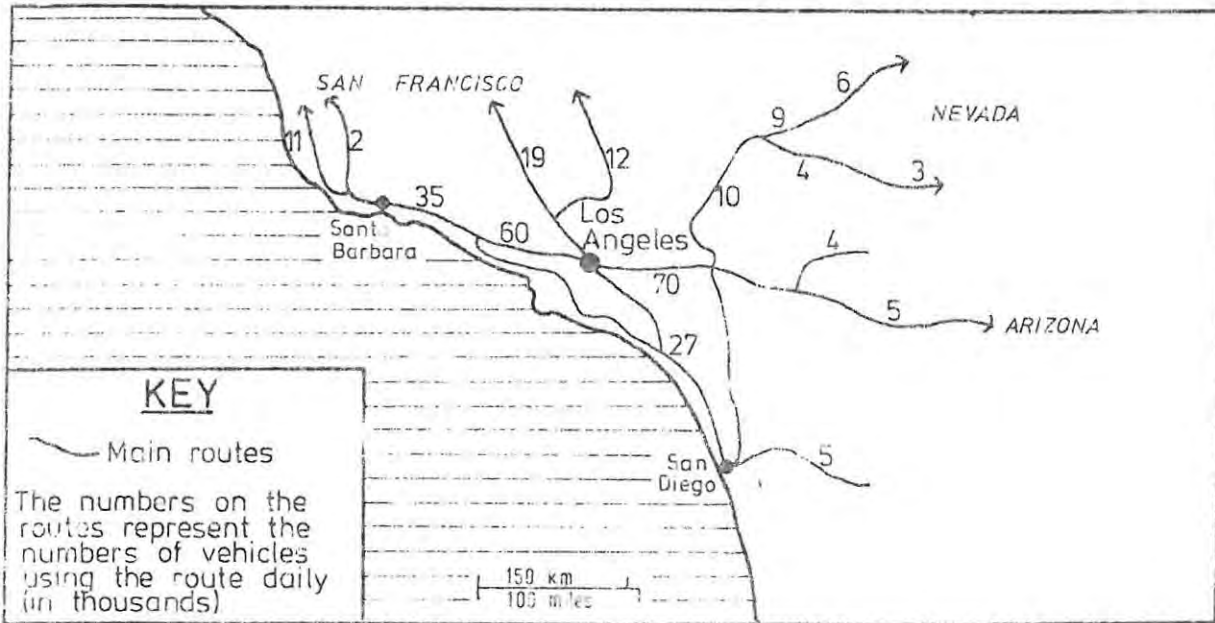
(ii) What is the main product of the timber industry in area T?

.....

(iii) Give three reasons favouring the development of lumbering and timber industries in area T.

- 1
-
- 2
-
- 3
-

(d) Study Map 4B (below) of the Los Angeles area and answer the questions which follow.



Map 4B

(i) Why are there so many vehicles on these roads?

.....
.....

(ii) How is the road system able to carry these large volumes of traffic?

.....
.....

(iii) Describe briefly **one** environmental problem caused by these large volumes of traffic.

.....
.....

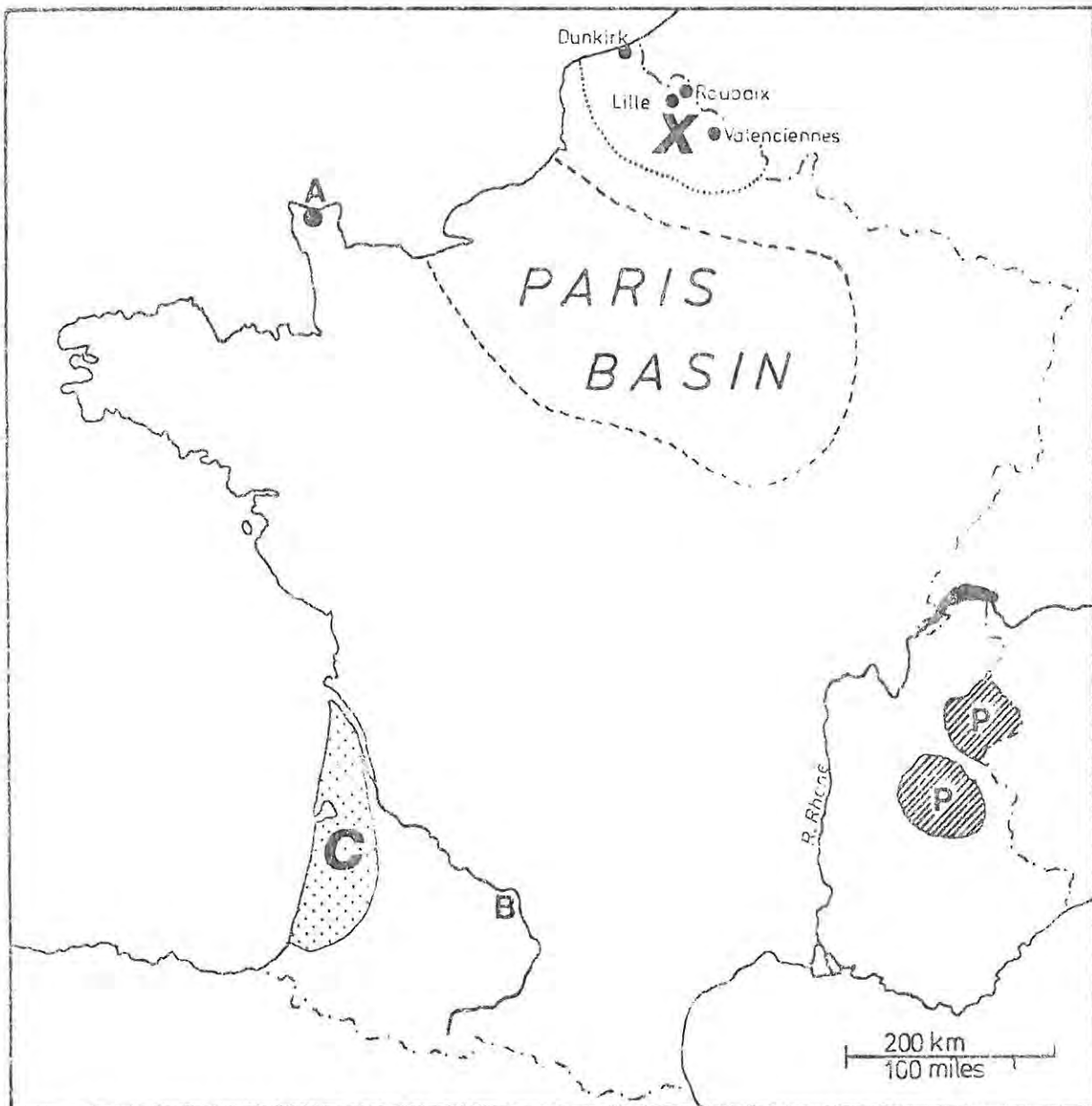
(iv) State **one** measure which has been taken to reduce the environmental problem you have described.

.....
.....

(Question B 4 is continued on page 16)

B 5. FRANCE

(a) Study Map 5 (below) and answer the questions which follow.



Map 5

- (i) Name the town *A*.....
- (ii) Name the river *B*.....
- (iii) Name the main type of land use in area *C*.....

[3]

(Question B 5 is continued on page 18)

(Question B 5 continued)

(b) On Map 5 two of France's National Parks are shaded and labelled *P*. Give **three** reasons why these parks were established in these areas.

- 1
 - 2
 - 3
- [3]

(c) During the last thirty years many large scale engineering projects have been carried out along the river Rhone (see Map 5). State **three** benefits brought about by these engineering projects.

- 1
 - 2
 - 3
- [3]

(d) One of France's major industrial regions is shown and labelled *X* on Map 5. Some of the large industrial centres in the area are named.

(i) Name **two** major manufacturing industries in the area.

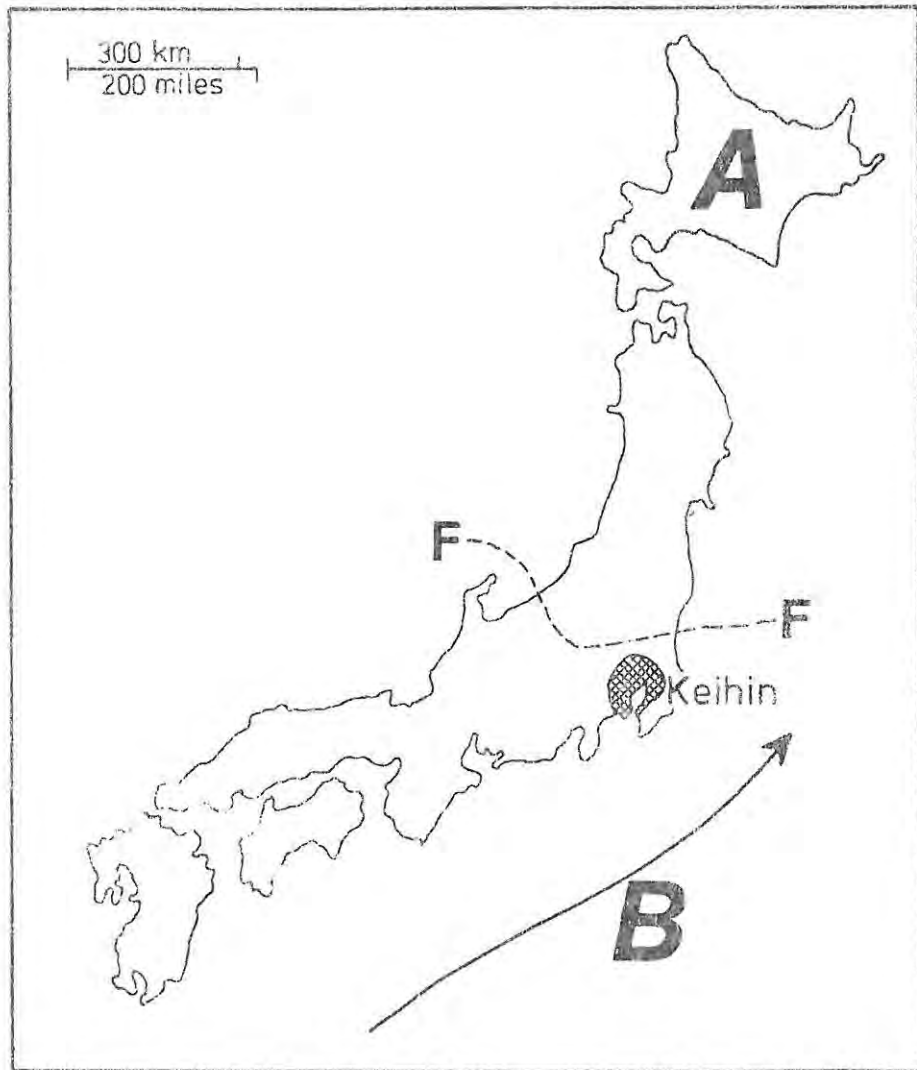
- 1..... 2.....

(ii) Give **four** reasons favouring industrial development in area *X*.

- 1
- 2
- 3
- 4

B 6. JAPAN

(a) Study Map 6 (*below*) and answer the questions which follow.



Map 6

(i) Name the island *A*

(ii) Name the ocean current *B*.....

[2]

(b) Give two reasons why earthquakes occur frequently in Japan.

1

.....

2

.....

[2]

(c) Read this statement about some of Japan's imports. "Japan imports 99% of its crude oil requirements, 99% of its iron ore, 92% of its copper, 85% of its coking coal, and 100% both of its bauxite and nickel."

(i) Name the country from which Japan obtains most of its iron ore.

.....

(ii) Give four reasons which help to explain how Japan has developed as a powerful industrial country even though it needs to import such large proportions of several vital raw materials.

1

.....

2

.....

3

.....

4

.....

[5]

(a) The Keihin conurbation is marked on Map 6.

(i) What do you understand by the term "conurbation"?

.....

.....

(ii) Name one city in the Keihin conurbation.....

(iii) State three environmental problems affecting the Keihin conurbation.

1

.....

2

.....

3

.....

[6]

(Question B 6 is continued on page 22)

B 7. SCANDINAVIA

(a) Study Map 7 (*see page 24*) and answer the following questions.

(i) Name the sea area *A*

(ii) Name the town *B* [2]

(b) (i) State **three** features of Norway's physical geography which favour the production of hydro-electricity.

1

.....

2

.....

3

.....

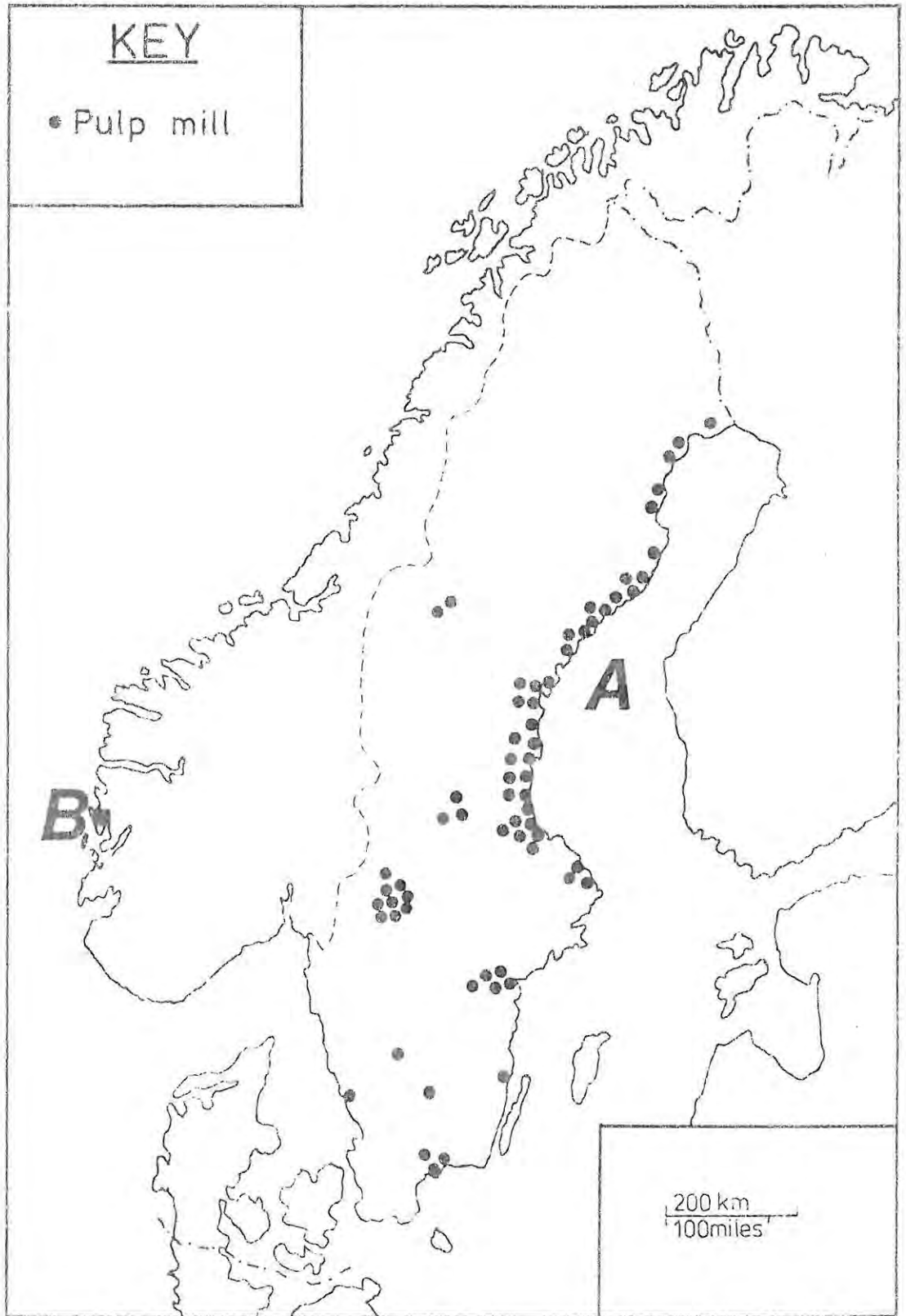
(ii) Name **two** industries whose development in Norway has largely been made possible because this electricity is available.

1

2

[5]

(Question B 7 continued)



Map 7

(c) Map 7 shows the location of pulp mills in Sweden.

(i) Describe the distribution of the pulp mills.

.....

.....

.....

.....

.....

(ii) Give two reasons which help to explain the distribution you have described.

1

.....

2

.....

[4]

(d) Most of the trees grown in Sweden are softwoods.

(i) Name two softwood trees grown in Sweden.

1

2

(ii) Give two reasons why most of the trees are of softwood varieties.

1

.....

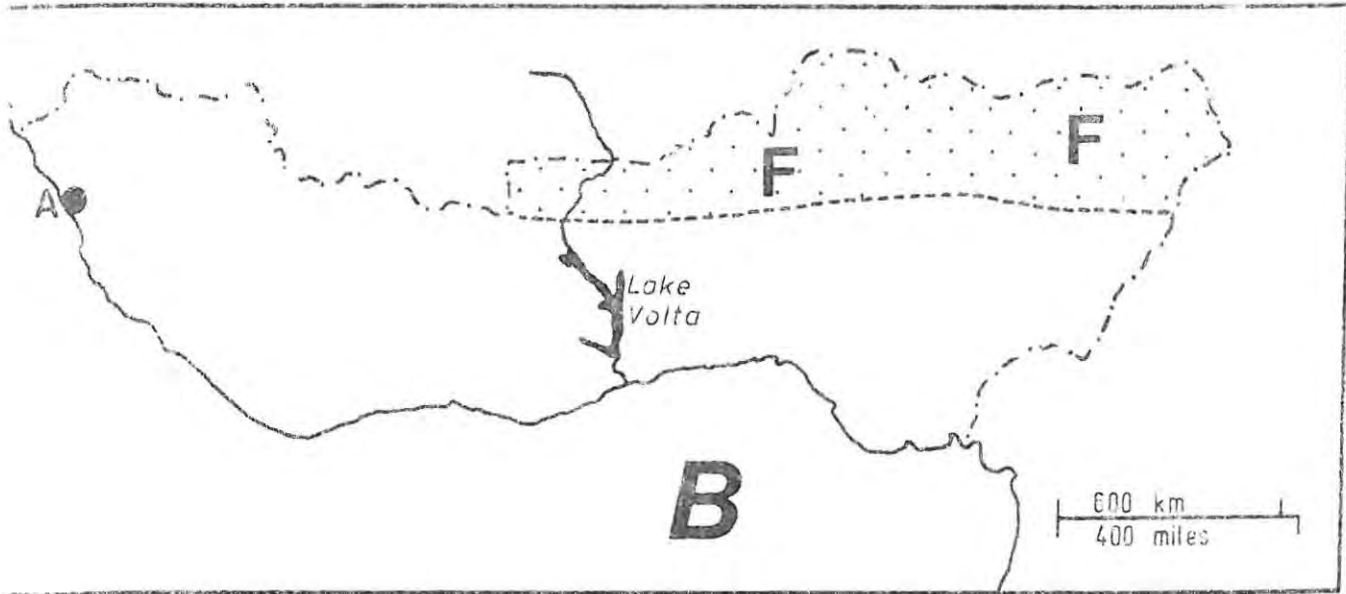
2

.....

[4]

B 8. WEST AFRICA

(a) Study Map 8 (below) and answer the questions which follow.



Map 8

(i) Name the town *A*.....

(ii) Name the sea area *B*..... [2]

(b) The Volta Scheme (see Map 8) cost over £100 million.

(i) State four benefits which the scheme has brought to Ghana.

- 1
- 2
- 3
- 4

(Question B 8(b) is continued on page 28)

(Question B 8(b) continued)

(ii) Describe two problems resulting from the development of the Scheme.

- 1
- 2

[6]

(c) Study Photograph 4 (*Inset*) and answer the questions which follow.

(i) Name the crop shown in the photograph

(ii) Describe the activities shown in the photograph.

-
-
-
-
-
-
-
-

(iii) What is the next process in the production of this crop?

-

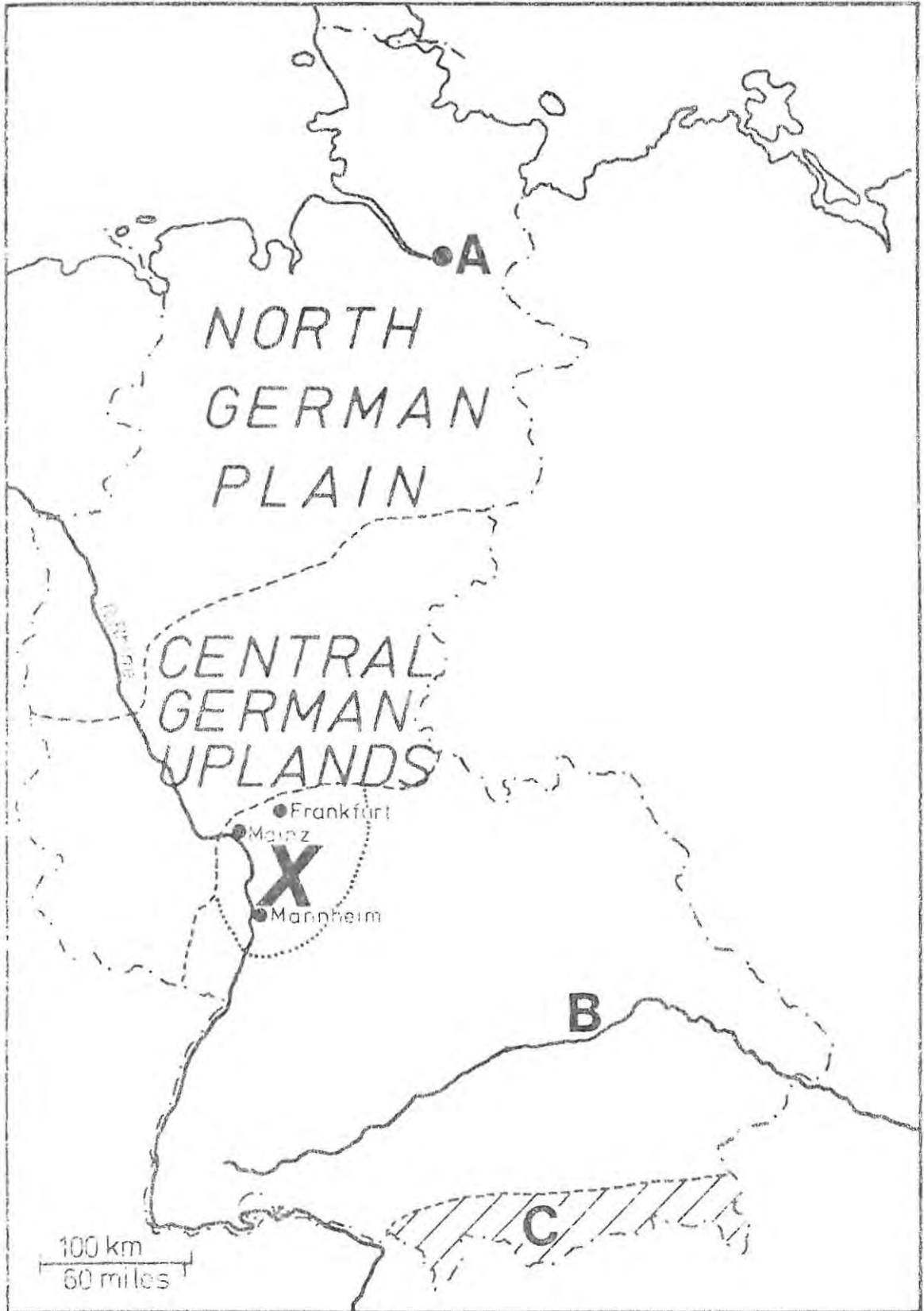
(iv) State two climatic conditions required for the growth of this crop.

- 1
- 2

[7]

WESTERN GERMANY

(a) Study Map 9 (below) and answer the following questions.



Map 9

(i) Name the town *A*

(ii) Name the river *B*

(iii) Name the type of power produced in area *C* [3]

(b) Much of the North German Plain (*see Map 9*) is covered by boulder clay and sands and gravels.

(i) What is boulder clay?

.....

.....

.....

.....

.....

(ii) Explain briefly how parts of the North German Plain came to be covered by boulder clay.

.....

.....

.....

.....

.....

(iii) How were the sands and gravels deposited?

.....

.....

[5]

Question B 9 continued)

(c) Before many of the areas of sands and gravels can be made agriculturally productive they have to be reclaimed.

(i) State one type of vegetation which often covers the areas of sands and gravels before reclamation.

.....

(ii) State one way in which the sands and gravels are reclaimed for farming.

.....

.....

[2]

(d) On Map 9 the Rhine-Main industrial region is marked and labelled by the letter X. Some of the larger manufacturing centres are named on Map 9.

(i) Name two major industries in area X.

1

2

(ii) Give three reasons which help to explain the development of this industrial region.

1

.....

2

.....

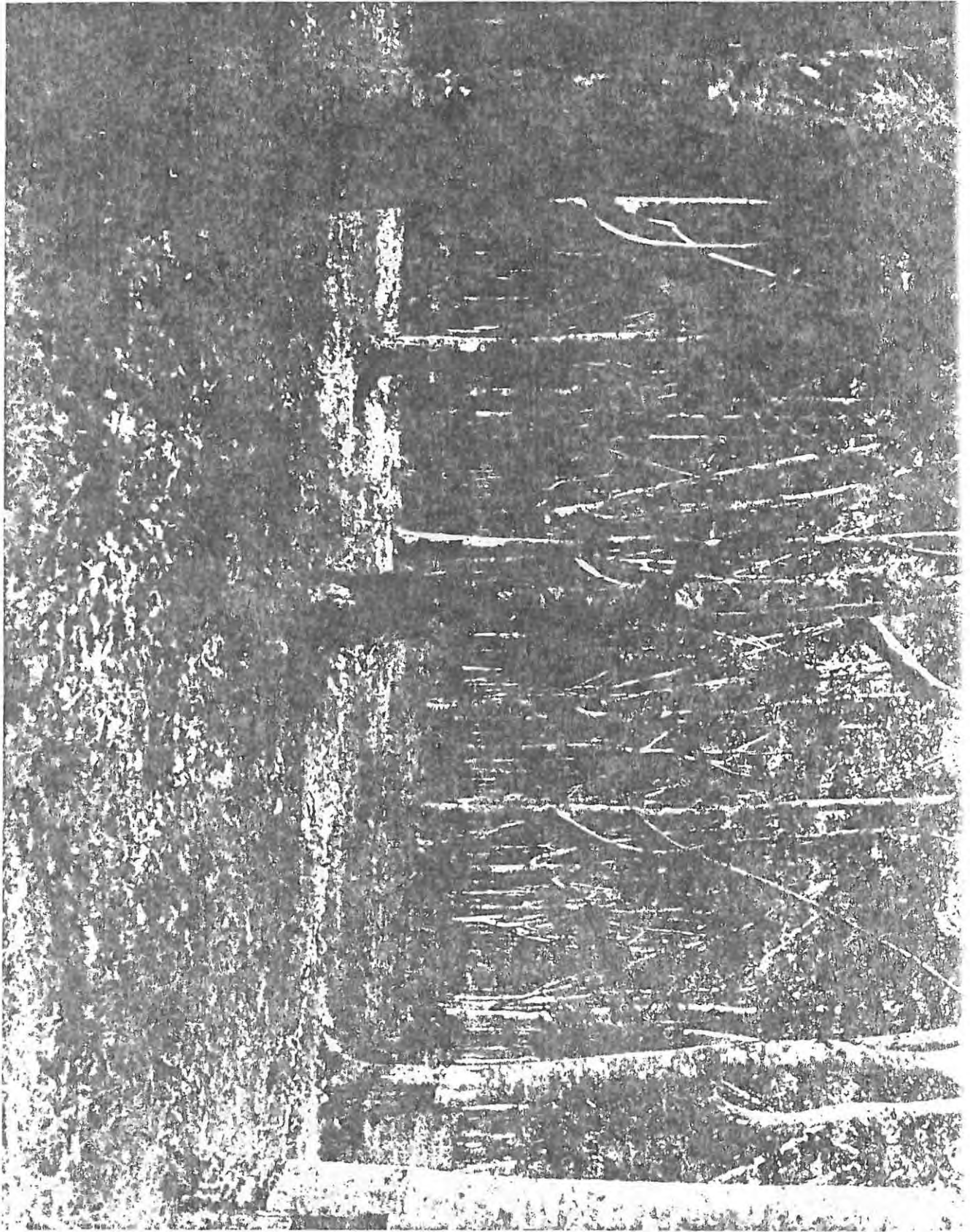
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[5]

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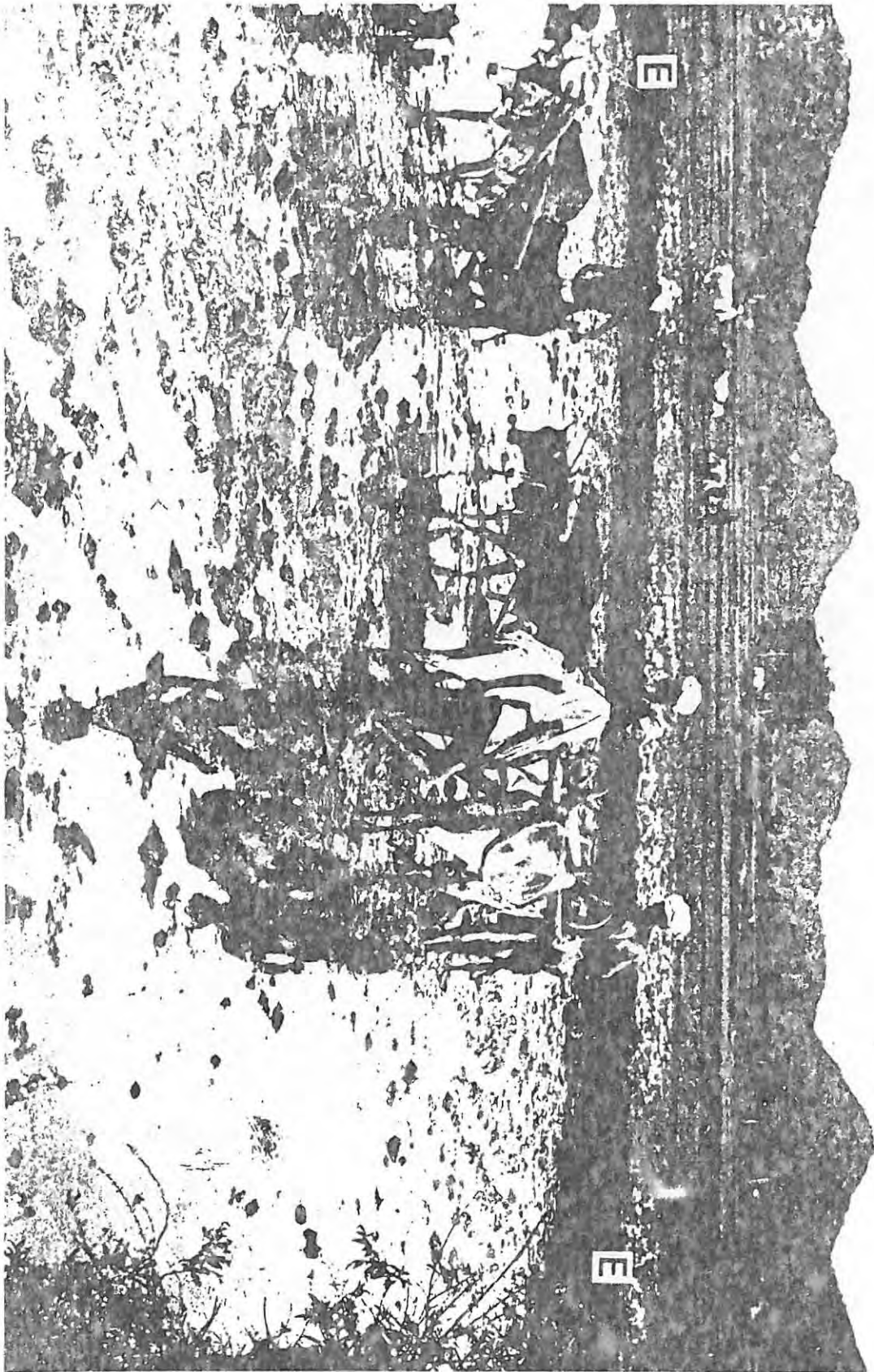
PHOTOGRAPH 1



Photograph of the vegetation in the area of the study

546

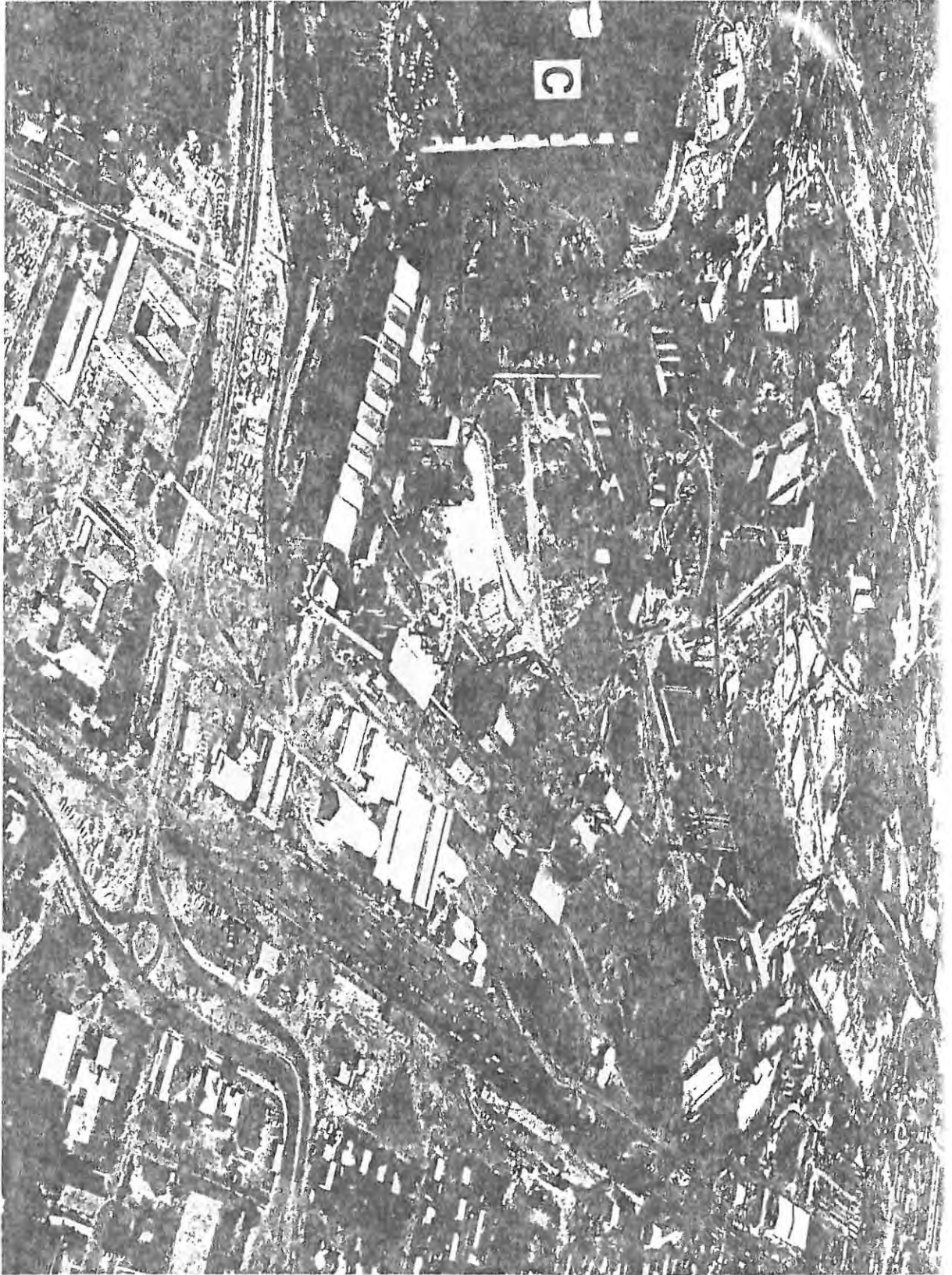
PHOTOGRAPH 2



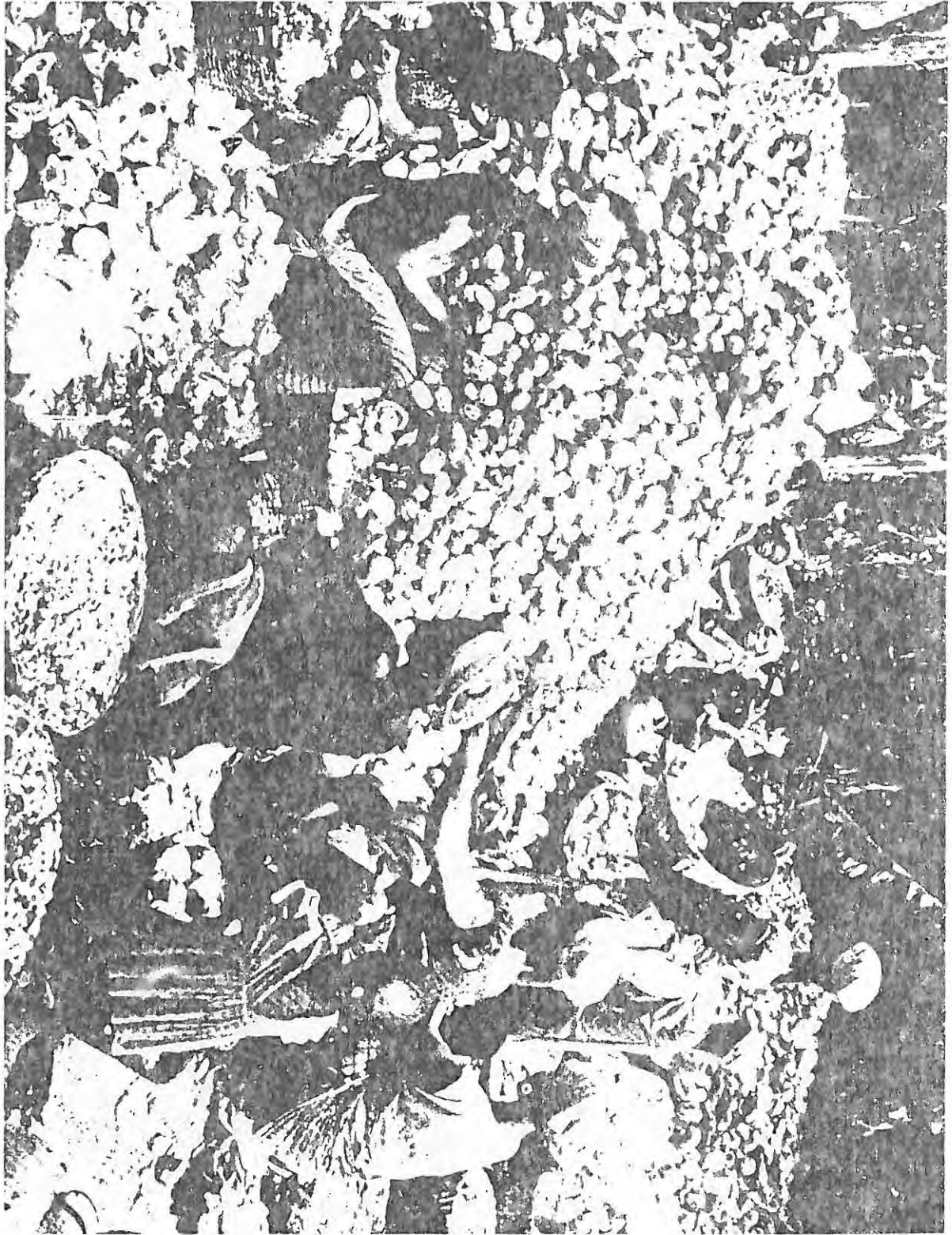
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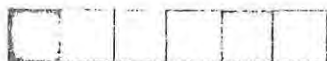
547

PHOTOGRAPH 3



PHOTOGRAPH 4





Each box should contain a colour, if any are white the map is incomplete and should be returned to the invigilator

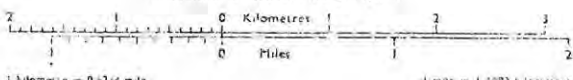
Extract No 396/109

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1:50 000

2 centimetres to 1 kilometre (one grid square)



Heights are to the nearest metre above sea level. Contour values are given to the nearest metre. The vertical interval is, however, 50 feet.

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SCHOOL NUMBER

CANDIDATE'S No.

1980

c)

CANDIDATE'S NAME

G E O G R A P H Y

PAPER 1

PART A - MAP WORK
PART B - BRITISH ISLES

6 JUNE 1980 - 9.30 am

TIME ALLOWED - ONE AND THREE QUARTER HOURS

QUESTION	MARK
1	
TOTAL	

Complete a), b) and c) above

Answer PART A, QUESTION 1 and TWO questions from PART B (Total - three questions).

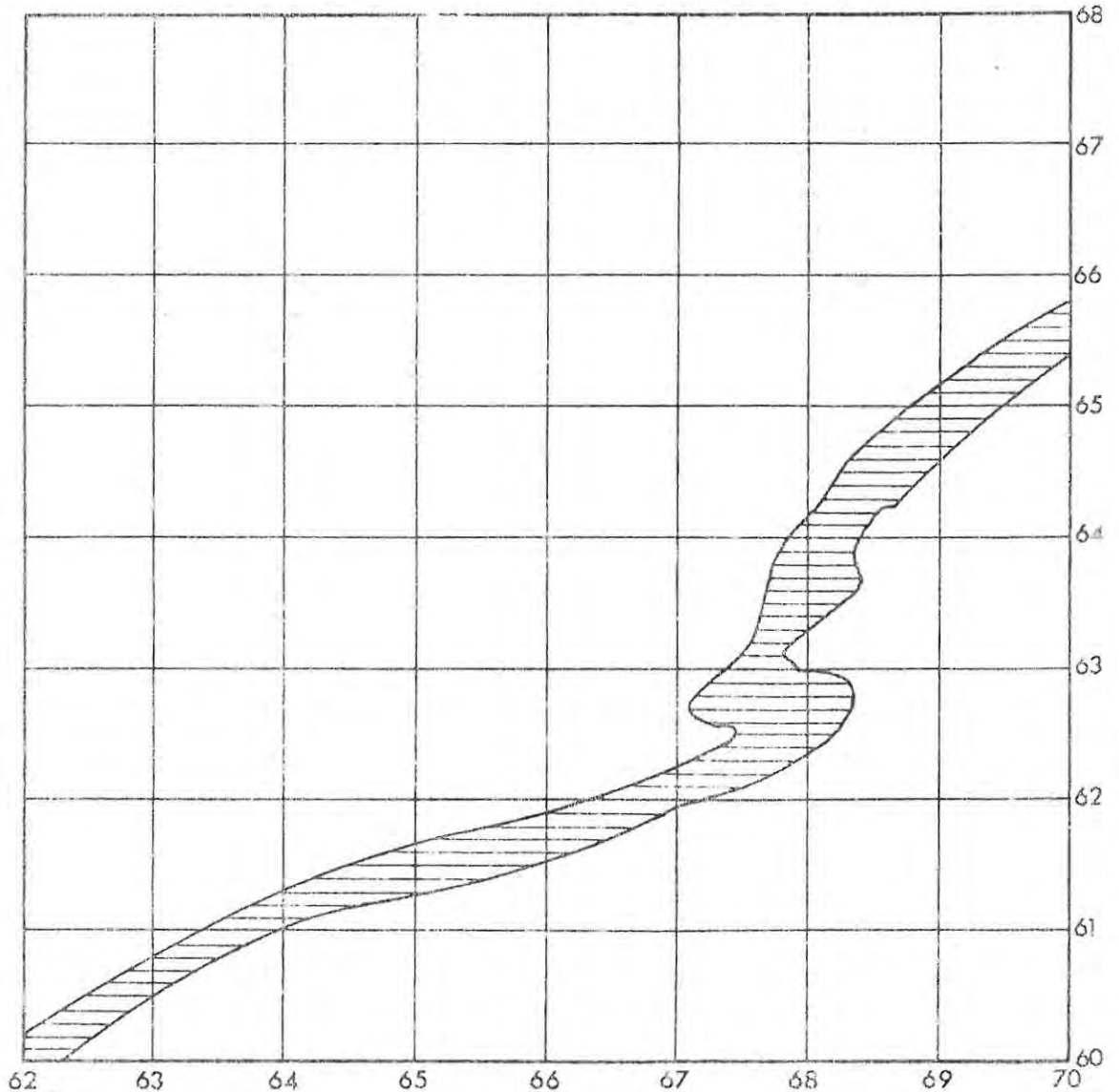
Answer your questions in the spaces provided. If extra space is required use the pages at the end of the booklet.


THE USE OF A STANDARD SCHOOL ATLAS IS PERMITTED.

TURN OVER

PART A - MAP WORK

- 1 a) Study the Ordnance Survey map provided and answer the following questions:



 Landscape Feature

On the outline of the map given above, using the correct Ordnance Survey symbol where possible:

- i) mark the course of the railway line
- ii) mark Meopham railway station
- iii) mark one embankment on the railway
- iv) mark one area of orchard
- v) mark the line followed by one overhead electricity cable
- vi) print on the area shaded the name given to the type of landscape feature shown.

How many square kilometres does the map above cover?

LEA:
BLA:

continued

b) i) In what direction does Brands Hatch Circuit (575647) lie from Longfield Hill (625681)?

ii) How far is it from Longfield Hill to the A2 (T) interchange at 642712 by the shortest road route?

iii) What is the contour interval on the map?

c) Study photograph A of Meopham Station on page 2 of your photograph sheet (square 6467).

i) In which direction was the camera pointing when the photograph was taken?

ii) Give the 6-figure grid reference of the church at X.

iii) Give a four figure grid reference of the chimney at Y.

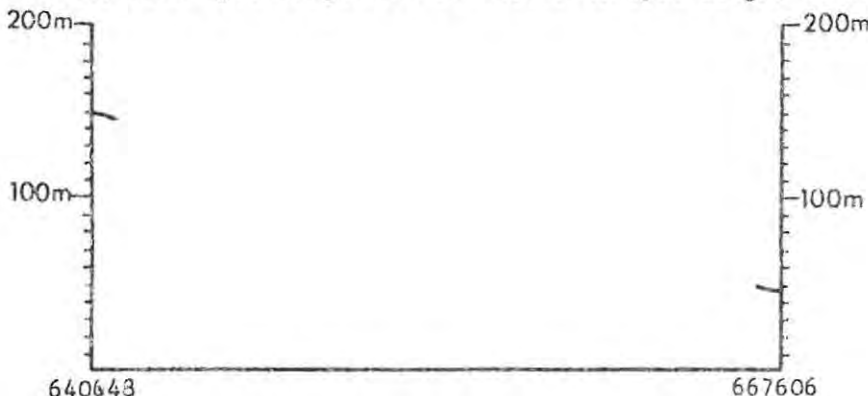
iv) Give the number of the main road passing through Meopham Station.

v) Underline one of the following which best describes this settlement:
farming village, commuter estate, nucleated village, hamlet, New Town.

vi) Say in which of the following periods you think most of Meopham Station was built:-
medieval, pre-1914, inter-war period, early post-war, later post war.

Give reasons for your choice

d) i) On the base grid provided draw a free-hand sketch section (started for you at both ends) from spot-height 149 at 640648 to spot height 48 at 667606.



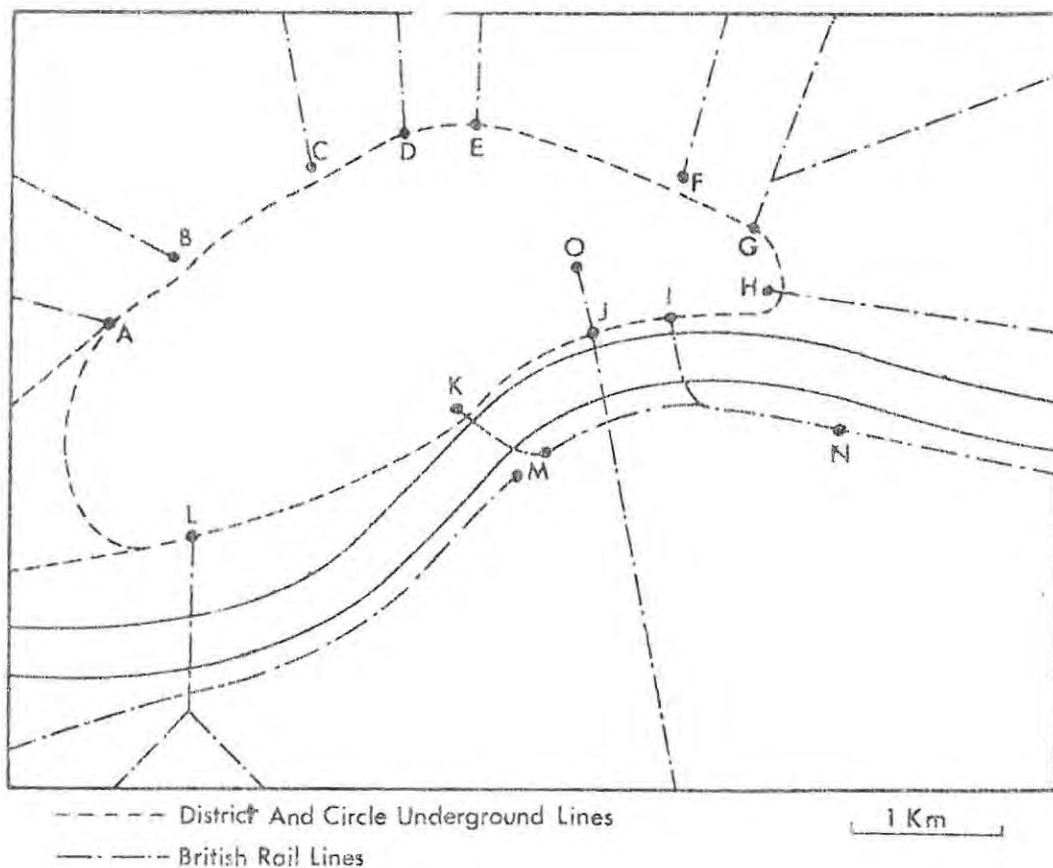
ii) Mark on the sketch section 1) the position of Harvel Church (650633)
2) one dry valley.

TU:
CV:

PART B - BRITISH ISLES

2 a)

LONDON. RAIL AND UNDERGROUND LINES



BRITISH RAIL STATIONS

A	Paddington	F	Broad Street	J	Blackfriars
B	Marylebone	G	Liverpool Street	K	Charing Cross
D	St. Pancras	H	Fenchurch Street	L	Victoria
E	Kings Cross	I	Cannon Street	N	London Bridge
		O	Holborn Viaduct		

With the aid of the map answer the following:

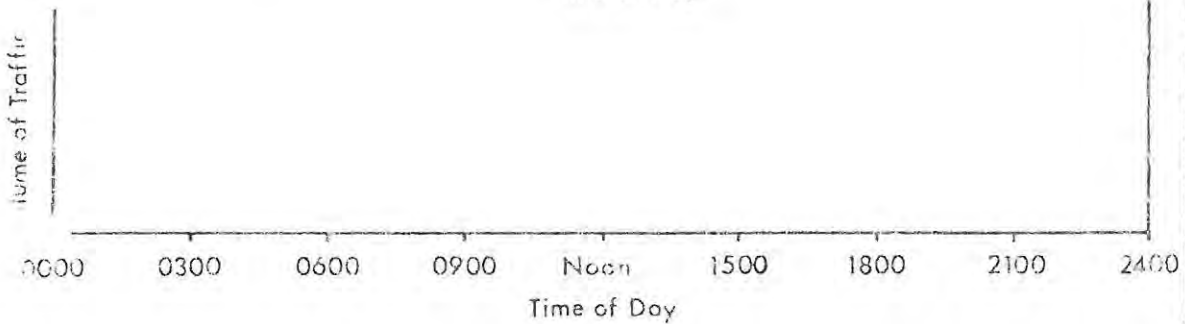
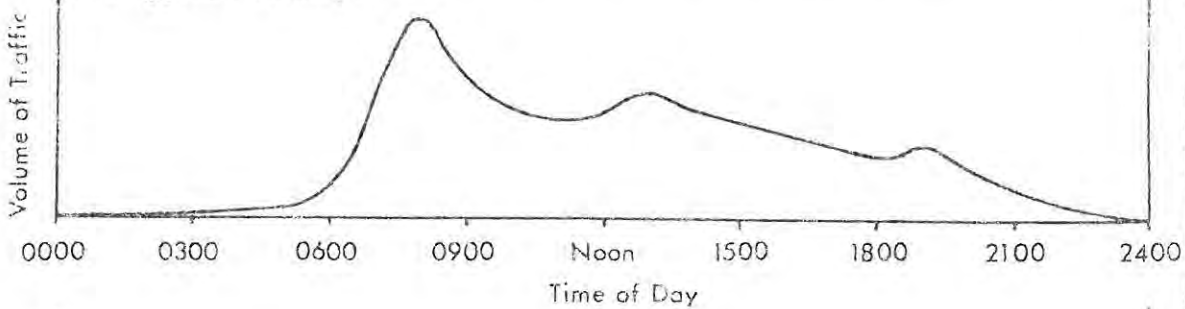
- i) Name stations C and M.
 C is _____ M is _____
- ii) Station M and London Bridge station are not on or near the Circle Line unlike the other stations. Give one reason for this.

- iii) Why are there more main-line stations north of the river than south of it?

- iv) Name one distant destination to which the lines from Kings Cross and Paddington stations run.
 Kings Cross _____ Paddington _____

2 continued

b) The graph below shows the volume of road traffic entering central London in a typical weekday.



- i) On the second graph draw a line to show the volume of traffic leaving London on a typical weekday.
- ii) Problems caused by the variations of traffic flow shown on the two graphs are
 - a) delays and
 - b) difficulties in parking.

What would be the effect on the two problems of building urban motorways?

- a) _____
- _____
- b) _____
- _____

iii) What do you think is the reason for the small peak in road traffic around lunch-time?

iv) What is the word used to describe people who travel daily into London and generally arrive in the rush-hour?

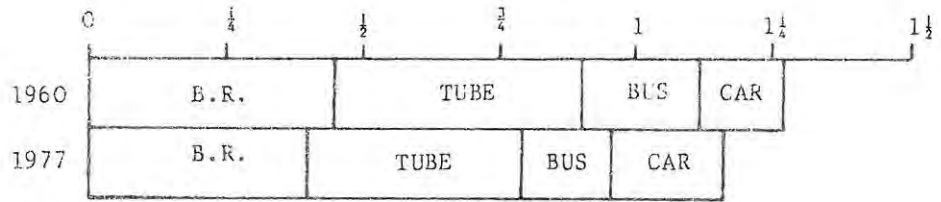
v) Explain why attempts are made to discourage people from coming into London by car.

(This question is continued on the next page).

continued

c)

PASSENGERS ENTERING CENTRAL LONDON BY
DIFFERENT MEANS OF TRANSPORT (AM)-Millions



i) Why has the total number of passengers declined?

ii) What have governments done to encourage this decline?

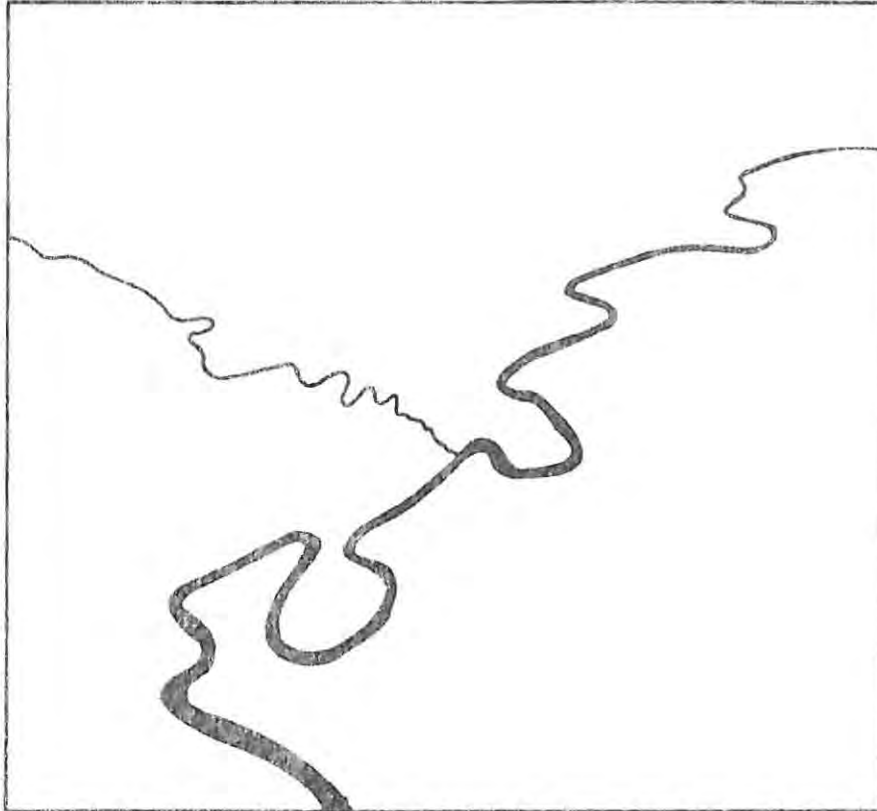
iii) Describe the other changes in travelling habits from 1960 to 1977.

iv) Why do you think these changes occurred?

L
B1

- 4) i) Study photograph B of the River Add on page 3 of your photograph sheet and the field sketch shown below:

FIELD SKETCH OF RIVER ADD



On the field sketch mark:

- 1) the area liable to flood
- 2) a tributary of the Add
- 3) a well-drained area
- 4) a meander
- 5) an abandoned meander
- 6) a point where an ox-bow lake is likely to develop.

(This question is continued on the next page).

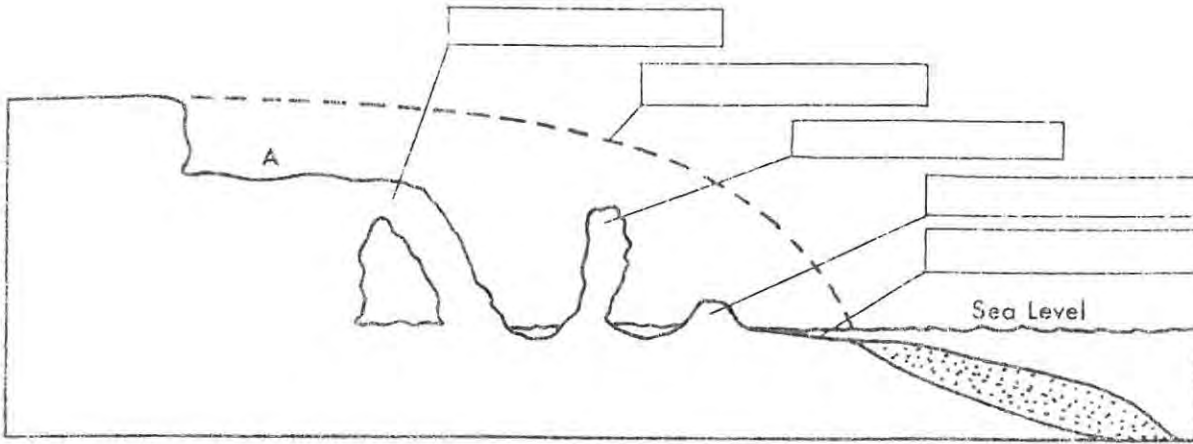
continued

ii) 1) With the aid of a diagram show what is meant by the term levée.

2) With the aid of a diagram describe how an ox-bow lake is formed.

continued

b) Study the cross-section of a coastal area drawn below:



- i) Name the five features on the diagram in the boxes provided, choosing from the following list:
 wave-cut notch, wave-cut platform, original land-surface, cave, arch, stack, stump, blow-hole, spit.

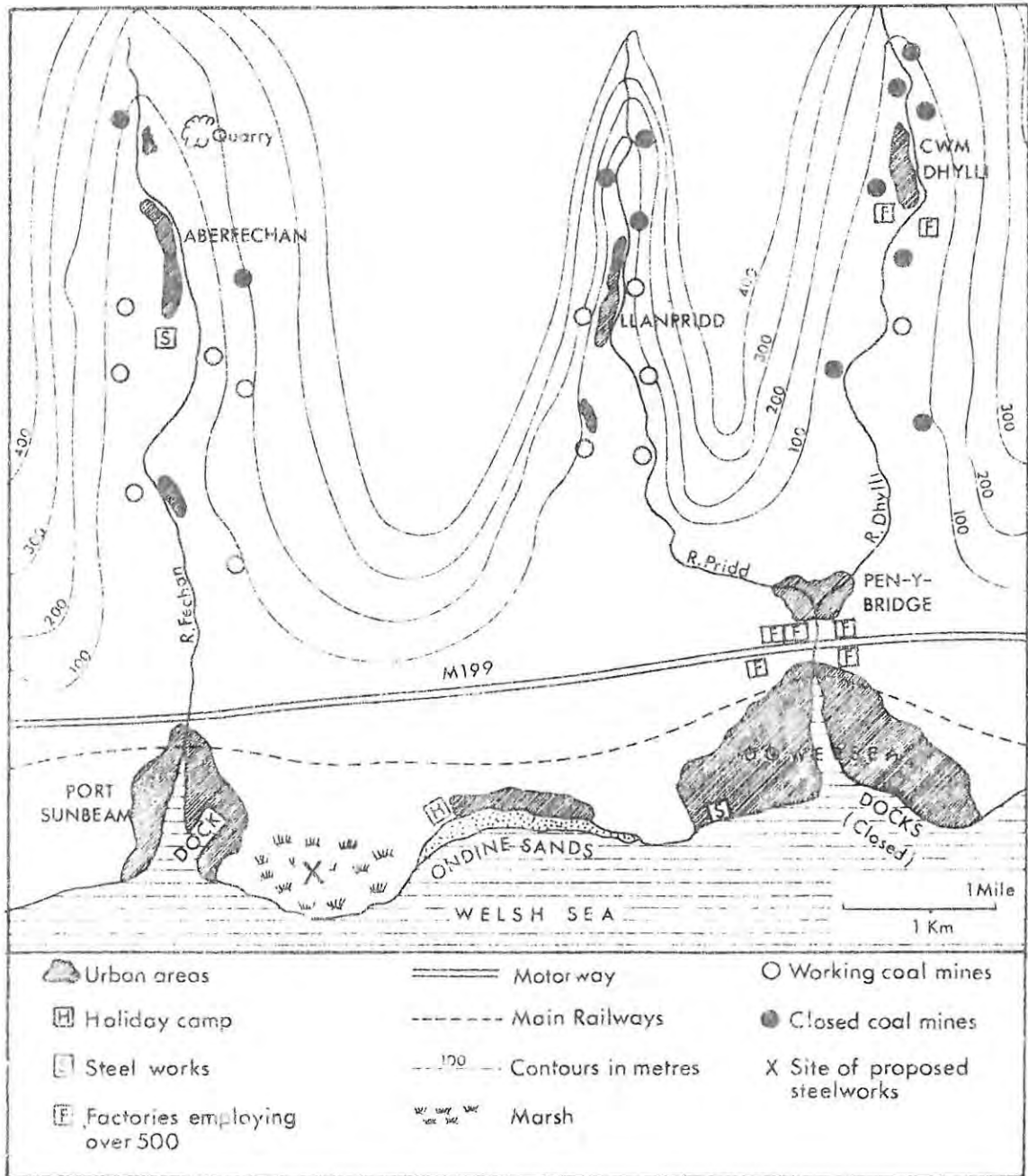
ii) What can we say about this place as a result of finding beach material at A?

iii) Name ONE particular place this might be. _____

iv) List two characteristic features of a ria.

1. _____

2. _____



Port Sunbeam has a disused dock which closed in 1978 when Aberfechan steelworks closed. Ore previously mined near Aberfechan ran out in 1910 and for 68 years ore was carried to Aberfechan from Port Sunbeam where it was imported originally from Sweden but later in bulk carriers from South America. The steelworks at Dowersea had closed in 1970.

TYPES OF COAL MINED

Aberfechan Valley	Llanpridd Valley	Cwm Dhylli Valley
Coking coal	Anthracite	Steam coal

Government grants for the re-location of displaced steel-workers, re-training of the unemployed and for the construction of new factories have been available since 1948 in the three mining valleys which are in a Special Development Area.

continued

LEA
BLA:

a) Study the map opposite of an imaginary area of South Wales and read the information provided below the map.

i) It is proposed to build an integrated strip steel works at X to produce 2 million tonnes a year and employing 5,000 people. Give three advantages of this site for the development.

1. _____

2. _____

3. _____

ii) Give one reason each why it was decided to build a new works at X rather than re-build and expand the old steelworks at Aberfechan and Dowersea.

Aberfechan _____

Dowersea _____

iii) Give one reason why the steelworks at Dowersea closed before the works at Aberfechan.

iv) In 1910 it was decided to continue production at Aberfechan and take ore there from Port Sunbeam rather than take the other raw materials to meet the ore where it was imported at Port Sunbeam. Give three reasons for this.

1. _____

2. _____

3. _____

(This question is continued on the next page).

TUP
OVE

4 continued

v) The new works at X will mean building a new jetty over 1 km long at Port Sunbeam and draining the marshes at X. What changes have taken place in the following to justify the expenditure?

a) ore transport

b) the type of steel in demand in South Wales

c) ways of making steel.

vi) There was one powerful objection to the proposal to site the new steelworks at X. Say who you think objected.

Summarise the objections in a sentence

vii) What particular use would the docks at Dowersea which closed in 1952 have had?

ued

LEAVE
BLANK

The two factories at Cwm Dhylli, opened in 1966, make television sets and underwear. The factories at Pen-y-bridge and Dowersea, outside the mining valley all opened in the middle 1970's and include tinsplating, engineering and car parts.

i) Give two reasons why the two earlier factories were built at Cwm Dhylli.

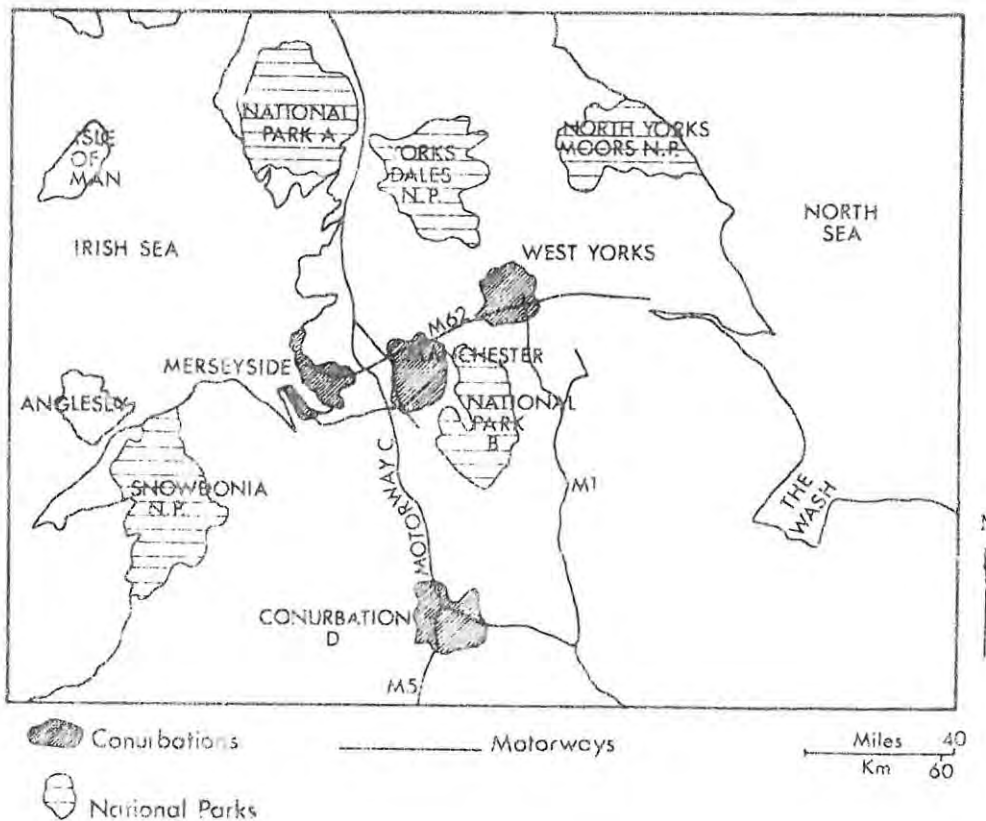
1

2

ii) Give two reasons each why these factories are not very suitable for solving the problems of Cwm Dhylli.

iii) When do you think the M199 motorway was opened?

TURN
OVER



Study the map which shows some of the National Parks, some of the conurbations and some of the motorways of England and Wales.

- a) i) Name National Park A _____
 National Park B _____
 Motorway C _____
 Conurbation D _____

ii) What is the purpose of a National Park?

iii) Give two characteristics which Parks A and B have in common.
 1 _____

 2 _____

continued

LEA
BLA

- iv) Give one relief feature which you would find in each park but not in the other.

Park A _____

Park B _____

National Park	Population Living Under 1hrs Drive Away (Millions)		Population Living Under 2 hrs Drive Away (Millions)	
	Before Motorways Opened	After Motorways Opened	Before Motorways Opened	After Motorways Opened
A	0.9	2.4	3.9	8.1
B	7.1	9.3	15.1	18.8
Snowdonia	1.0	2.3	4.8	7.0

- i) Explain why Park B is the most heavily used in Britain.
- _____
- _____
- ii) Which park gained most visitors up to an hour's drive away when the motorways were completed?
- _____
- iii) Which park gained most from those over one but less than two hours' drive away?
- _____
- iv) Which group of park residents will be glad to see so many visitors?
- _____
- v) Name two groups of people who live and work in the park who will be very worried by the trouble, damage and pollution caused by some visitors.
- 1 _____
- _____
- 2 _____
- _____

(This question is continued on the next page).

TJF
OVL

5 continued

- vi) School parties doing field-work in the Parks are asked to keep to the paths and not to take samples home. Why is this?

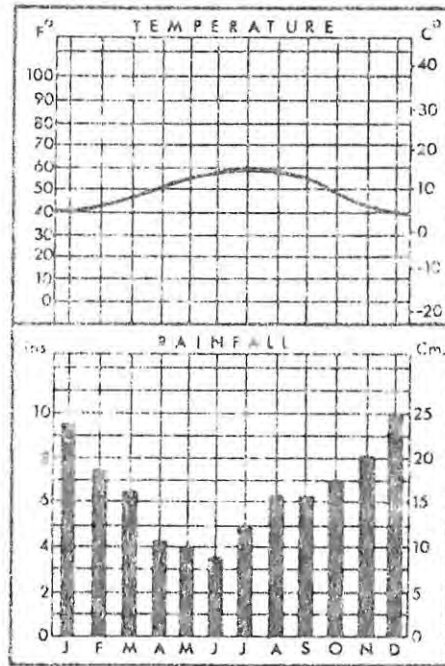
- vii) In some parks keeping to the paths has caused damage. Explain what has happened.

- viii) Some users of land within this park have conflicts amongst themselves. Explain any two such conflicts of interest.

- ix) In Park A regulations restricting water-skiing have been introduced. Why do you think this was necessary?

- x) In many parts of Parks A and B there have been proposals to ban cars entirely to prevent random parking. Give one argument against such proposals.

Study photograph C on page 4 of your photograph sheet, which shows a small settlement in a coastal area of Invernesshire in the Scottish Highlands. The climatic graphs are for a typical place in this area.



a) i) Which of the following types of settlement do you think it is:
Nucleated, linear, dispersed, New Town? _____

ii) What is this type of settlement in Scotland called?

iii) Farming is the main source of income in the area. Using the evidence on the photograph and the climate graphs

1) say what type of farming it is _____

and 2) describe THREE reasons for your choice.

1. _____

2. _____

3. _____

(This question is continued on the next page).

6 continued

- iv) An additional source of income for the farmers is shown on the photograph. Say what this is.

- v) From the evidence on the photograph describe two problems of transport in the area.

1 _____

2 _____

- vi) Considering the scarcity of land in Britain explain from the evidence on the photograph and any studies you have made of the Scottish Highlands why the farming settlement is not larger.

- b) For many years now young people have generally left the village to live elsewhere and many of the Scottish counties have had an overall drop in population.

- i) Give three reasons why you think young people leave.

1 _____

2 _____

3 _____

- ii) What is the term given to this prolonged loss of population from country areas?

continued

iii) Governments have for years been trying to halt the out-flow of people. Name three things governments have done to encourage people to stay.

- 1 _____

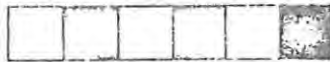
- 2 _____

- 3 _____

iv) In recent years the discovery of oil off the Scottish coasts has presented new opportunities and posed new threats to such areas. Give one advantage and one disadvantage of oil developments in areas like the one on the photograph.

Advantage _____

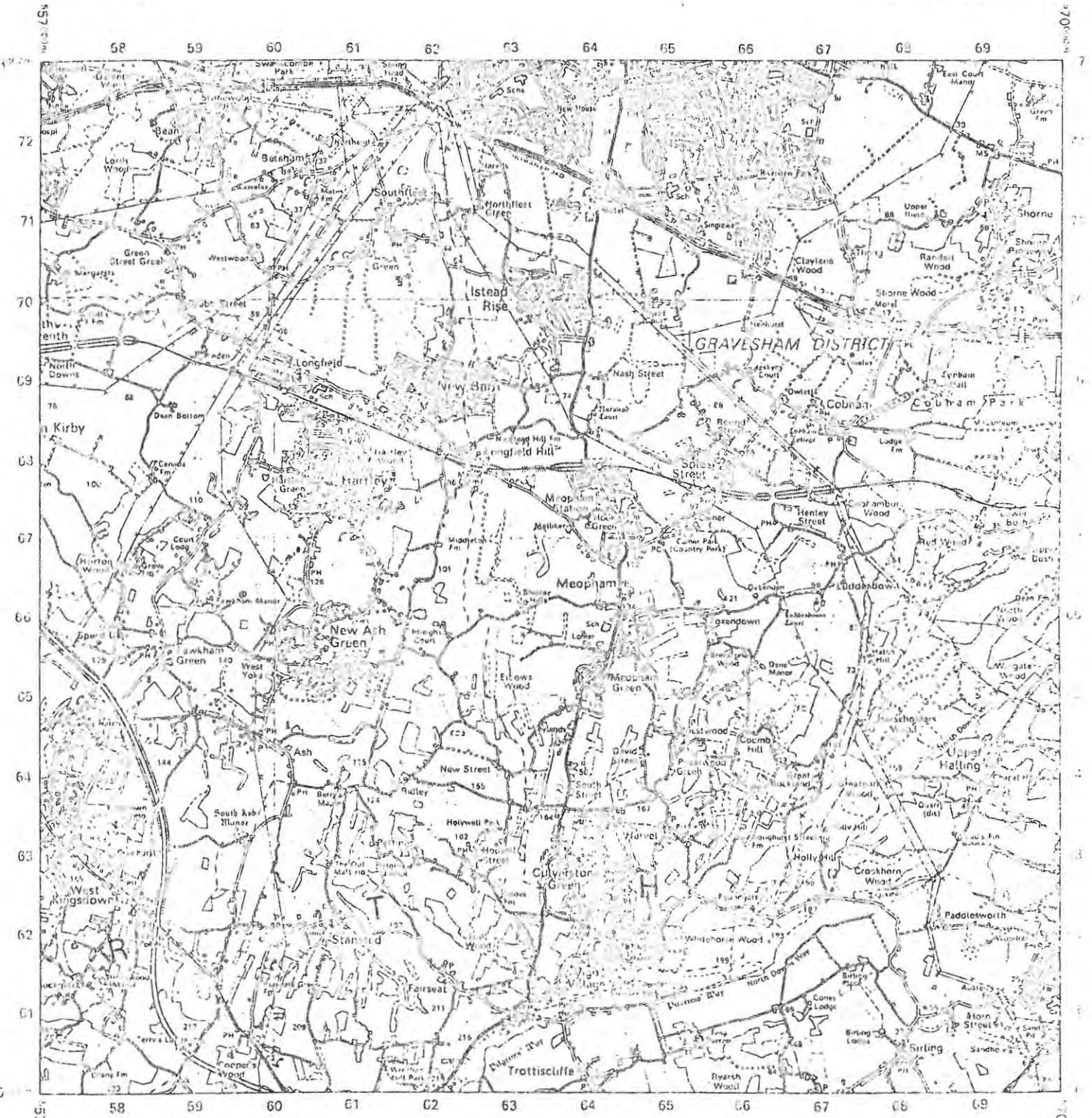
Disadvantage _____



Each box should contain a colour, if any are white the map is incomplete and should be returned to the investigator

Extract No 431/177

1:50 000 Second Series



1:50 000

2 centimetres to 1 kilometre (one grid square)



Map is to the nearest metre above mean sea level. Contours are at 10 metres vertical interval. Made and published by the Director General of the Ordnance Survey, Southampton.

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1980

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G E O G R A P H Y

c)

SCHOOL NUMBER

PAPER 2

CANDIDATE'S No.

SECTION C - PART I - NORTH WEST EUROPE

OR PART II - NORTH AMERICA

11 JUNE 1980 - 2.00 pm

TOTAL TIME ALLOWED - ONE AND THREE QUARTER HOURS

Complete a), b) and c) above

Answer questions in SECTION C from EITHER PART I - N W EUROPE
OR PART II - NORTH AMERICA, BUT NOT BOTH.

Answer EITHER TWO questions from SECTION C and ONE question
from your other booklet

OR ONE question from SECTION C and TWO questions
from your other booklet.

(A total of THREE questions)

Answer your questions in the spaces provided. If extra space
is required use the pages at the end of this booklet.

Q U E S T I O N	M A R K
T O T A L	

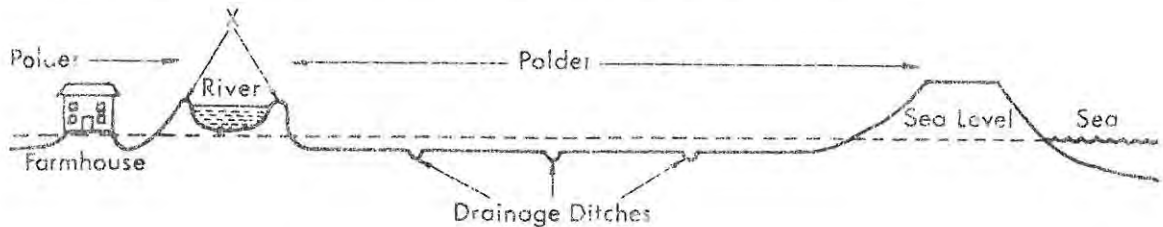
THE USE OF A STANDARD SCHOOL ATLAS IS PERMITTED.

TURN
OVER

EITHER PART I - NORTH WEST EUROPE (Questions 1 - 3)

If you answer any questions on this section you must NOT answer any on North America.

- i a) Study the cross-section of part of the Netherlands.



- i) Why are the polders below sea level?

- ii) How does the water in the drainage ditches get into the river?

- iii) Name one river this might be. _____

- iv) How is the sea kept from flooding the polder?

- v) Name the natural features X _____

- vi) Explain why the farm house is above the level of the surrounding polder.

- b) The heathlands of the eastern Netherlands have been improved over a period and made agriculturally more productive.

- i) Explain why the improvement was necessary.

- ii) Describe how the improvements were made.

continued

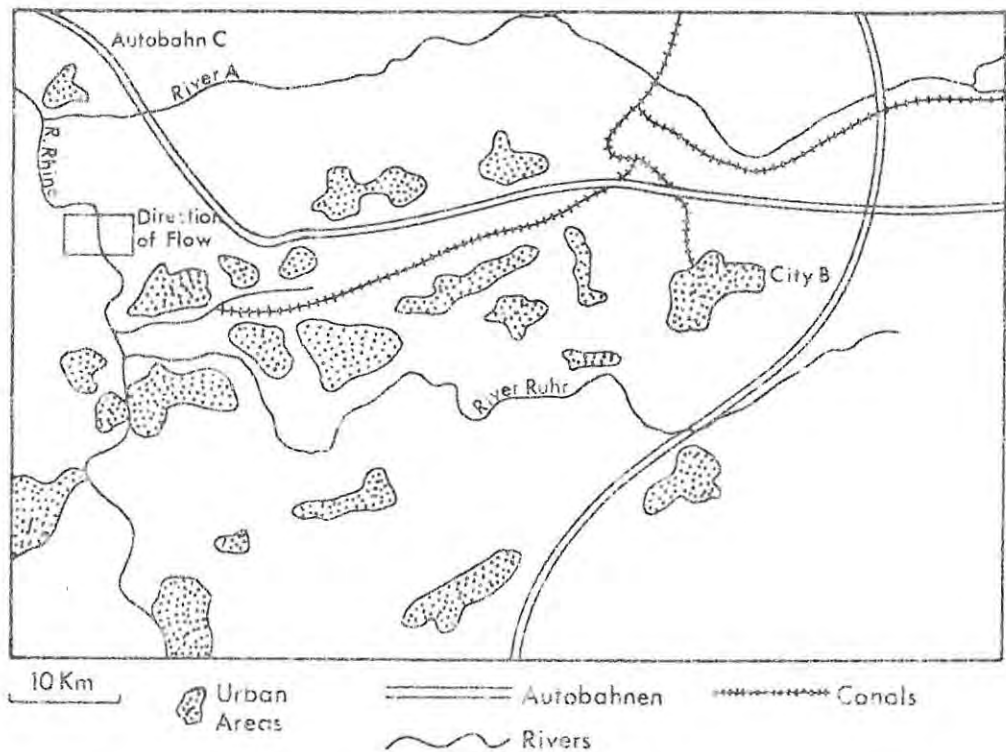
c) Write a contrasting description of a farm in the polderlands and of one in the heathlands. You should refer to such aspects as their size, crops, livestock, productivity and labour force.

Lined writing area consisting of approximately 25 horizontal lines for student response.

LEAV
BLAK

TUJ
OVE

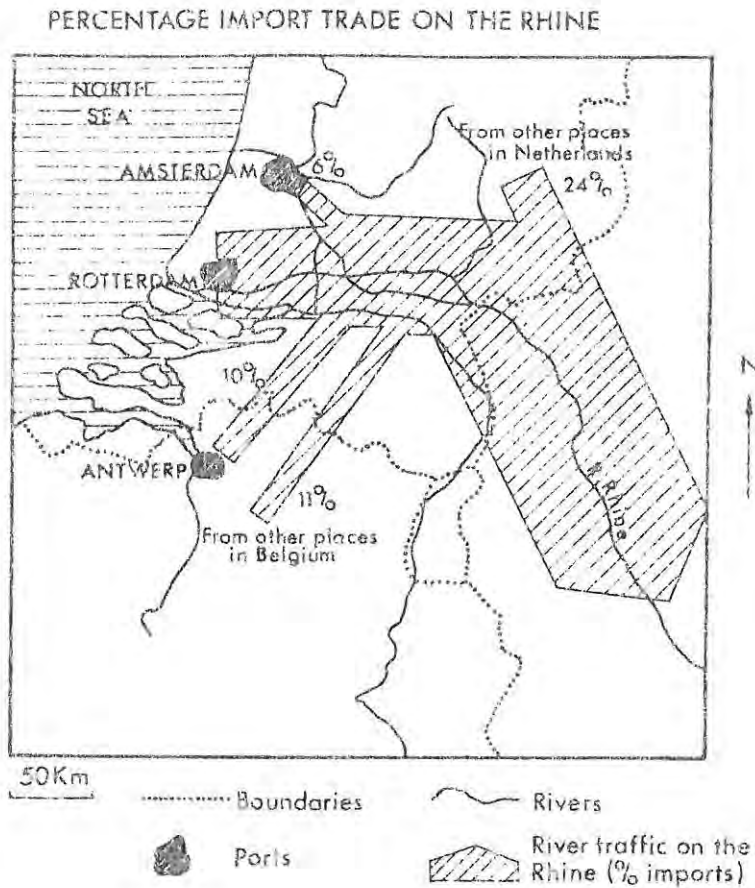
- 2 a) Study the map of the Ruhr industrial area.
- i) Name river A.
 - ii) Name city B.
 - iii) Mark and name an important river port.
 - iv) Mark with an arrow in the box provided the direction of the flow of the Rhine.
 - v) Mark and name one area of high land.



- b) i) What is an autobahn? _____
- _____
- ii) To which country would autobahn C take you? _____
- iii) Name two raw materials imported into the area on the map.
- 1) _____ 2) _____
- iv) Give two reasons why the bulk of the imports into the area are carried in barges.
- 1 _____
- 2 _____
- v) Name two products which are exported along the Rhine.
- 1) _____ 2) _____

continued

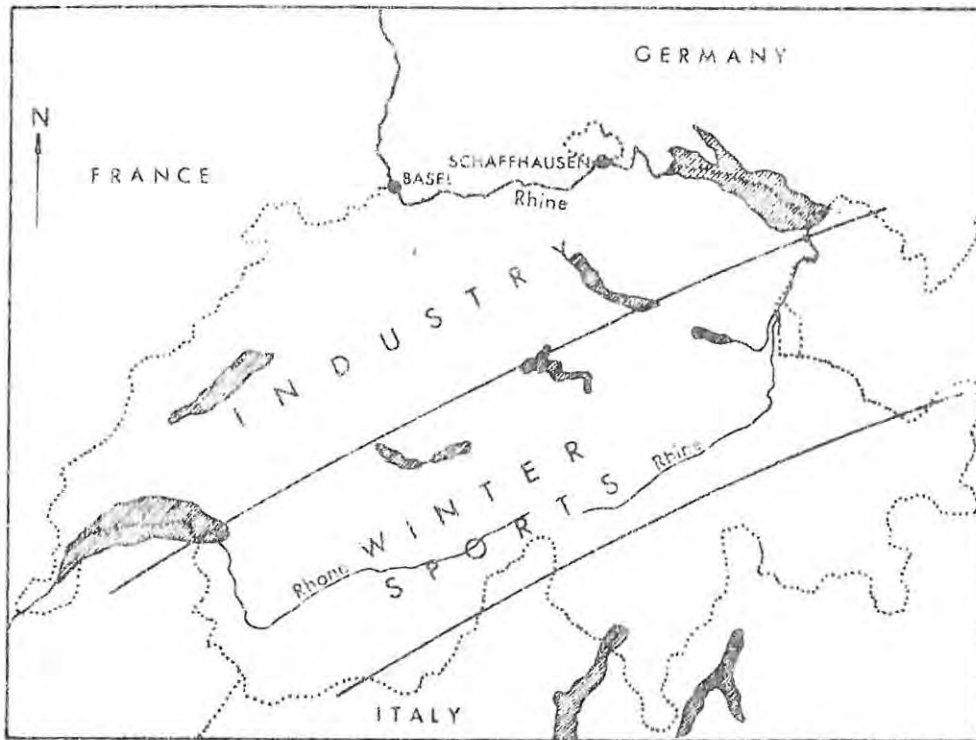
c) Study the map of import trade on the Rhine.




- i) What percentage of the trade comes through Rotterdam? _____
- ii) What percentage of the trade comes from Belgium? _____
- iii) What percentage of the trade comes from the Netherlands? _____

(This question is continued on the next page).

3 Study the map of Switzerland.



 Lakes

i) Give two reasons why winter sports are concentrated in the area marked.

1 _____

2 _____

ii) Give two reasons why the main industrial towns of Switzerland are in the area marked.

iii) Give two reasons why farming is more important in the area marked 'industry' than in the area marked 'winter sports'.

(This question is continued on the next page).

continued

- b) i) Explain with the aid of a diagram why the north sides of mountains have a longer winter sports season than the south side.

- ii) Give two reasons why the winter sports industry is of great economic importance to Switzerland.

1. _____

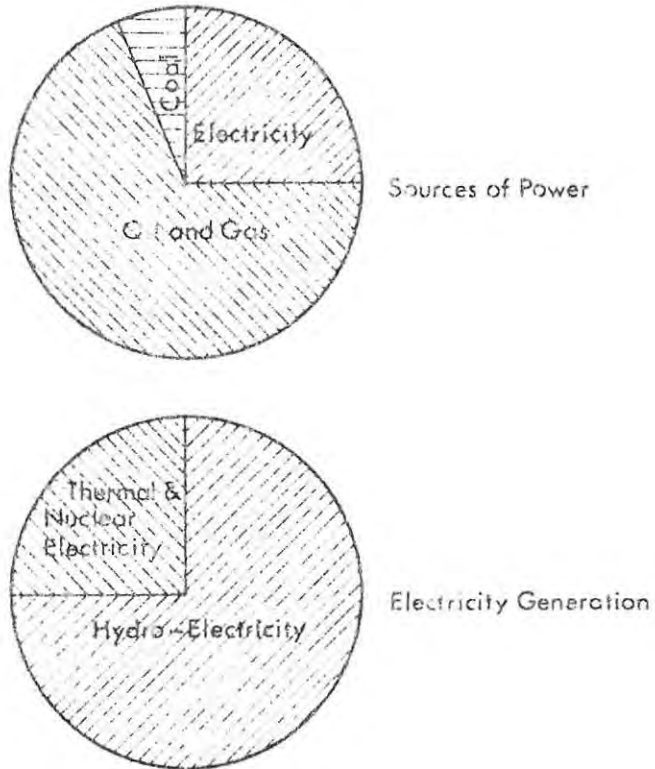
2. _____

- iii) Name one winter sports facility which is also used in summer.

3 continued

c) Study the diagram showing power supplies in Switzerland.

SWITZERLAND - POWER SUPPLIES



- i) What percentage of Swiss power requirements come from hydro-electricity?

- ii) Give two physical reasons why it is not possible to increase greatly the share of power produced by hydro-electricity

- iii) Give two reasons why the amount of hydro-electric power generated at places with locations like Schaffhausen is much greater than at generating stations in the Alps.
1 _____

2 _____

(This question is continued on the next page.)

3c) continued

iv) What environmental advantage does hydro-electricity have over other forms of power?

v) Much Swiss power is produced from oil and gas. By which route does most of this fuel reach Switzerland?

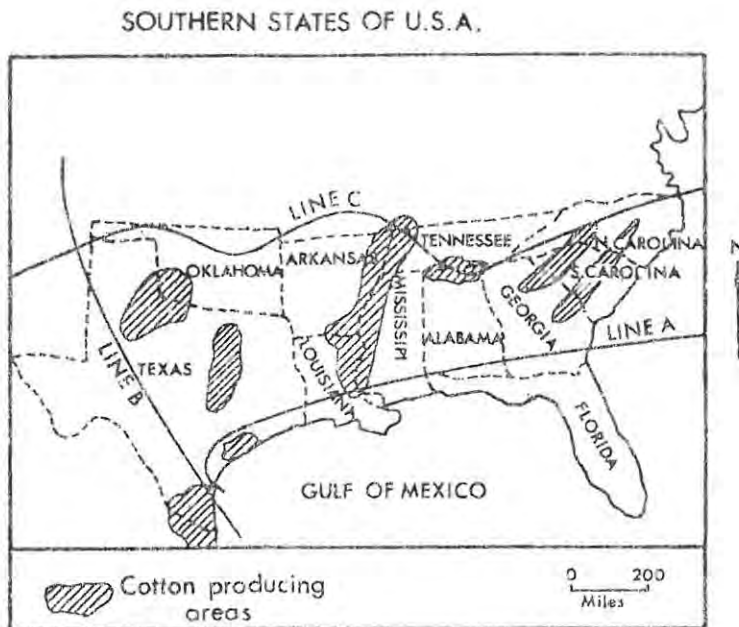
vi) Give one major industry of Basel.

PART II - NORTH AMERICA (Questions 4 - 6)

LEAVE
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If you answer any questions on this section you must NOT answer any on Europe.

- 4 a) Study the map of the southern states of the U.S.A.



- i) Lines A, B and C correspond to one of the following descriptions. Add the correct letter after each.

Northern limit of 200 frost free days Line _____

More than 250 mm of rain in autumn Line _____

Under 500 mm of rain annually Line _____

- ii) Which state has the largest area of land producing cotton?

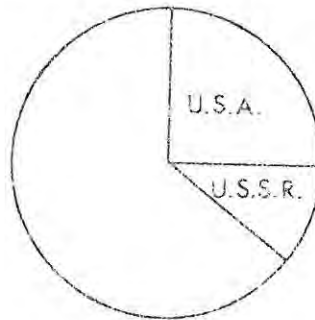
4 continued

b) Study the graphs of cotton production in the U.S.A.

U.S.A. COTTON PRODUCTION BY STATES %



WORLD COTTON PRODUCTION



- i) What is the annual production of Texas? _____
 - ii) What percentage of world cotton production comes from Texas?

 - iii) Several states now have a much smaller cotton production than 100 years ago. Name one of them.

 - iv) Name one area of cotton growing which is outside the Cotton Belt.

- c) Boll-weevils have caused the abandonment of much cotton growing land and resulted in less intensive cultivation of other areas. They thrive least well in areas which are cold and dry.
- i) Which state on the map opposite will be most suited to resist the pest?

(This question is continued on the next page).

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continued

ii) How does the weevil affect the crop?

iii) How does the farmer protect his crop against it?

iv) Name two new cash crops grown on farms which have reduced their cotton acreage.

1

2

v) How has the U.S. government helped in the reduction of cotton-growing land?

vi) Name two advantages of growing more than one crop on a farm.

1

2

Many farms have introduced machinery for cotton picking. Some have done this from choice, others from necessity.

i) Describe one advantage of machines which has led some land-owners to buy them.

4 d) continued

ii) Why have some farmers been forced to introduce them?

iii) Describe one disadvantage of cotton picking machines.

e) Give two reasons other than the boll-weevil why cotton has declined in importance.

1

2

5 a)

PITTSBURGH. POPULATION AND RANK.

DATE	1970	1950	1930	1910	1890	1870	1850
POPULATION IN 000's	520	677	670	534	239	86	47
RANK	24th	12th	10th	8th	12th	14th	7th

i) Complete the following:

- 1 the population of Pittsburgh in 1850 was _____
- 2 the population increased by roughly _____ in 1870.
- 3 the population reached its peak in _____

ii) Consider the following statement.

'The population of Pittsburgh hardly changed from 1910 to 1970.'

Is this statement true or false? _____

iii) Explain your answer to ii).

iv) How many cities in the U.S.A. were bigger than Pittsburgh in 1910?

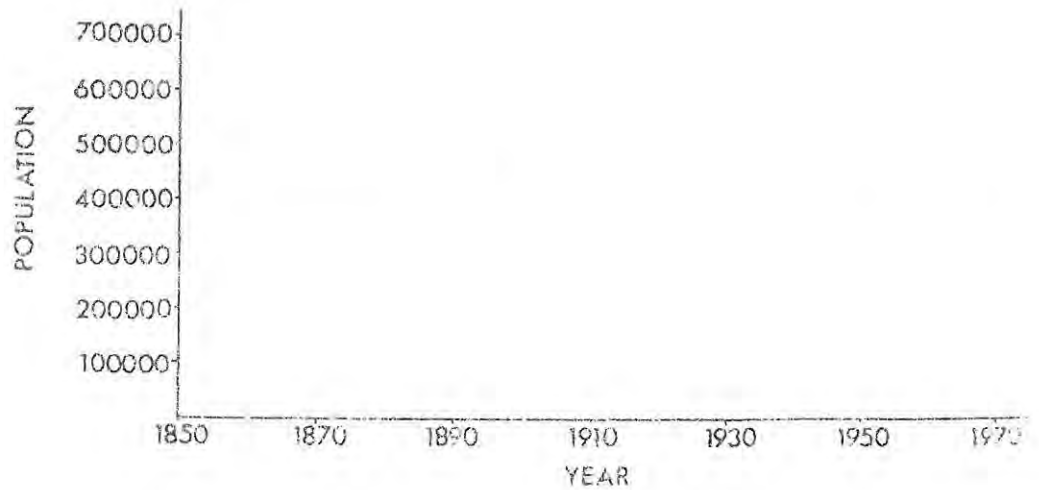
v) Name any two of them.

- 1 _____
- 2 _____

vi) Using the above table explain which forty year period was most important for the growth of the steel industry in Pittsburgh.

5 a) continued

vii) Using the table on the opposite page and the frame below draw a graph to show the changes in population in Pittsburgh.



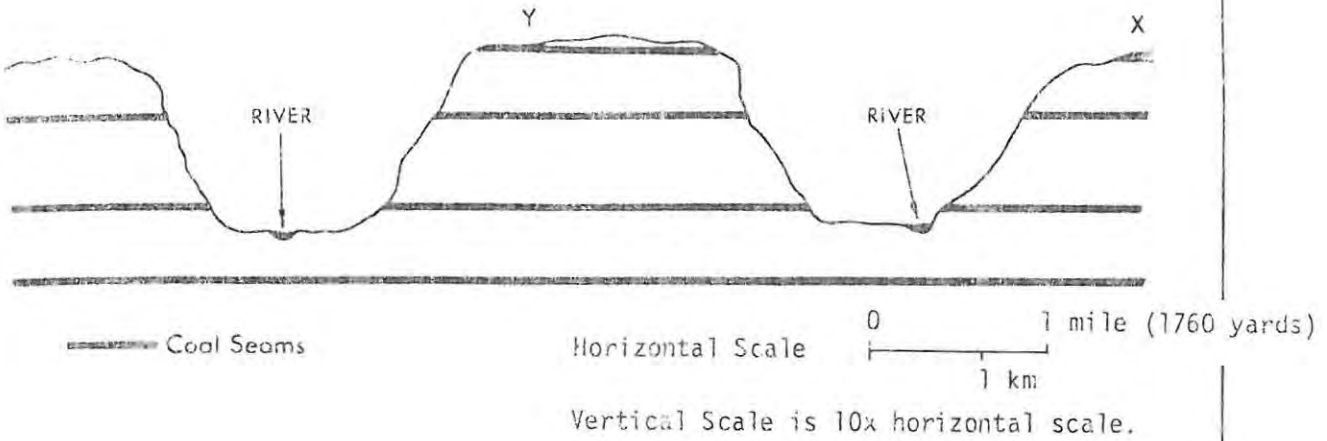
viii) Mark on your graph the 20 year period with the fastest growth in population.

(This question is continued on the next page).

LEAVE
BLANK

continued

b)



i) Using the cross-section of a typical area of the coalfields round Pittsburgh list THREE advantages the area has for coalmining.

1

2

3

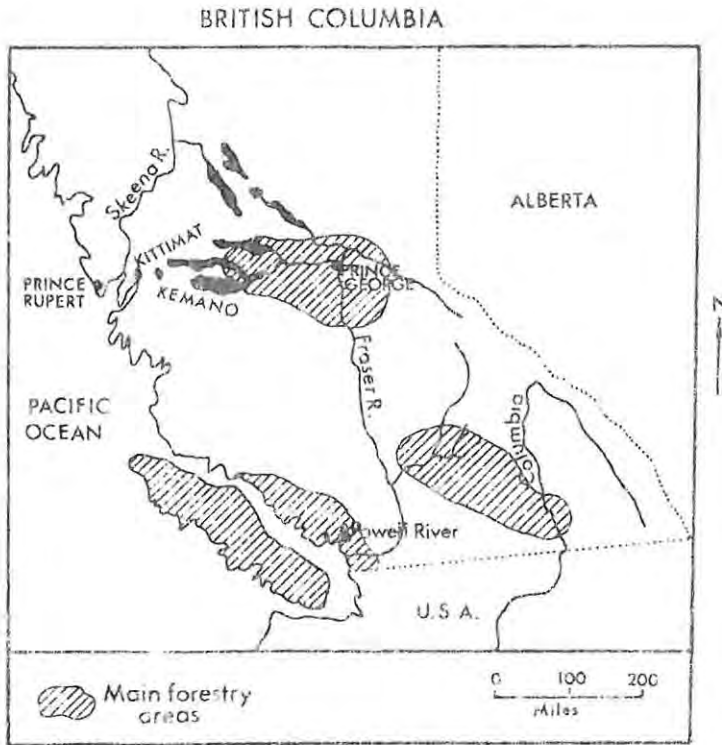
ii) At areas similar to X and Y coal is obtained by 'opencast mining'. Explain what is meant by 'opencast mining'.

5 continued

- c) Pittsburgh's early growth and long domination of the steel industry of the U.S.A. depended on a marketing law called 'Pittsburgh Plus'. Explain what this system was and how it helped Pittsburgh.

LEAVE
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a) Study the map of British Columbia



i) Next to the names below give the main industry of each town chosen from the following list:

Salmon canning; pulp-making; meat canning;
aluminium smelting; flour milling; electricity generation
copper mining.

Kitimat _____ Prince Rupert _____

KEMANO _____ Powell River _____

ii) Name one major source of bauxite (aluminium ore) used in the aluminium industry of British Columbia.

iii) What particular local advantage has British Columbia for the production of aluminium?

iv) Name one major market for the aluminium ingots produced in British Columbia. Identify a particular industry which uses the aluminium.

Market _____

Industry _____

591

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LONDON REGIONAL EXAMINING BOARD

1980

G E O G R A P H Y

PAPER 2

WORLD STUDIES EXCLUDING THE BRITISH ISLES

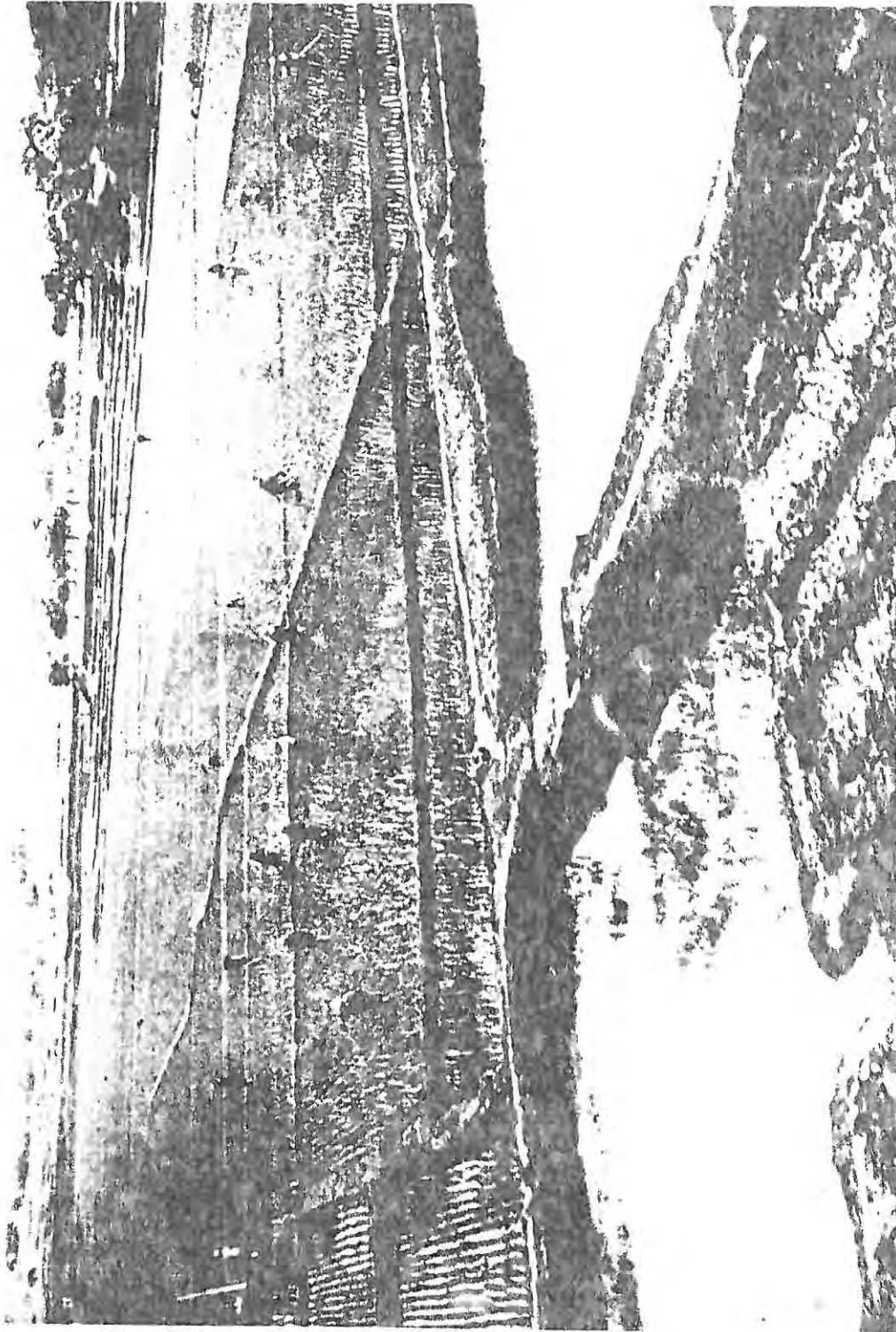
11 JUNE 1980 - 2.00 pm

PHOTOGRAPH SHEET

FOR USE WITH SECTION A - QUESTION 2

TURN
OVER

PHOTOGRAPH A FOR USE WITH SECTION A - QUESTION 2c

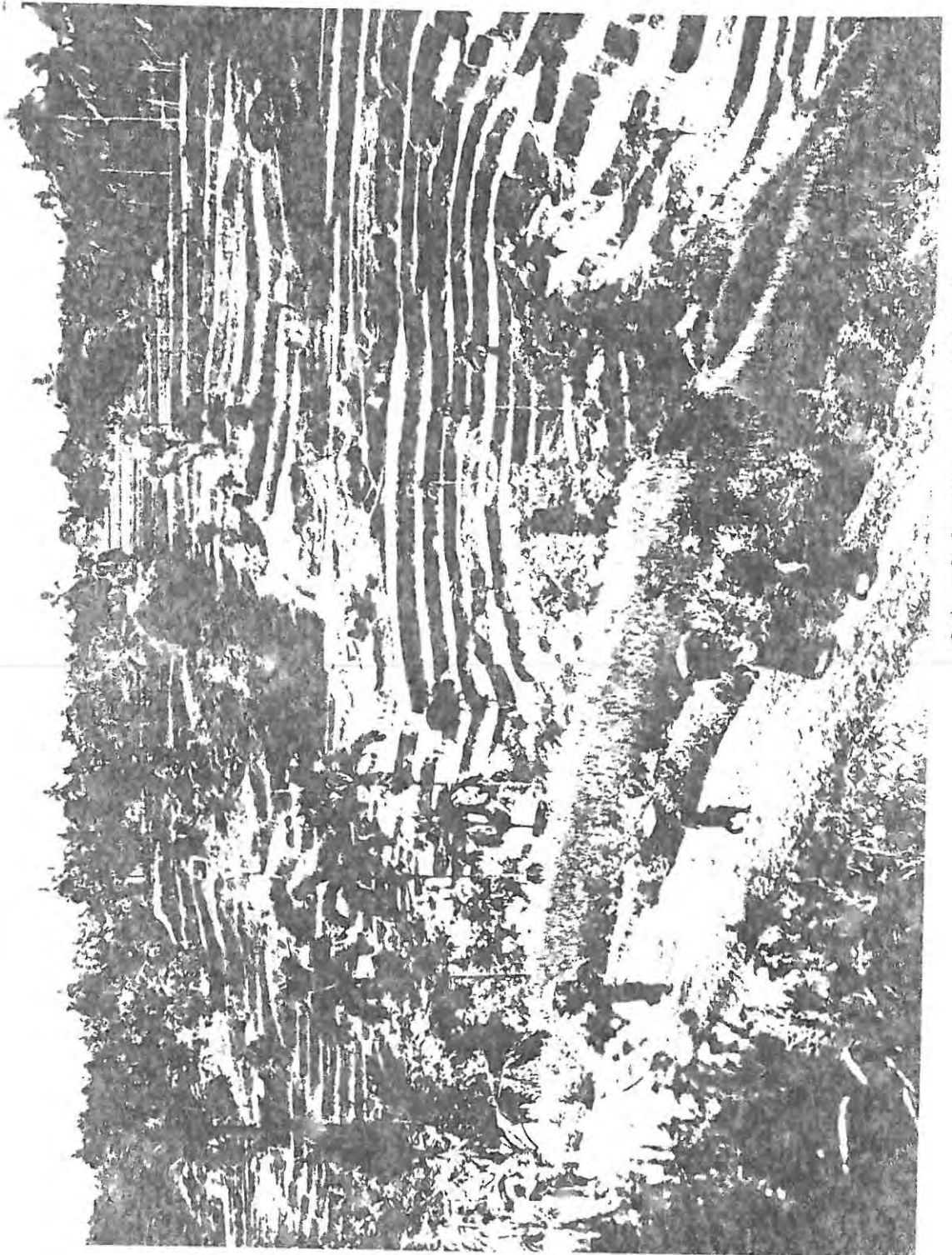


Acknowledgement: Photograph by FRANK FISCHBECK CAMERA PRESS (TEXT AND ILLUSTRATIONS) LONDON

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PHOTOGRAPH B FOR USE WITH SECTION A - QUESTION 2c



Acknowledgements: AERFILMS LTD

GEOGRAPHY
Young School Leaver (Group)
Paper 1
QUESTION AND ANSWER BOOK
Thursday, 24th May, 1979
1.30 - 3.15

YORKSHIRE REGIONAL EXAMINATIONS BOARD

Certificate of Secondary Education

GEOGRAPHY
Young School Leaver (Group)

Paper 1

Reading time: 15 minutes
Examination time: 1½ hours

QUESTION AND ANSWER BOOK

Candidate's Name _____

Candidate's Centre _____

Examination Number

Centre Number	Candidate Number

Answer four questions in the spaces provided - one from Section A, one from Section B, one from Section C and one other. If there is insufficient space for your answer, continue on page 20 of this book and state that you have done so. Enter the numbers of the questions which you have answered in the first column of the grid below.

The maximum mark allocated to each section of a question is shown in brackets at the right-hand side of the page.

Question Number	Examiner's Mark
Total	

SECTION A : MAN, LAND AND LEISURE

A1. Study the sketch below which shows a scene in a large British city.



Source: GYSL Liverpool Scheme, Unit 4.

(a) In the part of the city shown in the sketch public open space is usually in very short supply.

(i) Which part of the city does the sketch show?

(ii) What is meant by "public open space"?

(iii) Give *two* reasons why public open space is usually in short supply in that part of the city shown in the sketch. Explain each point as fully as you can.

First reason: -----

Second reason: -----

(h) *Using sketch evidence only*, describe what changes have taken place in the area shown in the sketch in order to create an area of public open space.

(5)

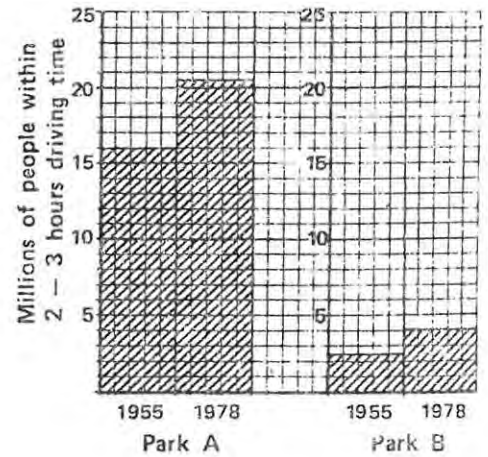
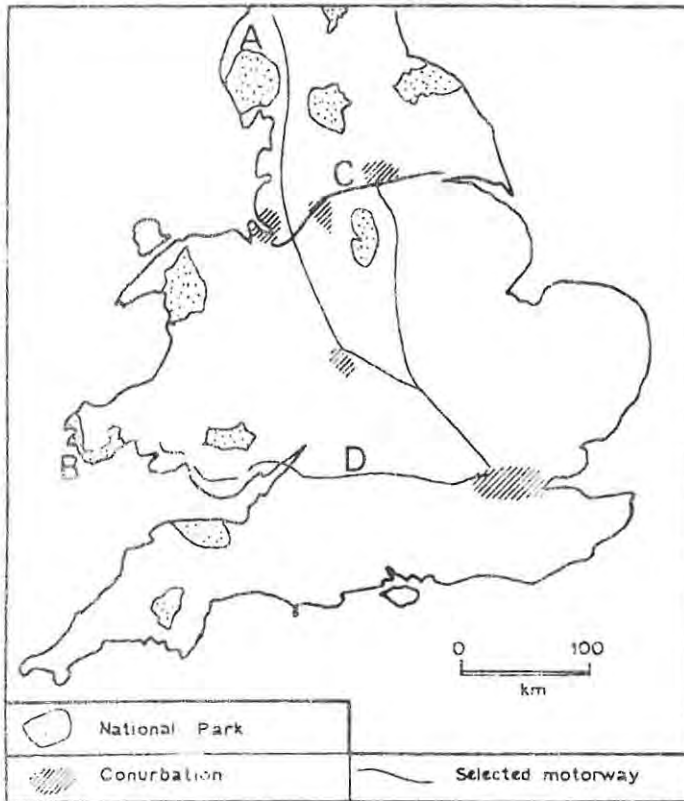
(c) Draw a *labelled* sketch-map to show the location of areas of public open space in *either* a new town *or* a new residential neighbourhood that you have studied. Marks will be gained for the detail of your map and for clear labelling.

Name of new town or neighbourhood chosen: _____

Map to show location of areas of public open space:

(4)

- A2. The map below shows the locations of national parks in England and Wales. The accompanying graphs show how many people lived within certain driving times of parks A and B in 1955 and how many people lived within certain driving times in 1978.



- (a) (i) Name the national parks A and B.

A _____ B _____

- (ii) Name the motorways C and D.

C _____ D _____

(2)

- (b) (i) How many people lived within 2-3 hours driving time of park A in 1955?

- (ii) How many people lived within 2-3 hours driving time of park B in 1955?

- (iii) How many more people lived within 2-3 hours driving time of park A than park B in 1978?

(2)

(c) Explain why park A received more visitors than park B in both 1955 and 1978.

.....
.....
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.....
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.....
.....

(4)

(d) Name *two* problems which may have arisen in parts of park A as a result of the greater influx of visitors over the last 25 years.

1.
2.

(2)

(e) Choose *one* of the national parks on the map other than A and B and

(i) name it *on the map*,

(ii) describe its landscape,

(iii) name the main leisure activities which can be carried on there.

Description of landscape:

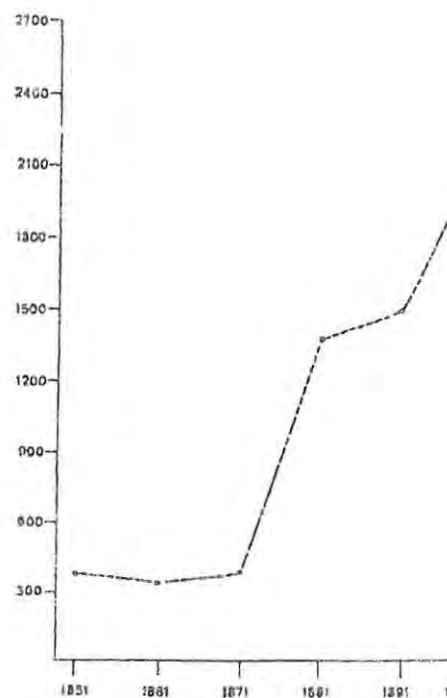
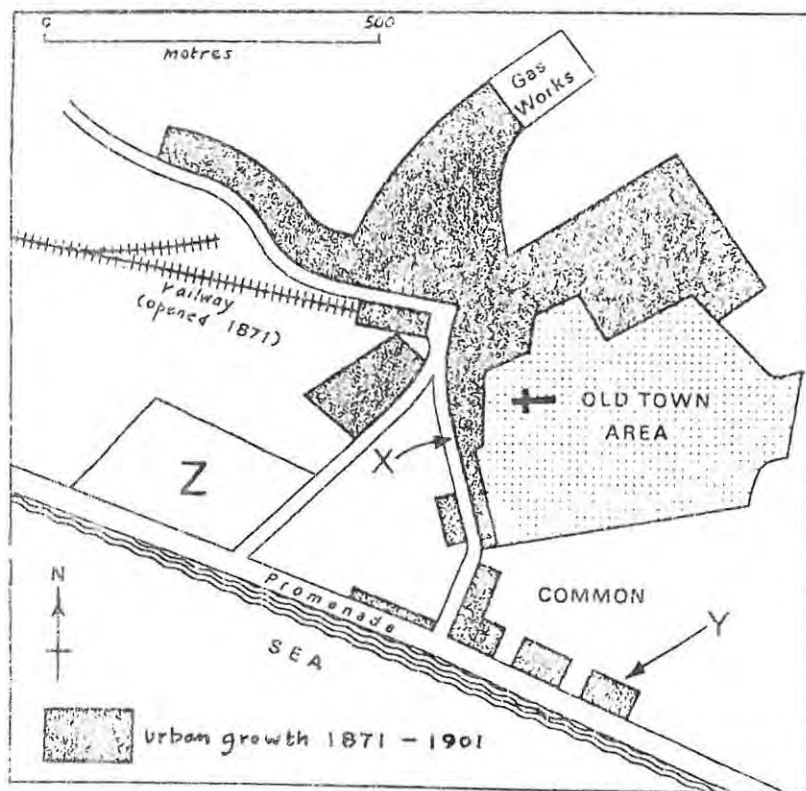
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Names of leisure activities:

.....
.....

(5)

- A3. Study the map below which shows the development of a seaside resort between 1871 and 1901. The accompanying graph shows population change in the resort during the period 1851–1901.



- (a) (i) What was the population of the resort when the railway opened?

- (ii) By how much did the population of the resort increase between the opening of the railway and 1901?

(2)

- (b) (i) Describe the growth of the resort as shown on the map between 1871 and 1901.

- (ii) What kind of urban development would you expect to have seen if you had visited areas X and Y in this resort in 1901?

Area X: _____

Area Y: _____

(6)

- (iii) Since 1901 the whole of the area south of the railway has been developed. What sort of land uses would you expect to find in area Z today?

(2)

- (c) The statistics below show unemployment in the resort in 1978.

MONTH	% UNEMPLOYED	above or below the monthly average for the resort in 1978.
January	8.8	+ 2.1
February	8.8	+ 2.1
March	8.3	+ 1.6
April	7.3	+ 0.6
May	6.0	- 0.7
June	4.2	- 2.5
July	4.0	- 2.7
August	4.4	- 2.3
September	4.8	- 1.9
October	7.6	+ 0.9
November	8.1	+ 1.4
December	8.5	+ 1.8

Describe and suggest reasons for variations in the unemployment pattern.

(5)

[TURN OVER

SECTION B : CITIES AND PEOPLE

4. Study the information below which relates to a small area within a large city in England.

<p>1) People</p> <p>1. Population 5900</p> <p>2. 2100</p> <p>3. 2280</p> <p>4. 800</p> <p>5. 740</p> <p>6. 2000</p> <p>7) Mobility</p> <p>Percentage moving into area in previous 5 years. 7.5%</p>	<p>2) Where the people were born</p> <p>a) In Great Britain 5650</p> <p>b) Outside Gt. Britain</p> <ul style="list-style-type: none"> - Irish Republic 135 - Australia, Canada, New Zealand 5 - India, Pakistan, West Indies & rest of Commonwealth 53 - Other foreign countries 57 	<p>5) Socio-Economic Groups</p> <ul style="list-style-type: none"> 1. Employers & Managers 2. Professional 3. Non-manual workers 4. Personal Service 5. Foremen & Supervisors (manual) 6. Skilled manual workers 7. Semi " " " 8. Unskilled " " " 9. Self-employed 																																			
<p>8) Age - Sex</p>	<p>6) Their homes</p> <p>These people live in 2000 dwellings.</p> <p>Single dwellings 1950</p> <p>Shared dwellings 50</p>	<p>7) Type of Tenure</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Owner-occupied</td> <td>550</td> <td></td> </tr> <tr> <td>Rented-Council</td> <td>250</td> <td></td> </tr> <tr> <td>Private rented-unfurn.</td> <td>1050</td> <td></td> </tr> <tr> <td>" " furn.</td> <td>150</td> <td></td> </tr> </table>	Owner-occupied	550		Rented-Council	250		Private rented-unfurn.	1050		" " furn.	150																								
Owner-occupied	550																																				
Rented-Council	250																																				
Private rented-unfurn.	1050																																				
" " furn.	150																																				
<p>9) Amenities of the 2000 Households</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Hot Water Tap</td> <td>Own</td> <td>1200</td> </tr> <tr> <td></td> <td>Shared</td> <td>200</td> </tr> <tr> <td></td> <td>Without</td> <td>600</td> </tr> <tr> <td>Fixed Bath</td> <td>Own</td> <td>1350</td> </tr> <tr> <td></td> <td>Shared</td> <td>100</td> </tr> <tr> <td></td> <td>None</td> <td>550</td> </tr> <tr> <td>Inside W.C.</td> <td>Own</td> <td>950</td> </tr> <tr> <td></td> <td>Shared</td> <td>100</td> </tr> <tr> <td></td> <td>None</td> <td>950</td> </tr> </table>	Hot Water Tap	Own	1200		Shared	200		Without	600	Fixed Bath	Own	1350		Shared	100		None	550	Inside W.C.	Own	950		Shared	100		None	950	<p>10) Garages</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Total cars</td> <td>650</td> </tr> <tr> <td>Garaged</td> <td>100</td> </tr> <tr> <td>Drive-in</td> <td>20</td> </tr> <tr> <td>On road</td> <td>530</td> </tr> </table>	Total cars	650	Garaged	100	Drive-in	20	On road	530	<p>Source of data: GYSL Liverpool Scheme, Units 1 & 2</p>
Hot Water Tap	Own	1200																																			
	Shared	200																																			
	Without	600																																			
Fixed Bath	Own	1350																																			
	Shared	100																																			
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	None	950																																			
Total cars	650																																				
Garaged	100																																				
Drive-in	20																																				
On road	530																																				

(a) Study the statements below, only one of which is correct. Tick the correct statement in one of the boxes provided.

- (i) The information shows that there are large numbers of New Commonwealth immigrants living in the area.
- (ii) The information shows that less than 10% of the total population is aged under 15 years.
- (iii) The information shows that less than 25% of the houses are owner-occupied.
- (iv) The information shows that there are many residential tower blocks in the area.
- (v) The information shows that more than 90% of the population have lived there for 5 years or more.

(b) Make *two* statements about socio-economic groups in the area for which information is provided on page 8.

1. _____

2. _____

(2)

(c) Show the information about fixed baths in the form of an accurate graph or diagram.

(3)

(d) List *three* pieces of evidence in the information on page 8 which suggest that the area is in the inner city.

1. _____

2. _____

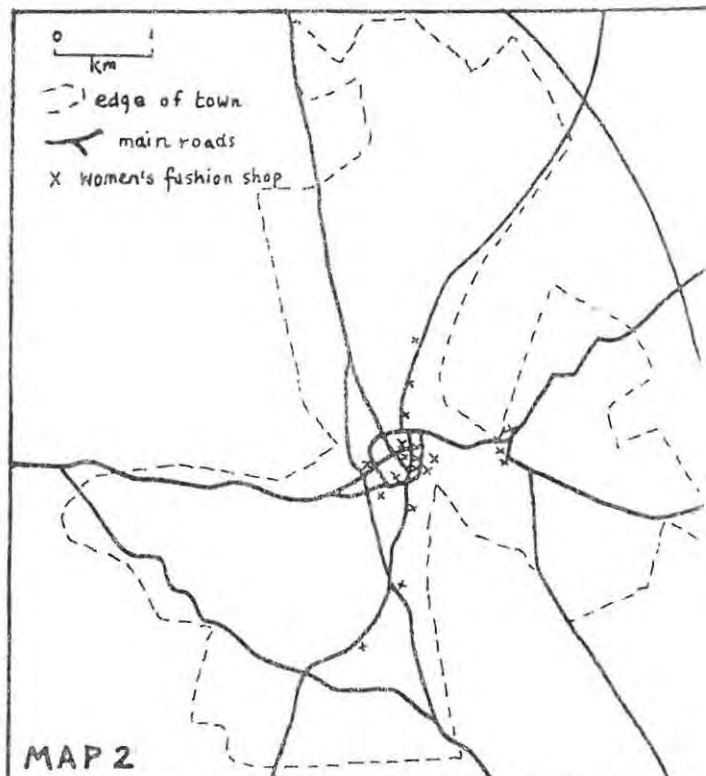
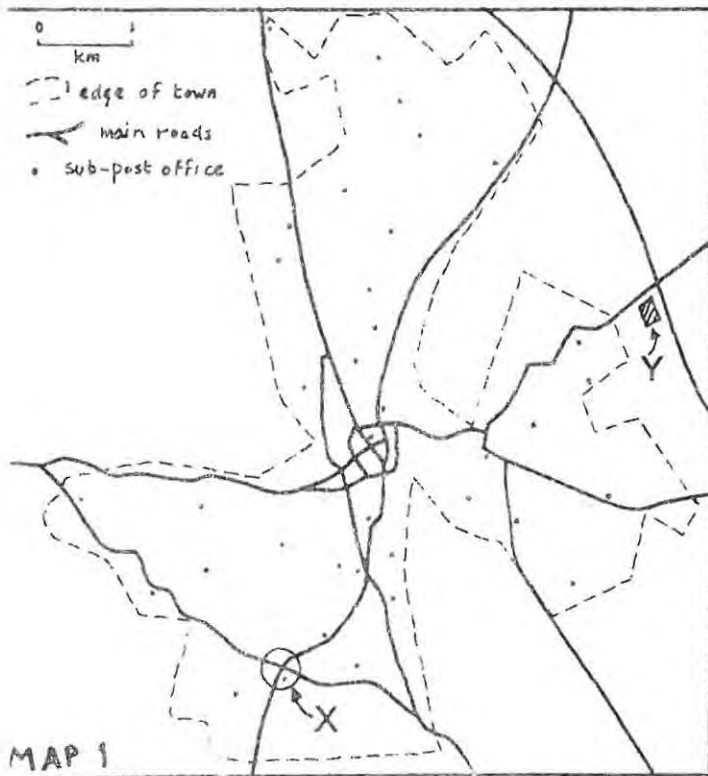
3. _____

(3)

(e) Describe the characteristics of an outer suburban area of owner-occupied housing. You should refer to the appearance of the area and the characteristics of its population.

(5)

B5. Study the maps below which show the distribution of sub-post-offices (Map 1) and women's fashion shops (Map 2) in a large town.



(a) Describe and suggest reasons for the distribution of sub-post-offices.

Description of distribution: _____

Reasons for distribution: _____

(4)

(b) Most of the women's fashion shops are concentrated in one part of the town.

(i) What special name is given to this part of town?

(ii) Why are most of the women's fashion shops concentrated there?

(3)

(c) The shopping centre enclosed by a circle and labelled X on Map 1 contains a sub post-office but does not contain a women's fashion shop.

(i) What type of shopping centre is this likely to be?

.....
(ii) Name *four* types of shop likely to be found there.

1. 2.

3. 4.

(iii) Suggest *one* reason why a shopping centre has grown up there.

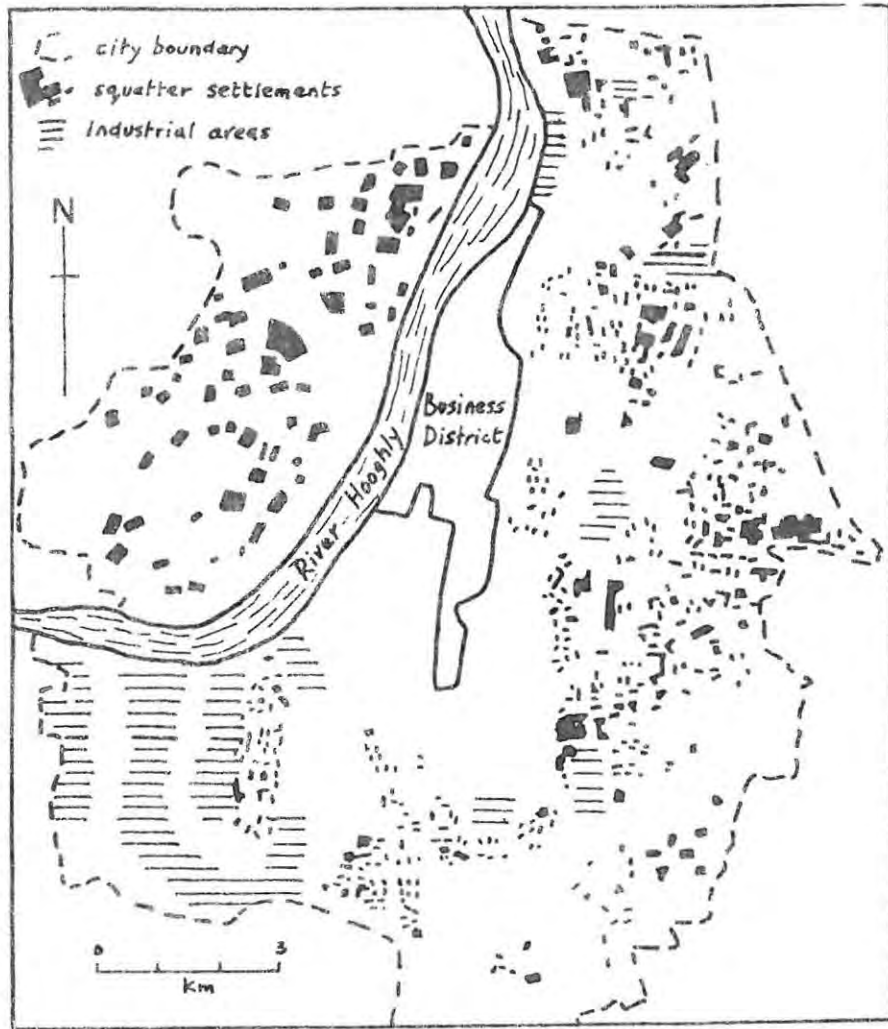
.....
.....
.....
.....
(4)

(d) (i) Name the type of shopping facility likely to be found at Y on Map 1.

.....
(ii) Describe its main characteristics.

.....
.....
.....
.....
.....
.....
.....
(4)

6. Study the map below which shows the distribution of squatter settlements in Calcutta.



- (a) Less than half the population of Calcutta was born in the city, and this situation is true of most large cities in the developing world. Why is migration from the countryside to cities such a marked feature of countries in the developing world?

SECTION C : PEOPLE , PLACE AND WORK

- C7 (a) Study the table below which suggests four reasons for the loss of jobs.
- (i) Using *four* items from the list below the table complete Column 1.
- (ii) Using your own knowledge complete Column 2, naming a different area in each case.

Loss of jobs — REASONS	Column 1 Example of economic activity	Column 2 Area in Great Britain where activity is carried out
1. Exhaustion of local resources		
2. Introduction of machinery or new methods needing fewer workers		
3. Fall in the demand for the products		
4. Closure due to high costs of production ... old, inefficient methods, competition from more cheaply produced goods		

cotton manufacturing / oil refining / coal mining / wheat farming / ship building / production of nuclear power / manufacture of electronic instruments

(6)

- (b) The map below shows those parts of England and Wales where the loss of jobs in primary and secondary occupations has been great.



- (i) Explain fully what is meant by the terms primary occupations and secondary occupations.

Primary occupations: _____

Secondary occupations: _____

- (ii) Describe the distribution of the areas where job loss in primary and secondary occupations has been great, as shown on the map on page 14.

- (iii) Give *three* reasons why manufacturing firms are moving from the Midlands and South-east of England to the regions of great job loss.

1. _____

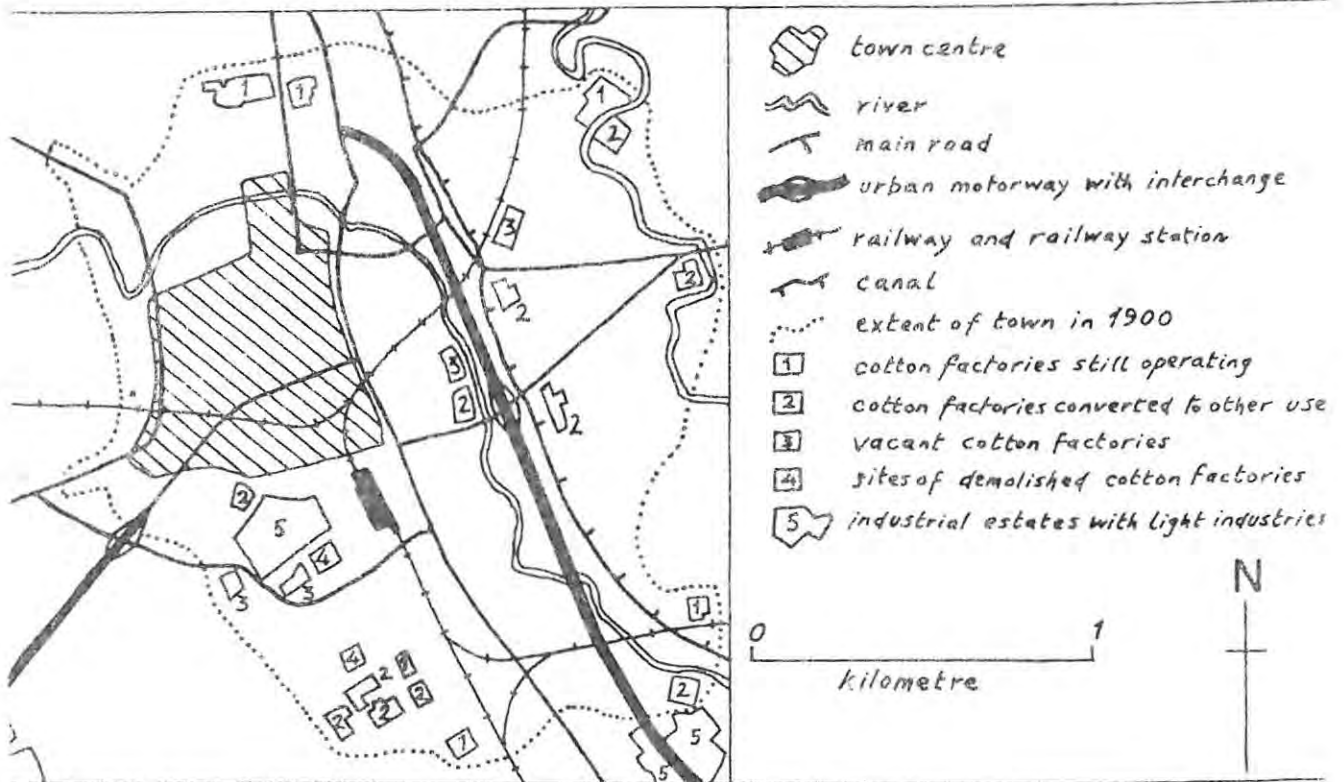
2. _____

3. _____

(9)

[TURN OVER

8. Study the map below showing the distribution of industry in a town in Northern England.



(a) 50 years ago when the cotton industry was at its height all the factories in groups 1–4 (see map key) were manufacturing cotton.

Using map evidence only name four types of cotton factory site and for each one explain why it would have been a good site for a cotton factory 50 years ago.

Type of Factory Site	Why it would have been a good site

(b) Describe the differences you would expect to find in the appearance of a cotton factory and a factory on an industrial estate.

(2)

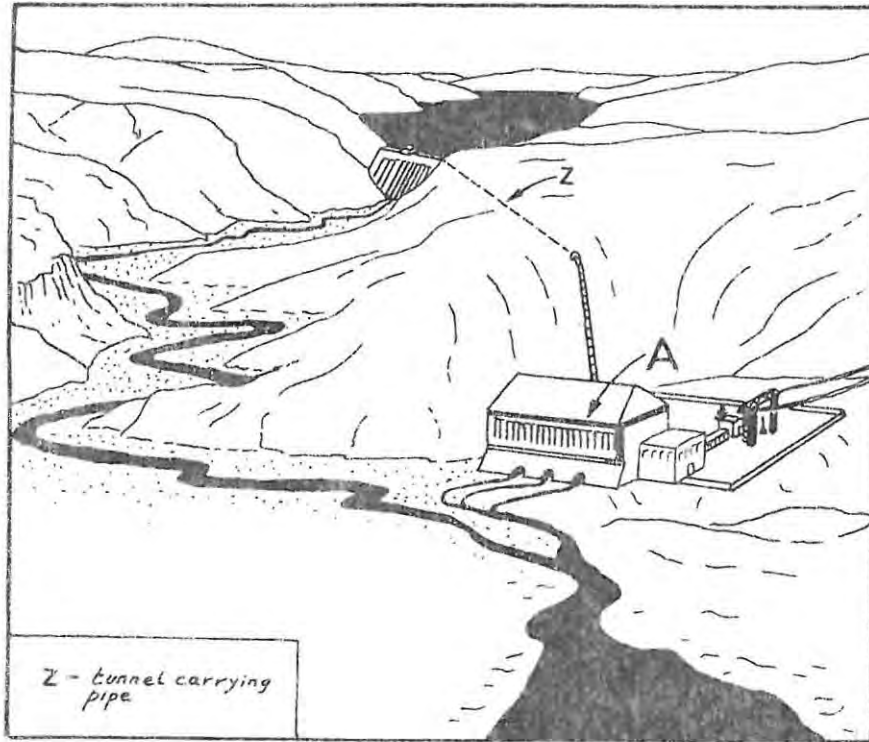
(c) Using map evidence and your own knowledge state where industrial estates are usually found in towns and say what advantages such sites have.

Where industrial estates are usually found in towns:

Advantages of such sites:

(5)

C9. Study the sketch below which shows a modern economic development in an upland rural area.



(a) (i) What is being produced at A?

.....

(ii) Describe the main features of the development as shown in the sketch.

.....
.....
.....
.....
.....
.....
.....
.....

(5)

(b) (i) Suggest *one* way in which such a development could damage the environment *during its construction*.

.....
.....

(ii) Suggest *one* way in which such a development could damage the environment *after its construction*.

.....
.....

(2)

c) Name *three* advantages of establishing such a development in an upland rural area.

1. _____

2. _____

3. _____

(3)

d) Choose *one* of the following economic activities.

limestone quarrying / potash mining / oil storage and refining / oil production from wells

For the one you choose, name an area where it is carried on and describe the ways in which such an activity could harm the environment.

Activity chosen: _____

Area where it is carried on: _____

Ways in which it could harm the environment:

(5)

b13

GEOGRAPHY
 Young School Leaver (Group)
 Paper 2
QUESTION AND ANSWER BOOK
 Monday, 11th June, 1979
 9.30 — 11.15

YORKSHIRE REGIONAL EXAMINATIONS BOARD

Certificate of Secondary Education

GEOGRAPHY
 Young School Leaver (Group)

Paper 2

Reading time: 15 minutes
 Examination time: 1½ hours

QUESTION AND ANSWER BOOK

Candidate's Name _____

Candidate's Centre _____

Examination Number

Centre Number	Candidate Number

Answer all questions in the spaces provided. If there is insufficient space for your answer continue on page 10 of this book and state that you have done so.

The maximum mark allocated to each section of a question is shown in brackets at the right-hand side of the page.

Question Number	Examiner Mark
1.	
2.	
3.	
4.	
Total	

Study the Ordnance Survey map extract provided for this question.

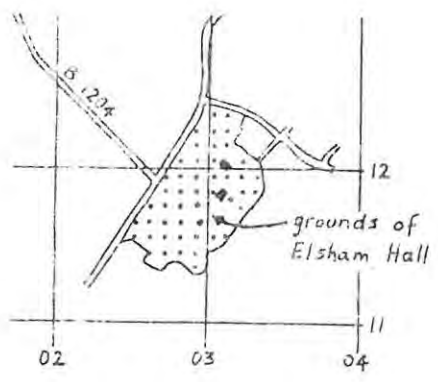
(a) Complete the sentences (i) to (v) below by entering the leisure activities from the following list which best suit the locations at the five grid references.

- A game of golf
- Fell walking
- Fishing
- Rock climbing
- A visit to an historic site
- Bird watching
- Searching for fossils
- Train spotting

- (i) _____ is likely to take place at 068015.
- (ii) _____ is likely to take place at 028109.
- (iii) _____ is likely to take place at 989090.
- (iv) _____ is likely to take place at 965098.
- (v) _____ is likely to take place at 053098.

(5)

(b) The sketch-map below shows the location and extent of the grounds of Elsham Hall. Suggest *four* reasons why the grounds of the hall would make a good site for a country park.



- 1. _____
- 2. _____
- 3. _____
- 4. _____

(4)

(c) A newcomer to the area shown on the map has obtained a job in Brigg at 995070. He has found suitable houses for purchase in the centre of the village of Wrawby at 018089 and in the centre of the village of Scawby at 967055, but cannot decide which house to buy.

(i) The length of his journey to work from Wrawby *or* Scawby would be exactly the same. Which of the following distances would be the length of his journey *to work and home again* if he bought a house in the centre of one of the two villages? Tick the correct answer in one of the boxes provided.

4 km

5 km

7 km

9 km

10 km

(ii) Explain fully the following statements:

"If the newcomer bought a house in Wrawby he may be delayed at 004072 on his car journey to work."

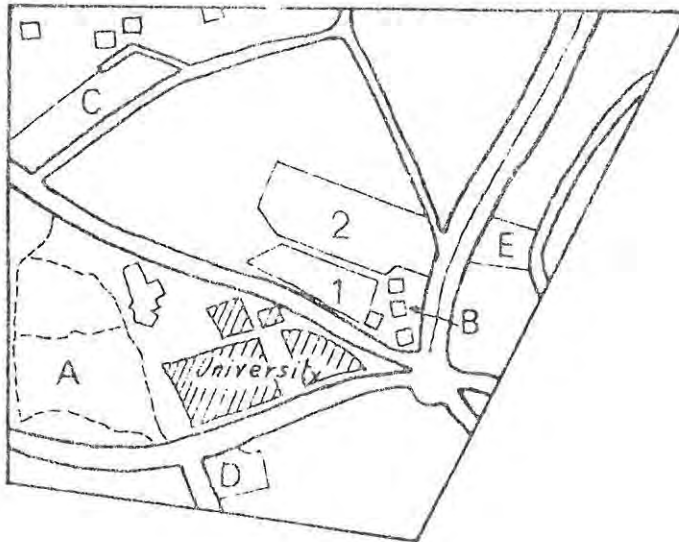
"If the newcomer bought a house in Scawby he may be delayed at 980058 on his car journey to work."

(6)

(d) The factory at 989061 produces sugar from sugar beet grown in the surrounding region. What are the advantages of the site for such a development?

(4)

Study the photograph provided for this question together with the sketch-map below which shows the area covered by the photograph.



↑ general direction
in which the camera
was pointing

- (a) (i) Five areas are labelled A, B, C, D and E on the sketch map. Study the list of urban features below and select the correct ones to complete the accompanying table.

	Letter	Name of urban feature
car park		
high-rise residential development	A	
heavy manufacturing industry	B	
public open space	C	
open air swimming pool	D	
building site	E	
cathedral		
derelict land		

- (ii) Which two of the features you have entered in the table indicate that urban renewal is taking place in the area shown in the photograph?

1. _____ 2. _____ (6)

- (b) (i) Name the type of housing at 1 on the sketch-map.

(ii) Using photograph evidence and your own knowledge, describe the characteristic features of the housing at 1.

- (c) It is planned to use area 2 shown on the sketch-map for a large new bakery employing 600 women and 200 men on shift work. The products of the bakery will be distributed to shops in the surrounding urban area.

Name *three* advantages that area 2 offers as the site for the new bakery.

1. _____

2. _____

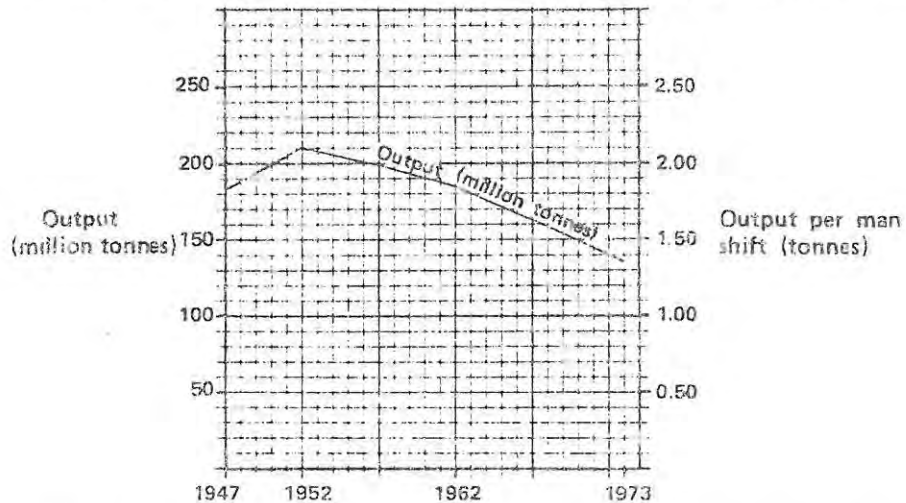
3. _____

(3)

3. Study the table below which shows trends in the British coal mining industry.

Year	Output (million tonnes)	Manpower (000s)	Collieries	Output per man shift (tonnes)
1947	185	707	958	1.07
1952	211	705	880	1.21
1962	188	536	616	1.56
1973	138	268	281	2.29

(a) The information about output has been graphed below. Using the scale on the right-hand side of the graph add the information about output per man shift.



(2)

(b) (i) Suggest *two* reasons why coal has become less popular as a source of fuel and power since 1947.

1. _____

2. _____

(ii) Suggest *two* geological reasons why hundreds of collieries have been closed since 1947.

1. _____

2. _____

(iii) What evidence is there in the table and on the graph to suggest that the coal-mining industry has been extensively mechanised since 1947?

(6)

- (c) Study the passage below about declining coal mining areas.

"The decline in the demand for coal miners has led to the growth in many coal mining areas of industrial estates containing light industries. Many former coal miners find employment in such industries. The industries have often moved to the coalfields because of government assistance which is available to firms willing to move to declining areas."

- (i) Give *two* examples of light industries.

1. _____ 2. _____

- (ii) Explain clearly what is meant by the term "industrial estate".

- (iii) List *four* ways in which the government can assist firms that wish to establish themselves in declining areas.

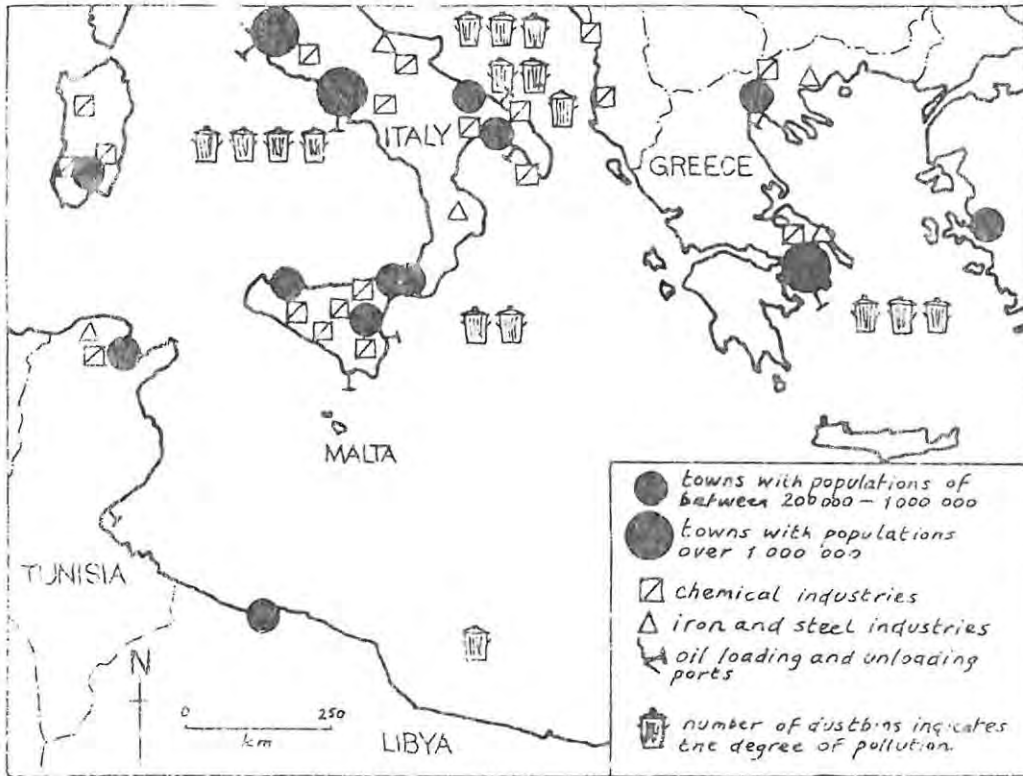
1. _____

2. _____

3. _____

4. _____

Study the map below which shows pollution in part of the Mediterranean Sea.



(a) Why may pollution on the shores of the Mediterranean Sea affect the foreign earnings (money earned by providing services or products for overseas customers) of the countries in the area?

(2)

(b) Study the list of areas below and arrange them in rank order according to how polluted their coastal margins are likely to be. Put the place which is likely to be most polluted at number 1, the place which is likely to be least polluted at number 4, and put the other areas in the correct order in between.

- | |
|------------------------------|
| east coast of mainland Italy |
| Libya |
| west coast of mainland Italy |
| east coast of Greece |

Rank Order:

1. _____
2. _____
3. _____
4. _____

(2)

(c) Explain how the following may contribute to the amount of coastal pollution in the area shown on the map.

(i) Large coastal cities: _____

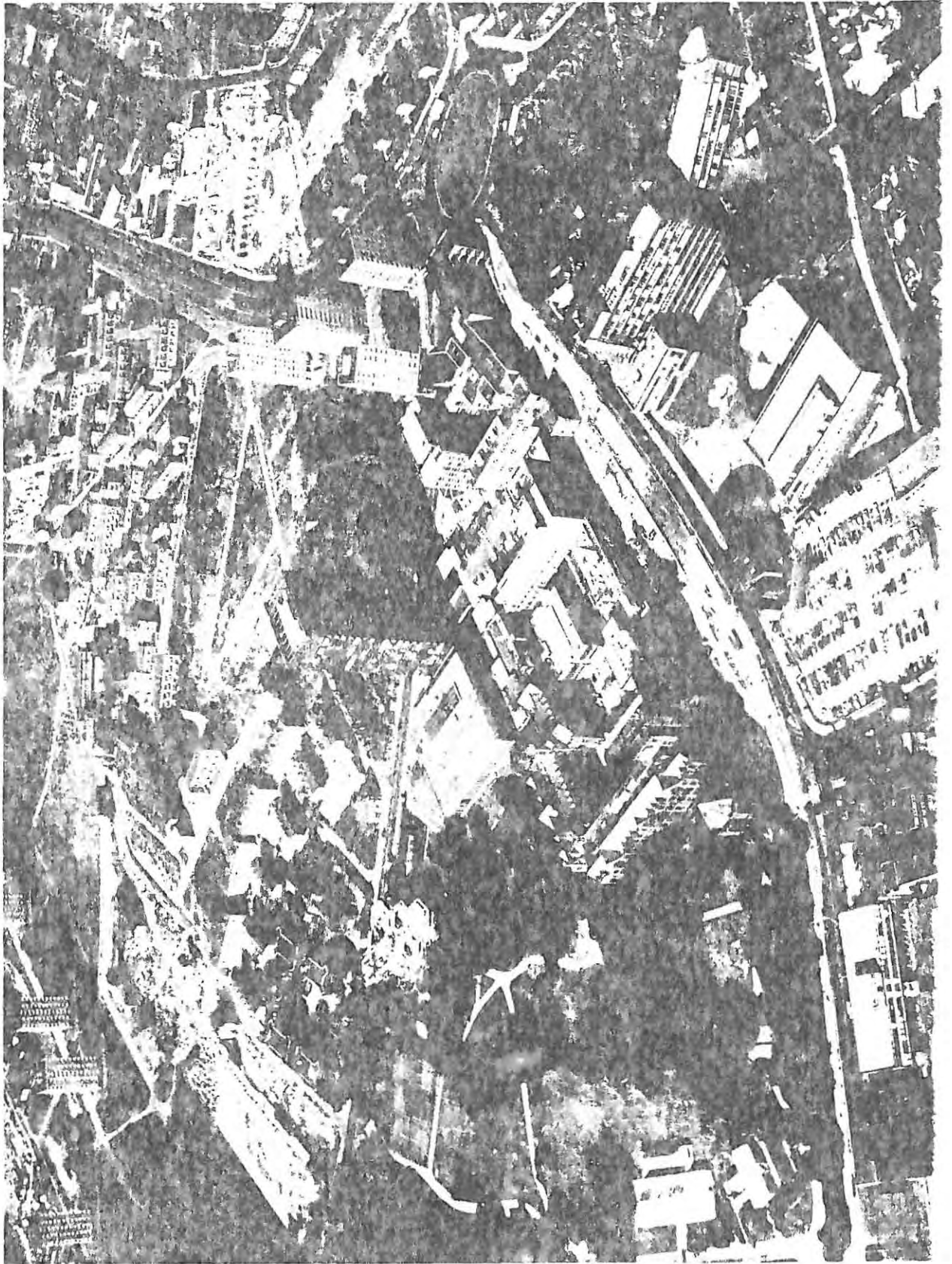
(ii) Iron and steel industries: _____

(iii) Oil loading and unloading ports: _____

(iv) Chemical works: _____

(v) Rivers flowing to the sea: _____

Photograph for Question 2



West Midlands Examinations Board

Certificate of Secondary Education

GEOGRAPHY SYLLABUS 1

PAPER 1 — BRITISH ISLES

Monday, 11th June, 1979

Alternative A Working time 9.30 — 11.45 am

Alternative B Working time 9.30 — 11.15 am

Alternative A

Answer *FOUR* questions only.

Alternative B (for candidates submitting a Field Study)

Answer *THREE* questions only.

You may use an atlas to answer the questions in this paper. Please give the name of the atlas on the cover of your answer book.

Each question answered carries a total of 20 marks. For those questions which are subdivided into sections the number of marks carried by each section is indicated in brackets at the end of that section.

The photographs for use with question 4 are attached at the end of the question paper. These pages may be detached by the candidate for ease of answering.

Credit will be given for sketch maps and diagrams if these are relevant to the answer.

Do not answer more than the required number of questions. Additional answers will be marked.

The map extract shows Swindon, the largest industrial town in Wiltshire. The prosperity of the town came with the old Great Western Railway works.

- (a) (i) Name the motorway which crosses the map area.
- (ii) Name the A-class road which gives Swindon access to the motorway on the map area.
- (iii) Name TWO features shown in square grid reference 0983, adjacent to the motorway, which have been built to minimise gradients on this section of motorway.
- (iv) Give the six-figure grid reference of the railway station at Swindon.
- (v) Identify the type of railway track at EACH of the following grid references: 118828 and 123862.
- (vi) Give the six-figure grid reference of the railway junction to the SOUTH WEST of the station at Swindon.
- (vii) Give the map evidence in square grid reference 1090 which shows that Cricklade WAS connected to Swindon by railway.
- (viii) Does map evidence show that this railway connected with the present station at Swindon? (5)
- (b) (i) Works are shown in various parts of Swindon, for example, in squares grid references 1384 and 1386. Which of these two works is most likely to be the old Great Western Railway works? Give ONE reason in support of your choice.
- (ii) Describe ONE difference between the street patterns shown in square grid reference 1535 SOUTH of the railway and WEST of the A345, and in the Park district, square grid reference 1783.
- (iii) Which area, 1585 or 1783, has the lower density of buildings?
- (iv) Give ONE reason why Stratton St. Margaret, square grid reference 1787, has NOT been able to expand NORTH EASTWARDS. (4)
- (c) (i) Give TWO pieces of evidence on the map at Cricklade which suggest that there have been settlements there for a very long time. (Do NOT give either the old railway or the old canal.)
- (ii) Name the TWO rivers whose confluence (junction) is to the EAST of Cricklade. (2)

Question continued on the next page

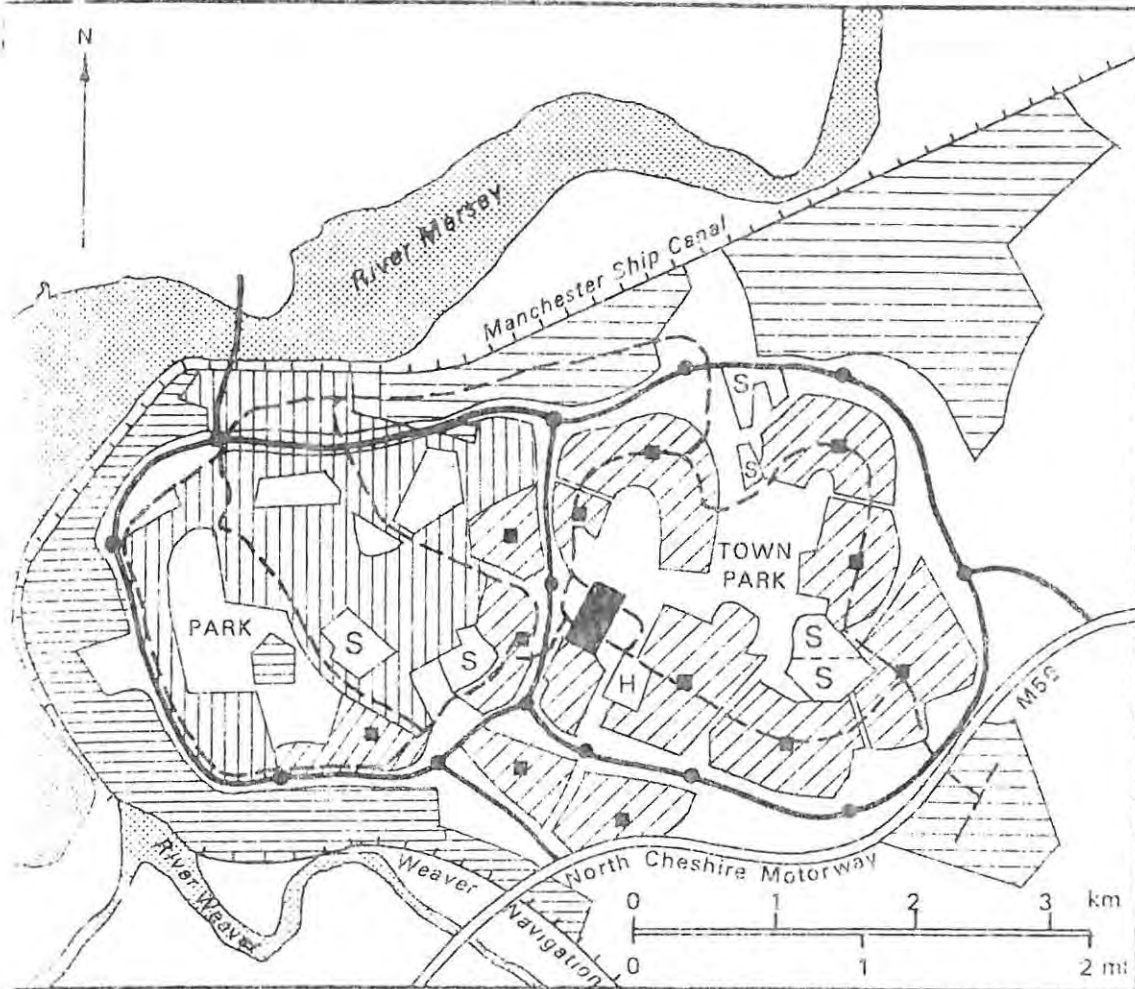
- (d) (i) Describe FULLY the shape of the village of Purton, square grid reference 0887, and state its approximate height.
- (ii) Describe FULLY the shape of Chelworth Upper Green and Chelworth Lower Green, square grid reference 0892, and state its approximate height.
- (iii) Name FOUR services shown on the map in the village of Purton, which are NOT shown at Chelworth Upper Green and Chelworth Lower Green.
- (iv) Where are the people of Chelworth Upper Green and Chelworth Lower Green likely to obtain TWO of these services ?
- (v) Where would the inhabitants of both villages probably go to for other services ?
- (vi) Name the lake in square grid reference 1782.
- (vii) Is this lake natural or artificial ?
- (viii) Describe what has happened to the former lake in Lydiard Park, square grid reference 1084.

19

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Figure 2/1

RUNCORN NEW TOWN – THE MASTER PLAN



Key to present and proposed land uses. (Proposed area 2930 hectares (7234 acres)).

- Town Centre (Central Business District)
- Centres of Neighbourhood Units
- H Proposed Hospital
- S Secondary Schools and Proposed Secondary Schools
- Existing Housing Areas (Prior to 1965)
- New and Proposed Housing Areas (Post 1965)
- Existing Industrial Areas (Prior to 1965)
- New and Proposed New Industrial Areas (Post 1965)
- Water
- New Urban Expressway (Post 1965)
(Exit/Entrance Point)
- New Urban Busway (Post 1965)

Question continued on the next page

- (a) The Master Plan of Runcorn New Town, Figure 2/1 opposite, was produced by Professor Ling in 1960. The plan is for a town to accommodate seventy thousand people, the existing town only being able to accommodate twenty-six thousand people. Study the Master Plan carefully and, with the help of your atlas, answer the following questions.
- (i) Name the water transport feature which will be the northern boundary of the New Town.
 - (ii) Which port is the eastern terminus of this water transport feature?
 - (iii) Name the motorway which will form the southern boundary of the New Town.
 - (iv) Name the twin town linked to Runcorn by the modern road bridge across the Mersey.
 - (v) How many new and proposed housing areas are shown on the Master Plan?
 - (vi) Give the full name of the public transport feature which links the housing areas together.
 - (vii) Give the full name of the transport feature which separates the proposed new housing areas from the proposed new industrial areas on the Master Plan.
 - (viii) Give the full name of the recreational feature in the centre of the new housing areas. (6)
- (b) (i) The Urban Busway is a route for buses only in this New Town. Describe THREE ways in which this feature will reduce transport problems in this New Town.
- (ii) The housing areas in this New Town are called Neighbourhood Units. Name FOUR features which you would expect to find in a neighbourhood unit in addition to housing. (5)

Turn over for the rest of the question

POPULATION GRAPHS

Figure A — THE UNITED KINGDOM

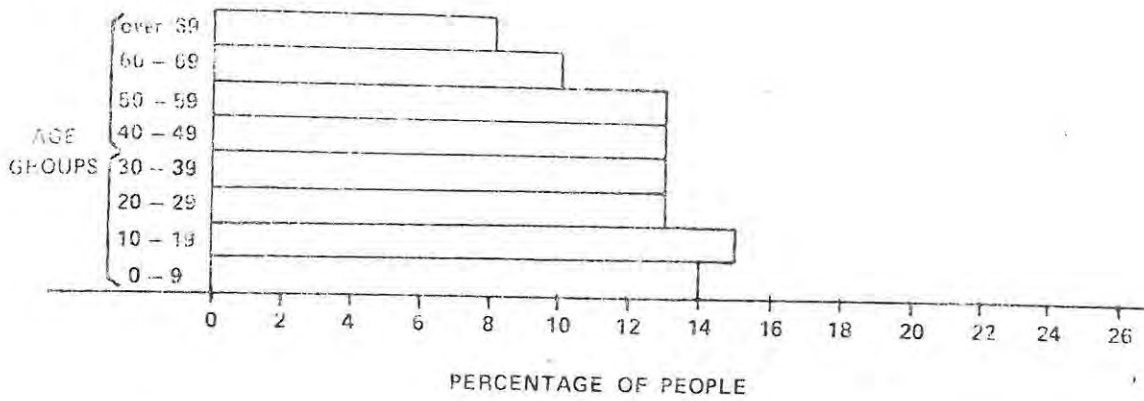


Figure B

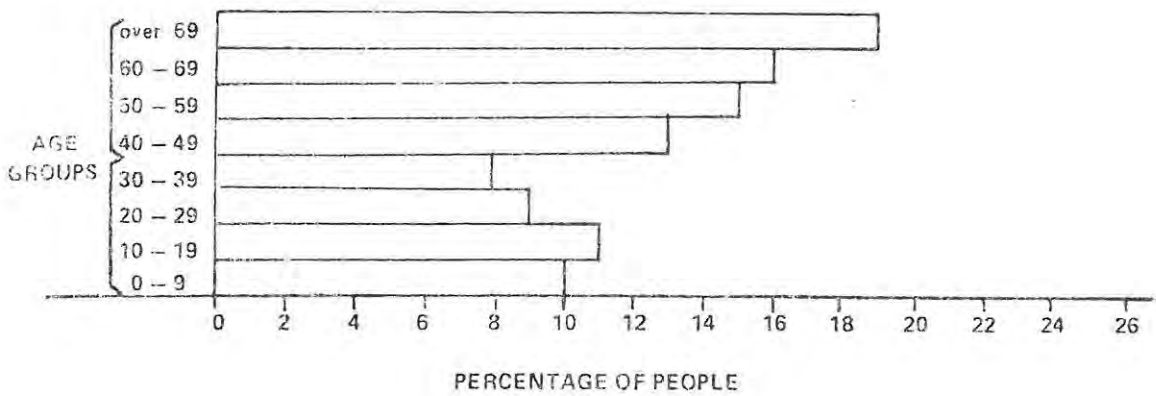
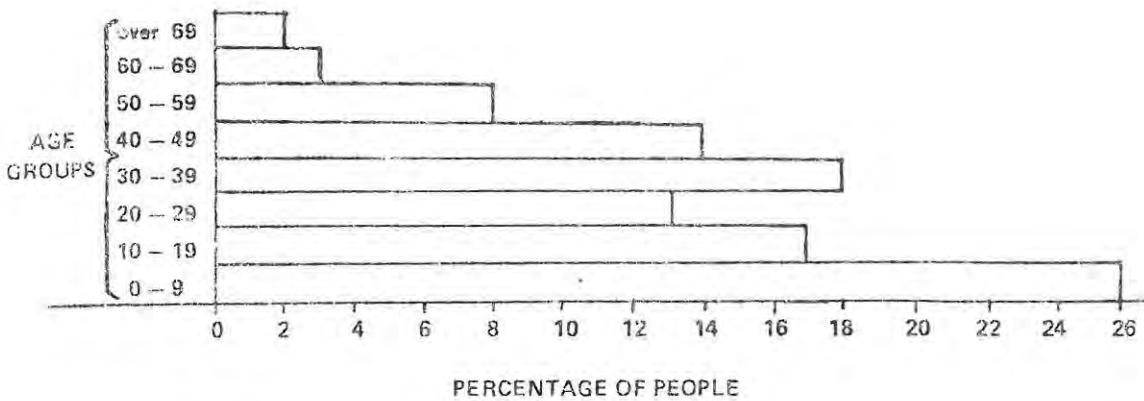


Figure C



(c) Study the three population graphs on Figure 2/2 above. Figure A shows the percentages of people in each of the eight age groups shown for the United Kingdom in the early 1970s. The other two graphs are for two towns in the United Kingdom.

- (i) Which graph is most likely to be Brighton in East Sussex ?
- (ii) Give TWO reasons for your choice.
- (iii) Give TWO reasons why the other graph could be a New Town. (5)

Question continued on the next page

- (d) While New Towns have been built, many inner city areas have been rapidly losing people.
- What name is given to these Inner city housing zones ?
 - When these zones are knocked down, what sort of new housing usually replaces the Victorian and Edwardian terraces ?
 - Give TWO reasons why inner city areas are unpopular places to live at the present time.

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3 The West Midlands

Figure 3/1

TABLE TO SHOW A NUMBER OF WEST MIDLANDS URBAN AREAS AND SOME OF THEIR INDUSTRIES

	SAMPLE TOWNS (CITIES)	SELECTED GROUPS OF INDUSTRIES						
		A	B	C	D	E	F	G
		COAL MINING	BRICKS/GLASS OR POTTERY	METAL WORKING	MOTOR VEHICLES AND COMPONENTS	ELECTRICAL ENGINEERING	OTHER ENGINEERING	LEATHER AND TEXTILES
1	STOKE ON TRENT AREA	✓	✓	✓	✓	✓	✓	✓
2	CANNOCK	✓	✓		✓		✓	
3	WOLVERHAMPTON			✓	✓	✓	✓	✓
4	BIRMINGHAM			✓	✓	✓	✓	✓
5	BRIERLEY HILL		✓	✓	✓		✓	
6	COVENTRY	✓			✓	✓	✓	✓
7	KIDDERMINSTER					✓	✓	✓
8	WORCESTER		✓				✓	✓

- (a) Study Figure 3/1 above and with the help of your atlas answer the following questions.
- Which urban area shown has every group of industries ?
 - Which group of industries is found in each urban area shown on the figure ?
 - Which urban area is furthest south ?
 - Which urban area is furthest east ?
 - Which urban area has group B but not group D industries ?
 - Which urban area has group C but not group G industries ?
 - Which urban area has NEITHER group B NOR group D industries ?
 - Which group of industries shown is a PRIMARY industry ?
 - Which urban area named on the table has the largest number of workers engaged in craft industries such as gunmaking and jewellery manufacture ?

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(b) The high quality lead crystal glass industry of Brierley Hill uses local raw materials, clay for the pots in which the glass is fired in the kilns, and some local sand. The pottery industry at Stoke-on-Trent also uses local clay for the kiln bricks and for the manufacture of rough earthenware goods.

- (i) What other solid material was obtained locally for these two industries ?
- (ii) Which raw material from South-West England is used in the pottery industry ?
- (iii) What is the most important location factor for these two industries today ?
- (iv) Both industries are successful exporters of fragile, high quality goods. Which TWO developments in road transport have helped both industries ? (5)

(c) In 1978 an iron and steel industry still survived at Bilston in 'the Black Country'.

- (i) For what purpose did the iron industry use limestone quarried at Dudley ?
- (ii) In the early days of this iron industry the iron ore was mined in the West Midlands near to the iron works. What was this iron ore called ?
- (iii) In recent years ore has been brought to Bilston from outside the West Midlands. How has this iron ore been transported ?
- (iv) In addition to pig iron the steel works has used a vast amount of scrap. Give TWO reasons why scrap has enabled the industry to survive competition from large, modern, coastal steel works. (5)

(d) The Black Country has a number of chemical works, for example British Oxygen Company at Wolverhampton.

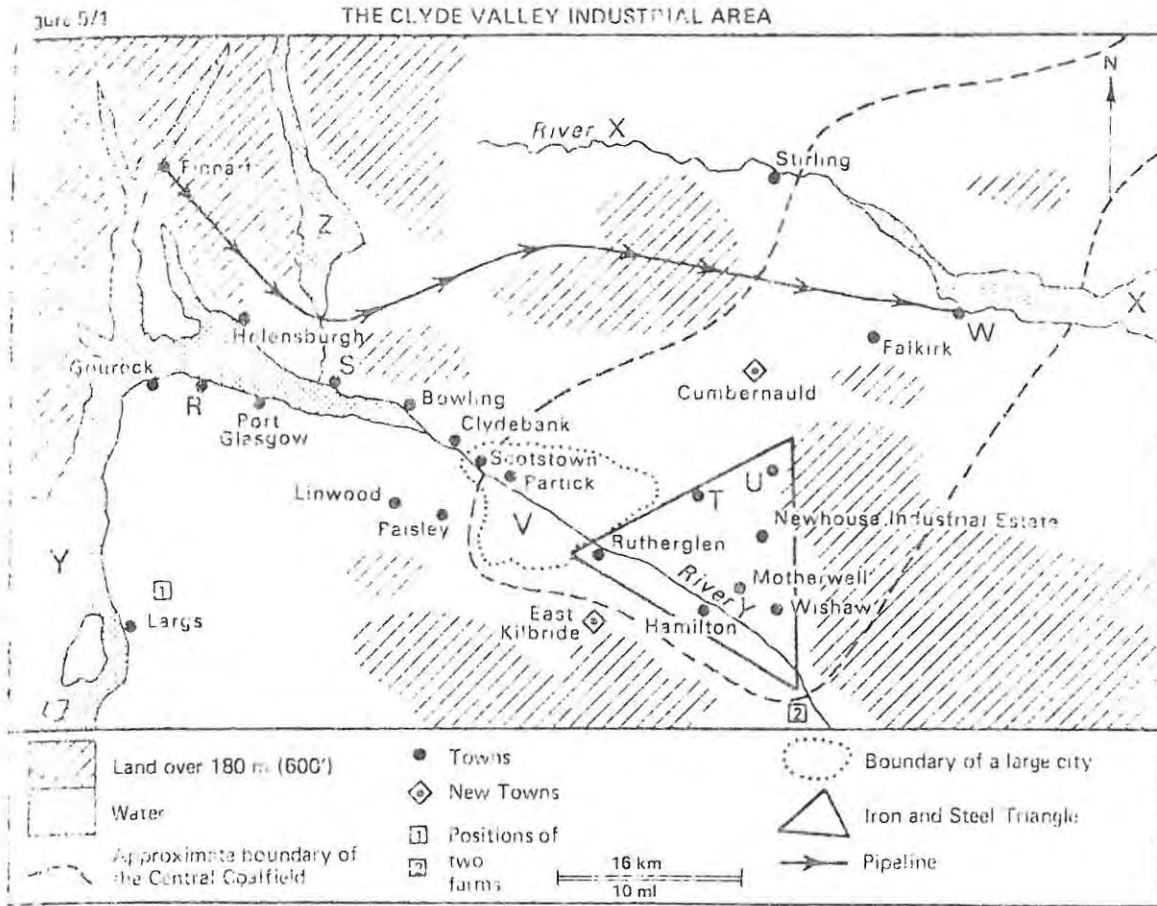
- (i) Describe THREE factors which make the West Midlands a good area for the location of the chemicals industry.
- (ii) Describe TWO features of the industry which makes it undesirable in this region. (5)

20

4 West Yorkshire and Humberside

- (a) Study photograph 4/1 *attached at the end of the question paper* of Hebden Bridge in the Calder Valley.
- (i) Areas R and S contain industrial buildings. Describe TWO main differences in their appearance on the photograph.
 - (ii) Name feature X which passes near buildings R.
 - (iii) Name feature Y which passes near buildings S.
 - (iv) Describe the sort of houses shown at T.
 - (v) Describe the probable agricultural land use in area U. (5)
- (b) (i) Hebden Bridge is one of the wool textile towns of West Yorkshire. Name TWO features on photograph 4/1 other than buildings which helped this industry to develop here.
- (ii) In recent years this industry has declined at Hebden Bridge. Give ONE reason why the wool textile industry has declined in this area.
 - (iii) Give ONE reason why it is hard to attract 'new' industries to areas like this.
 - (iv) As well as being used for farming, woodland, housing and industry, what other main land use is found in this valley? (4)
- (c) Study photograph 4/2 *attached at the end of the question paper* of the port of Goole.
- (i) Name river S and the features at the dock entrances at R.
 - (ii) Name the type of boats moored at T and at U.
 - (iii) Name the probable use of the buildings at V and at W.
 - (iv) Name FULLY the transport feature at X and explain why it is needed there.
 - (v) Identify the transport feature at Y and explain why it has so many branches in the area shown on the photograph. (6)
- (d) (i) Describe the type of farming shown on photograph 4/2 at Z.
- (ii) Give ONE piece of evidence on the photograph which suggests that the land near to Goole has been reclaimed from marshland. (2)
- (e) (i) Hebden Bridge is in the hinterland of Goole. Explain the meaning of the 'hinterland of a port'.
- (ii) Goole is a transhipment (transit) port. Explain what this means.
 - (iii) Goole is a smaller port than Hull even though it is much closer to the industrial area of West Yorkshire. Give ONE main reason why Goole is smaller than Hull as a port. (3)

20



(a) Study the map of the Clyde Valley, Figure 5/1 above, with the aid of your atlas, and answer the following questions.

- (i) Name shipbuilding town R and ex-shipbuilding town S.
- (ii) Name steelmaking towns T and U.
- (iii) Name urban settlement V.
- (iv) Name refinery town W.
- (v) Name rivers/estuaries X and Y.
- (vi) Name the area of water Z.
- (vii) Name the substance carried from FINNART to town W. (5)

(b) Two farms are marked 1 and 2 on the map. One is arable, the other pastoral.

- (i) Which farm is likely to be pastoral?
- (ii) Which famous breed of animal is often kept in this area?
- (iii) What does this animal produce for market?
- (iv) Which feature of the climate prevents this farm from producing cash crops?
- (v) The other farm is a small, intensive arable farm with glasshouses and fruit fields. What is the usual name for this type of farming?
- (vi) Give one physical reason why this farm can be used for intensive arable farming.
- (vii) Name the main market centre for both farms (5)

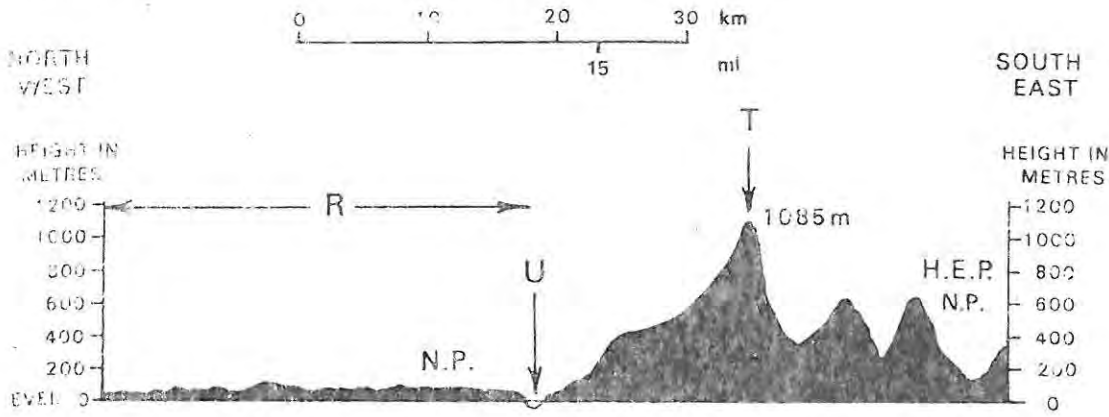
Question continued on the next page

- (c) (i) The iron and steel triangle is a major steel producing area. Which TWO locally available solid raw materials helped the steel industry to grow here in the nineteenth century?
- (ii) Which industry on Clydeside provided the main market for the products of the steel industry?
- (iii) Heavy engineering is the main steel using industry in this iron and steel triangle. What is meant by the term 'Heavy Engineering'?
- (iv) Which TWO physical features of the Firth of Clyde have helped the shipbuilding industry there?
- (v) Give ONE reason why steel production has declined in this area in recent years. (4½)
- (d) (i) Name the deep water loch on which the tanker terminal at Finnart has been built.
- (ii) Give ONE physical reason why FINNART is NOT a suitable site for an oil refinery.
- (iii) Give ONE physical reason why an oil refinery has been built near to town W. (2½)
- (e) (i) The old industrial towns of the Clyde Valley have some areas of very poor housing. Give TWO examples of a type of settlement shown on the map (Figure 5/1), which have been built to help cure the housing problem.
- (ii) The decline in traditional heavy industries has caused an unemployment problem. What feature on the map, Figure 5/1, has been built to help cure this problem?
- (iii) What is the general name for the variety of new industries introduced into this area in recent years?
- (iv) Describe ONE example of a new industry in this area. (3)

 20

Section 6/1

WALES -- With a Land Use Transect



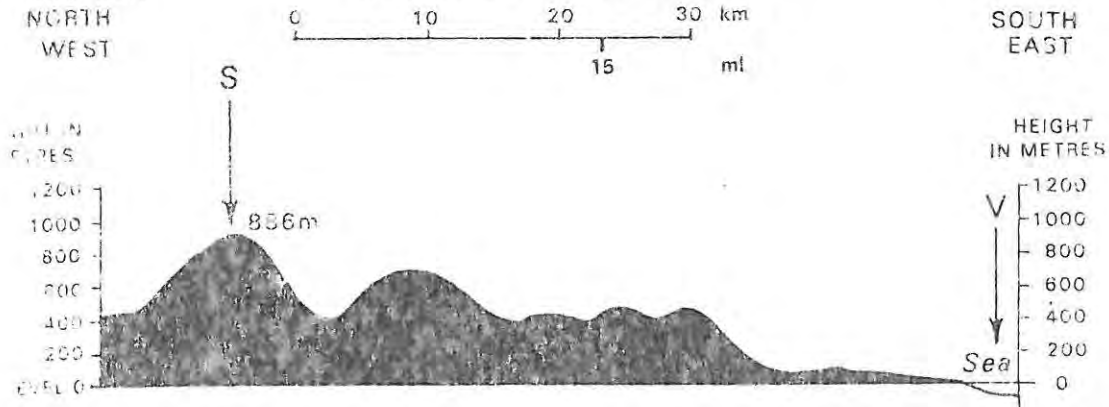
TRANSECT SHOWING MAIN LAND USES

Mixed farming with fattening of lambs. Dairying and early potatoes. Tourism.	Sea Strait	Dairying Hill farming. Quarrying. Coniferous Plantations. Tourism.	Lake Coniferous Forest
--	------------	--	---------------------------

KEY: H.E.P. = Hydro Electricity N.P. = Nuclear Power

Section 6/2

WALES -- With a Land Use Transect



TRANSECT SHOWING MAIN LAND USES

Hill Farming and Forestry	Lake Water Supply	Hill Farming and Forestry	Mining, Industry Waste Land	Hill Farming and Waste Land	Mining, Industry Hill Farming and Waste Land	Hill Farming and Waste Land	Dairying and Industry.	Sea
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Question continued on the next page

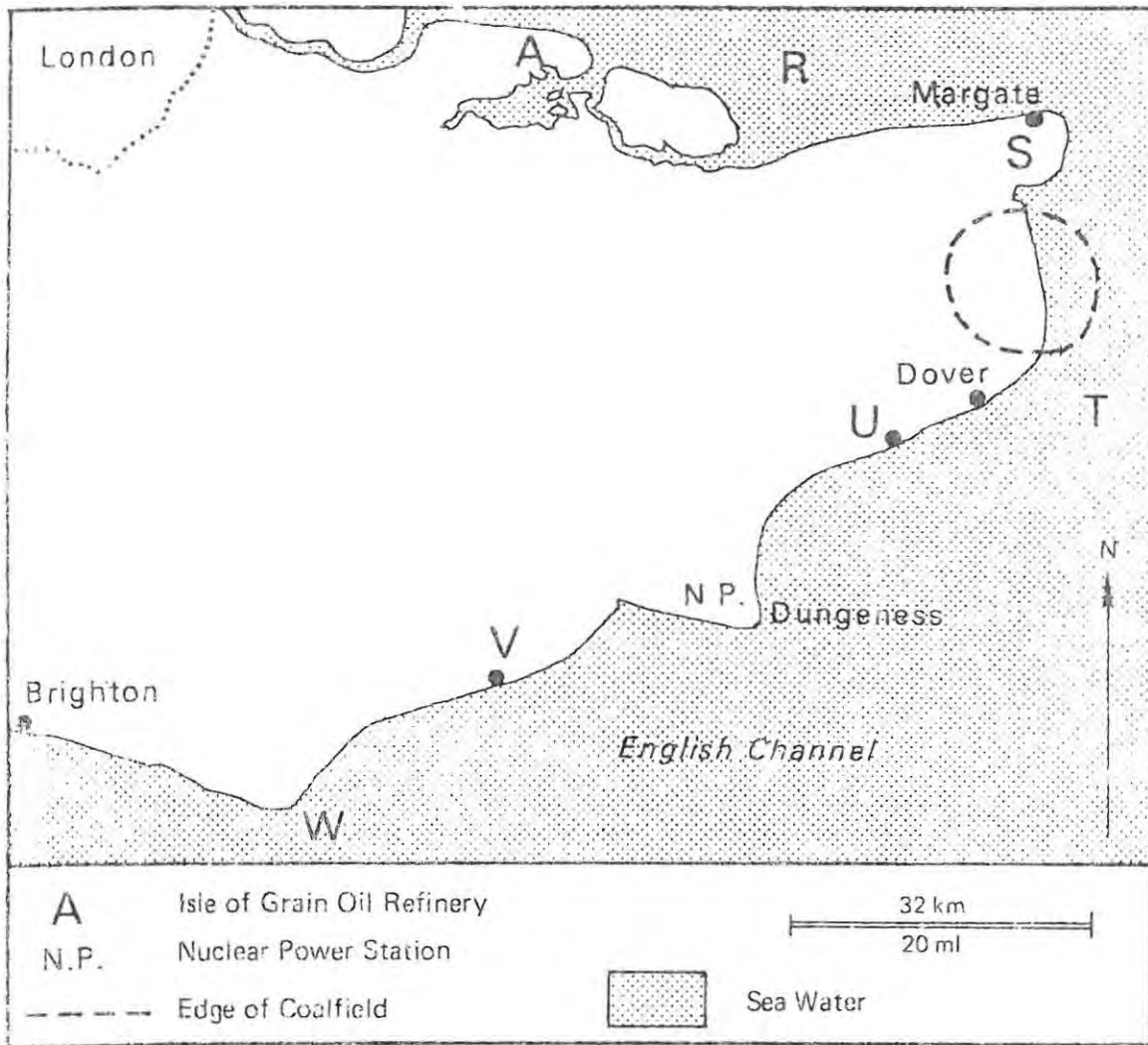
- (a) With the help of your atlas study sections 6/1 and 6/2. One section is across part of North Wales, the other is across part of South Wales. With each section there is a transect showing the main land uses.
- (i) What is the length in kilometres of each section ?
 - (ii) Which section has the highest upland area ?
 - (iii) Which section is across part of South Wales ?
 - (iv) Give ONE reason to support your choice.
 - (v) Identify area R.
 - (vi) Name uplands S and T.
 - (vii) Name sea areas U and V. (5)
- (b) (i) In which of the two areas shown would you find the highest population ?
- (ii) Give TWO reasons why this area has the highest population from the information given in the section and transect.
 - (iii) Is section 6/1 an area of mainly PRIMARY or SECONDARY industry ?
 - (iv) Give THREE main occupations of this area.
 - (v) Will the majority of people who inhabit the area of section 6/2 be mainly employed in PRIMARY or SECONDARY industry ?
 - (vi) Give TWO main occupations in this area in the type of industry you have named in part (v). (6)
- (c) (i) Which area is the most important for tourism ? Name ONE important tourist resort in this area.
- (ii) Give TWO reasons why tourism is important in the area you have chosen.
 - (iii) Give TWO reasons why there has been high unemployment in the area of section 6/2. (5)
- (d) Section 6/1 shows Hydro-Electricity and Nuclear power stations.
- (i) Give TWO reasons why hydro-electricity can be generated in this area.
 - (ii) Give TWO reasons why this area has two nuclear power stations. (4)

 20

7 South-East England

Figure 7/1

SKETCH MAP OF SOUTH EAST ENGLAND



(a) Study Figure 7/1 above, a sketch map of South-East England, and with the help of your atlas, name the following features shown on the map.

- (i) Estuary R.
- (ii) Land area S.
- (iii) Sea area T.
- (iv) Packet port U.
- (v) Tourist resort V.
- (vi) Headland W.

(3)

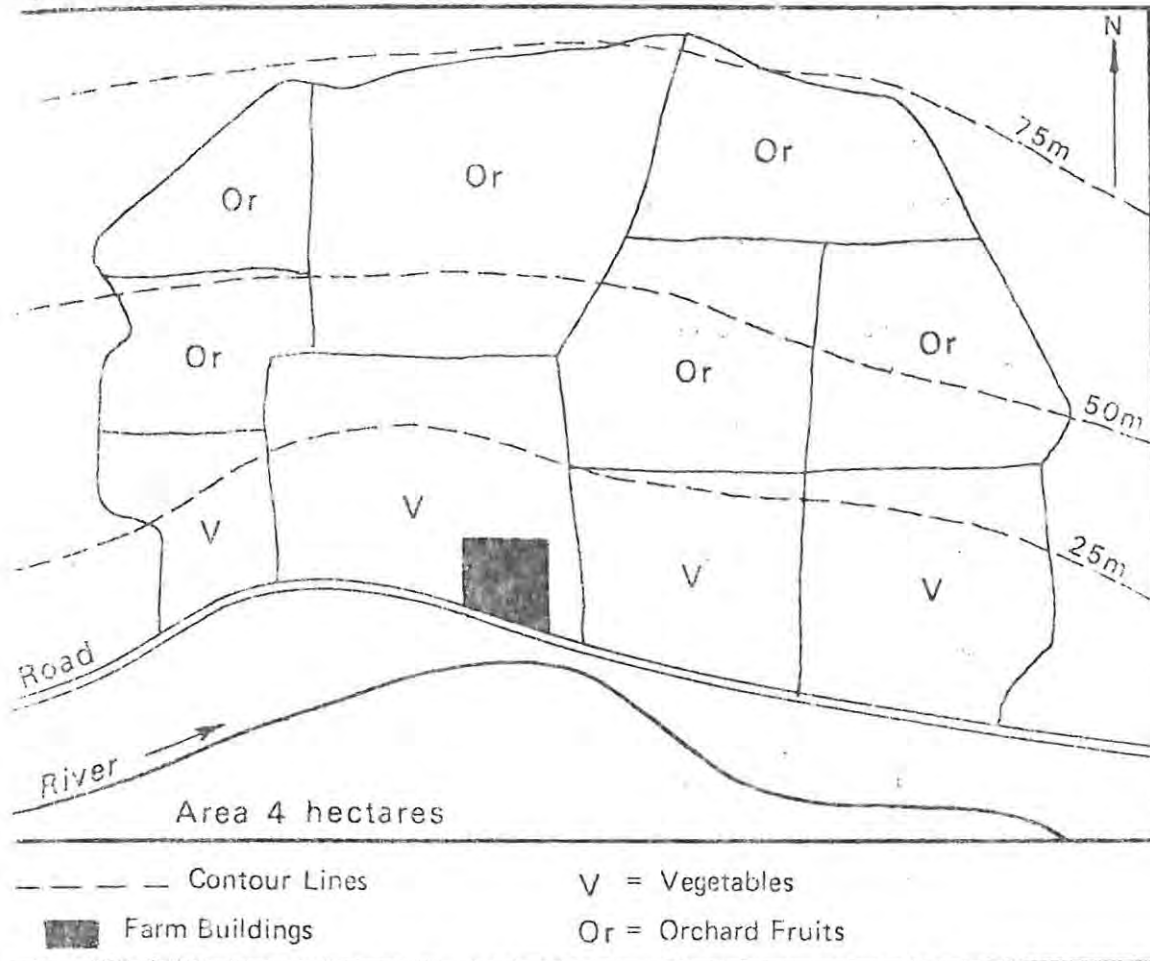
Question continued on the next page

- (b) On the "Isle of Grain" there is a large oil refinery, at Dungeness there is a nuclear power station, and between Margate and Dover there is a small coalfield.
- (i) Give TWO reasons why the Isle of Grain was chosen for the site of an oil refinery.
 - (ii) Give TWO reasons why Dungeness was chosen for the site of a nuclear power station.
 - (iii) What is the main use of the coal obtained from the coalfield marked on the sketch map? (5)
- (c) Dover is Britain's leading packet port. Brighton and Margate are two large resorts on this coast.
- (i) What is meant by the term 'packet port'?
 - (ii) To which country does most of the sea traffic from Dover go?
 - (iii) Give TWO reasons why the position of Dover has helped its growth as a packet port.
 - (iv) What TWO improvements in transport have increased Dover's port traffic in recent years?
 - (v) Give TWO reasons that have led to the growth of both Brighton and Margate as tourist resorts.
 - (vi) Which of these two resorts has a particularly high proportion of old people living there? (8½)
- (d) London has been the major influence on the development of South-East England.
- (i) Name ONE type of agriculture in this area which has been influenced by the proximity of London.
 - (ii) Give ONE reason why London has influenced this type of agriculture.
 - (iii) Describe TWO ways in which towns and villages in South-East England have been influenced by the closeness of London. (3½)

 20

WEST MIDLANDS – AGRICULTURE

Farm Plan 8/1



Livestock – None

Soils – Alluvial in valley,
Mixed boulder clay and sand on slopes.

You may use your atlas to help you to answer the questions. The three farm plans, Figures 8/1, 8/2, 8/3 are NOT drawn to the same scale.

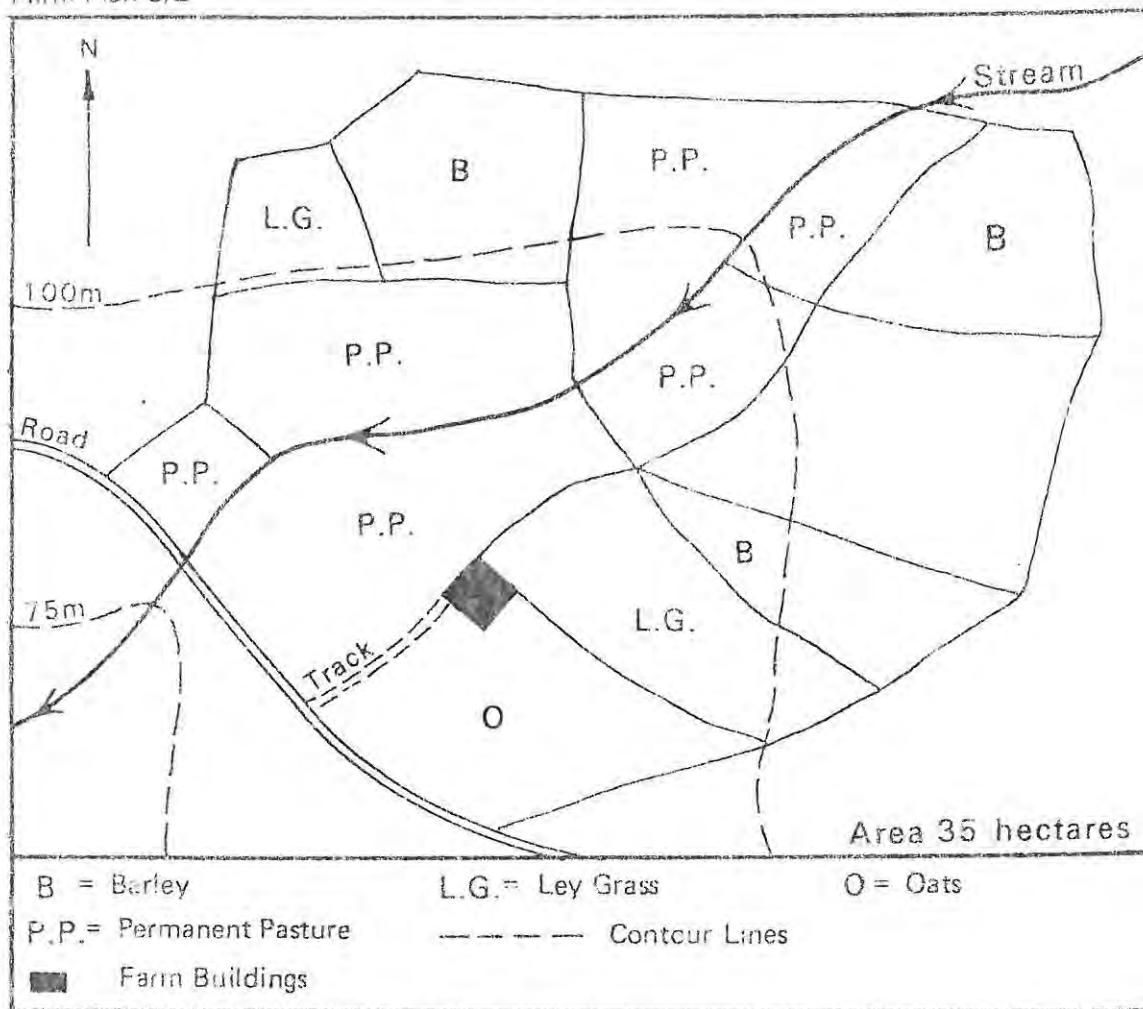
(a) Study farm plan 8/1 above and then answer the following questions.

- (i) Which ONE of the following types of farming is shown on this farm plan?
Dairying, or beef cattle rearing/fattening, or market gardening.
- (ii) Give ONE reason to support your choice.
- (iii) In which ONE of the following areas of the West Midlands is this type of farming most likely to be found?
Vale of Evesham or Plain of Hereford or Salop (Shropshire).
- (iv) Which large river flows across the area you have chosen?
- (v) Name ONE important market town in the area you have chosen.
- (vi) Give TWO reasons why vegetable crops are grown in the lower parts of the farm instead of fruit.

(5)

Question continued on the next page

Farm Plan 8/2



Livestock — 100 British Friesian Cattle

Soils — Heavy clays particularly in valleys.

(b) Study farm plan 8/2 above and then answer the following questions.

(i) Which of the following types of farming is shown on this farm plan?
 Arable or Dairying or Beef cattle rearing/fattening.

(ii) Give ONE reason to support the choice you have made.

(iii) In which ONE of the following areas of the West Midlands is this type of farming most likely to be found?

Vale of Evesham or Plain of Hereford or Salop (Shropshire).

(iv) Approximately what proportion of land is under grass?

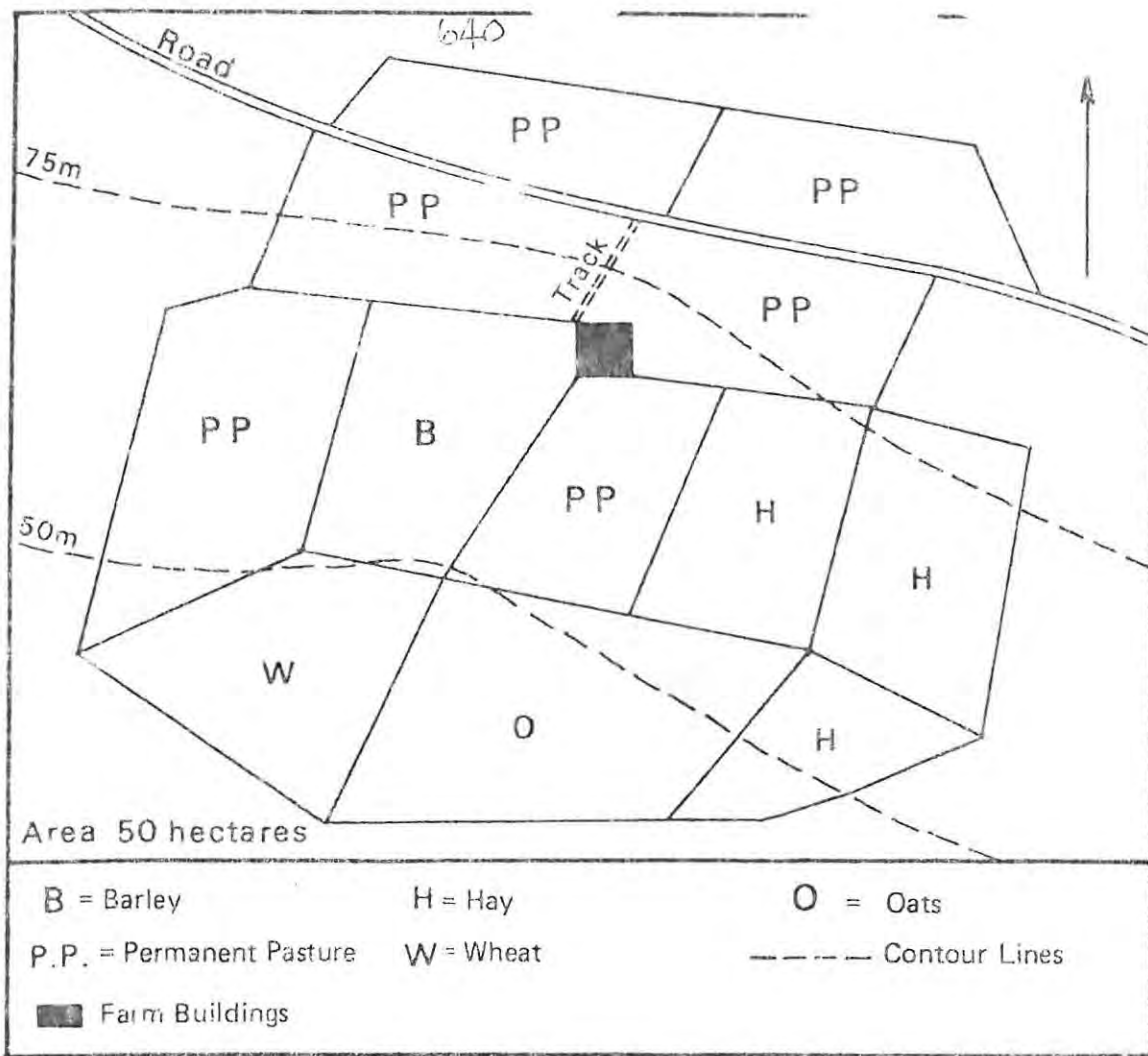
$\frac{1}{3}$, $\frac{1}{2}$, $\frac{2}{3}$, all.

(v) What is the main crop (other than grass) grown on this farm?

(vi) Give TWO reasons why the land near to the stream is used for permanent pasture.

(5)

Turn over for the rest of the question



Livestock – 110 Hereford cross-bred cattle

Soils – Sandy Loams

Question continued on the next page

(c) Study farm plan 8/3 opposite and then answer the following questions

(i) Which ONE of the following types of farming is shown on the farm plan ?

Dairying, or Beef cattle rearing/fattening, or Market gardening.

(ii) Give ONE reason to support your choice.

(iii) In which ONE of the following areas of the West Midlands is this type of farming most likely to be found ?

Vale of Evesham or Plain of Hereford or Salop (Shropshire).

(iv) What is meant by the term 'cash crops' ?

(v) Name TWO cash crops grown on this farm.

(vi) What is meant by the term 'fodder crops' ?

(vii) Name TWO fodder crops grown on this farm. (6)

(d) (i) Which TWO of the three types of farming shown on the plans are MOST dependent on rapid transport ?

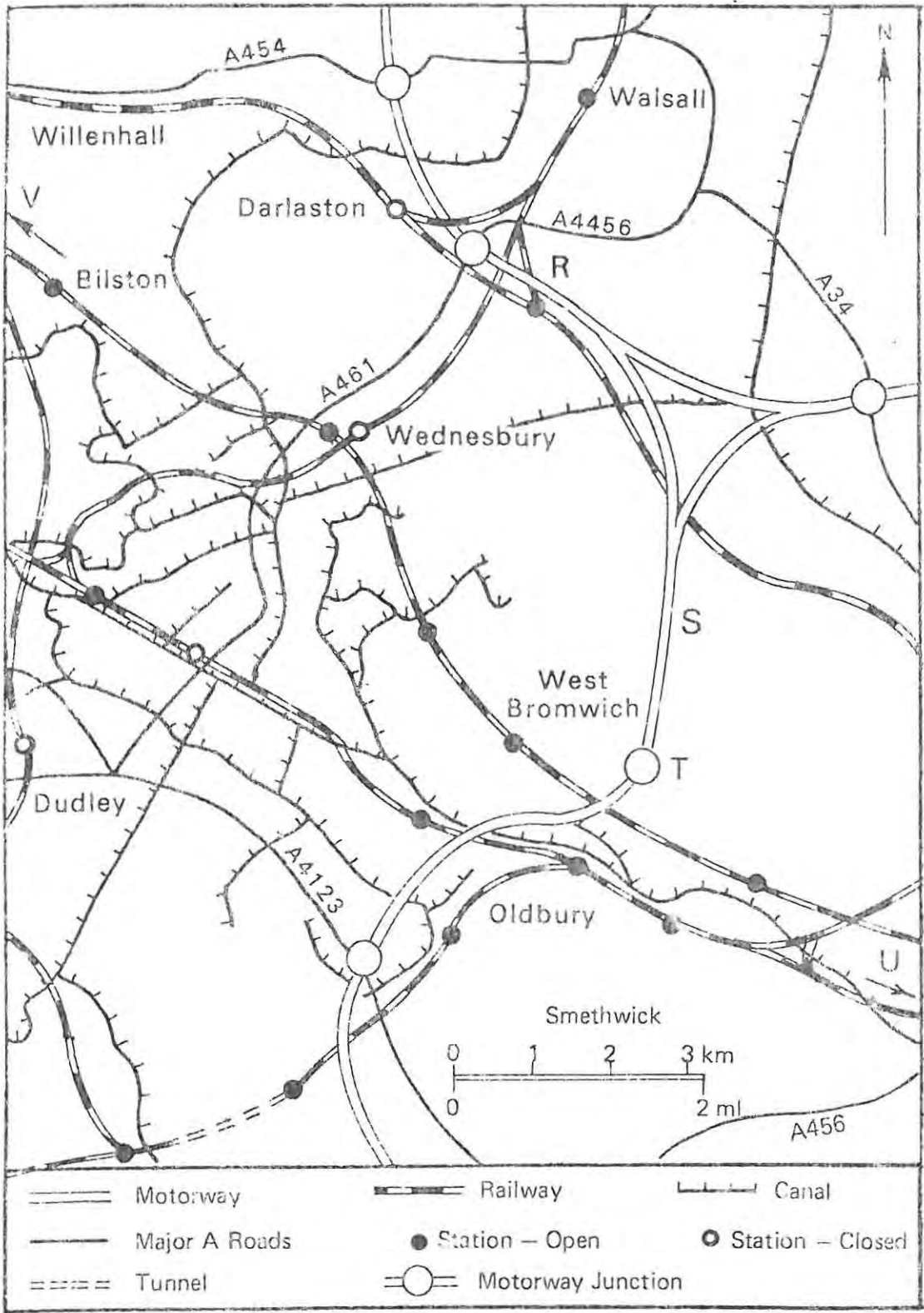
(ii) Give ONE reason for the importance of rapid transport to these types of farming.

(iii) Where is the MAIN market area in the West Midlands for the produce of these farms ?

(iv) What type of transport is most commonly used to move farm produce to this market area ? (4)

20

Figure 9/1 COMMUNICATIONS IN THE BLACK COUNTRY

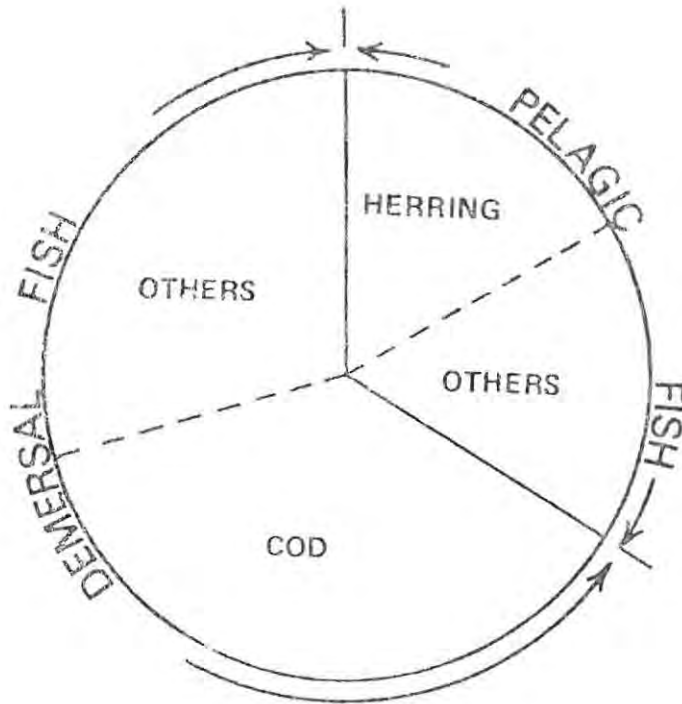


Question continued on the next page

- (a) Study Figure 9/1 opposite, a map of communications in the Black Country. Note that only a few 'A' class roads have been shown. You may use your atlas to help you answer the questions.
- (i) Name motorways R and S.
 - (ii) How many motorway access points, including T, are shown on the map?
 - (iii) Name the other two major roads shown on the map in addition to A454, A34, A4120 and A461.
 - (iv) How many railway tunnels are shown on the map?
 - (v) According to the map, how many of the eighteen railway stations shown are closed to passenger traffic?
 - (vi) Name the city situated to the east of the area shown on the map, in the direction of arrow U.
 - (vii) Name the large town to the north-west of the area shown on the map, in the direction of arrow V. (6)
- (b) "In 1769 a branch of the Birmingham Canal was opened to the southern outskirts of Wednesbury. Many other canals were built until 1790 when Brindley's Grand Cross was completed linking the Black Country with four estuaries."
- (i) The map shows many of the canals of the Black Country. What sort of boats used these canals?
 - (ii) How were the boats originally moved along the canals?
 - (iii) Name ONE main cargo which the canals carried.
 - (iv) Where did the canals get most of their water from? (NOT RIVERS)
 - (v) Explain how the canal boats coped with slopes.
 - (vi) Give ONE reason why factories in the Black Country were built alongside the canals.
 - (vii) Explain why the canals began to lose trade after 1840. (5)
- (c)
- (i) By 1860 more than 400 coal mines were working in the Black Country producing over $7\frac{1}{2}$ million tons of coal a year. What means of transport was built to move all this coal and the workers involved in the industries?
 - (ii) Has coal production increased or decreased in this area in the last hundred years?
 - (iii) Give the main reason why this has happened.
 - (iv) How many railways shown on the map link city U with large town V?
 - (v) These railways carry large numbers of passengers each day. Some of these passengers travel every day and are called COMMUTERS. Explain what is meant by the term 'COMMUTER'. (4)
- (d)
- (i) Give TWO reasons why the motorway S follows a very winding course across the area shown on the map.
 - (ii) Motorway R is probably the busiest motorway in Britain, in the area shown on the map. Give TWO reasons why this motorway is so busy.
 - (iii) What time of the day is the peak traffic period for north bound traffic on motorway R? (5)

Figure 10/1

MAIN TYPES OF FISH CAUGHT BY UNITED KINGDOM FISHING BOATS



(a) Study Figure 10/1 above, a pie graph showing the main types of fish caught by United Kingdom fishing boats, then answer the following questions.

- (i) Which of the two main groups of fish, pelagic or demersal, forms the larger part of the total catch?
- (ii) What are pelagic fish?
- (iii) Give ONE example not shown on the graph.
- (iv) What are demersal fish?
- (v) Give ONE example not shown on the graph.
- (vi) Approximately what proportion of the fish caught are cod and herring?
- (vii) Which fish is used to produce kippers?

(5)

Question continued on the next page

Figure 10/2

TYPES AND NUMBERS OF VESSELS

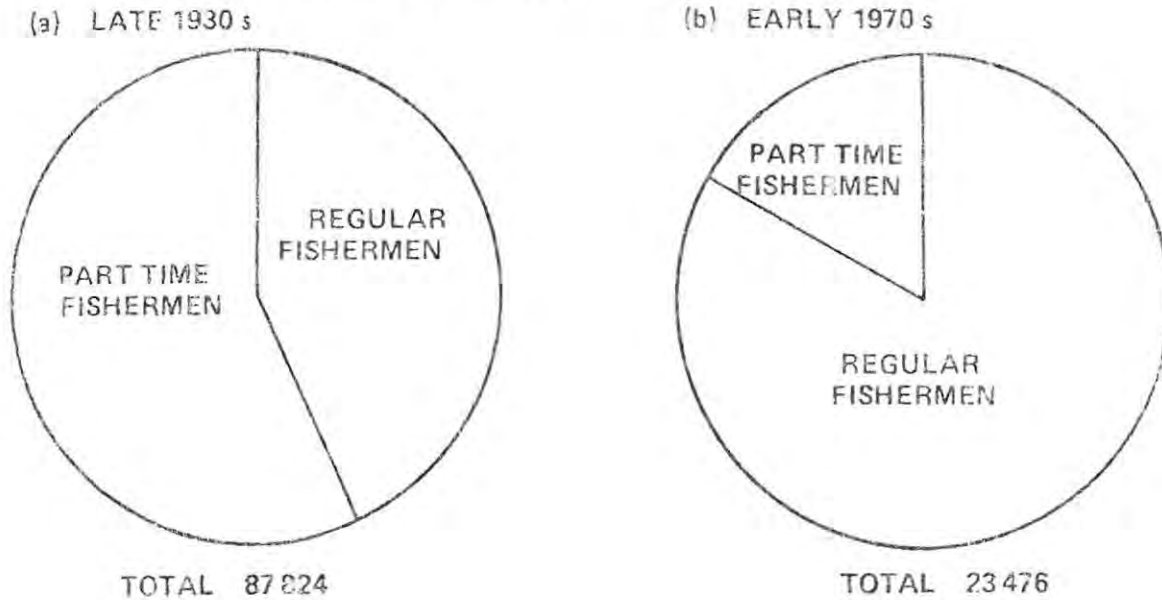
MAIN BRITISH FISHING PORTS	NUMBERS OF TRAWLERS	NUMBERS OF DRIFTERS
ABERDEEN	129	—
BUCKIE	80	—
FLEETWOOD	107	—
GRIMSBY	158	—
HULL	100	—
LOWESTOFT	107	6

- (b) Study Figure 10/2 above, the table showing the numbers of boats registered at the six main fishing ports in the United Kingdom (in terms of numbers of registered boats).
- (i) Which of the ports has the largest fishing fleet ?
 - (ii) Which of the ports listed has drifters and trawlers ?
 - (iii) Which of the ports is NOT on the east coast of the United Kingdom ?
 - (iv) Give ONE reason why there are only a few drifters in use.
 - (v) In which sea would the drifters shown in Figure 10/2 fish ? (4)

Turn over for the rest of the question

Figure 10/3

FISHERMEN WORKING IN THE UNITED KINGDOM



(c) Study Figure 10/3 above and use the information on the pie graphs to answer the following questions.

(i) (i) What are the TWO main changes in the fishing industry work force which have taken place between the late 1930s and the early 1970s?

(ii) Give TWO reasons to explain these changes. (4)

(d) Modern trawlers are very specialised ships able to endure long journeys, and the distant water trawlers land 40% of the United Kingdom catch.

(i) Give TWO severe weather conditions that trawlers and their crews have to endure.

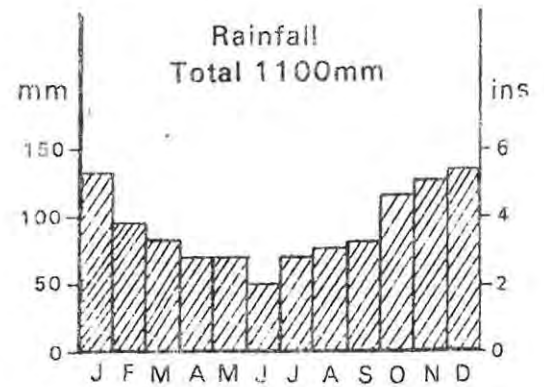
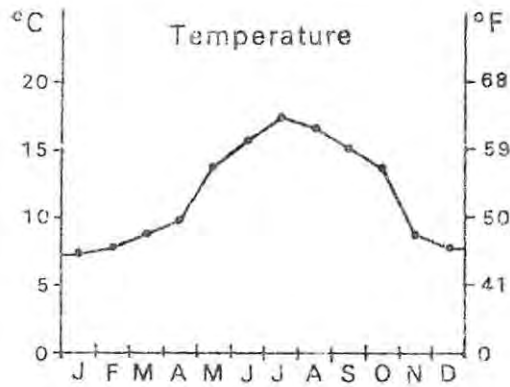
(ii) Give ONE reason why many modern trawlers have to be floating factories.

(iii) Describe THREE functions of a modern factory trawler.

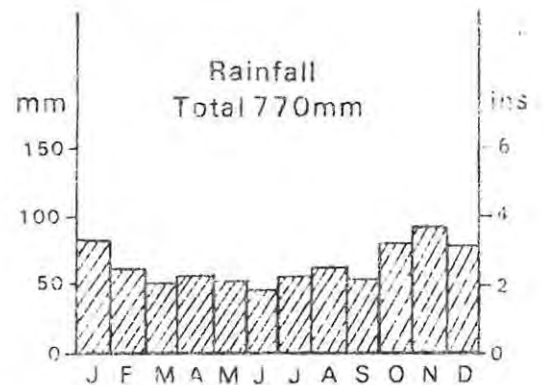
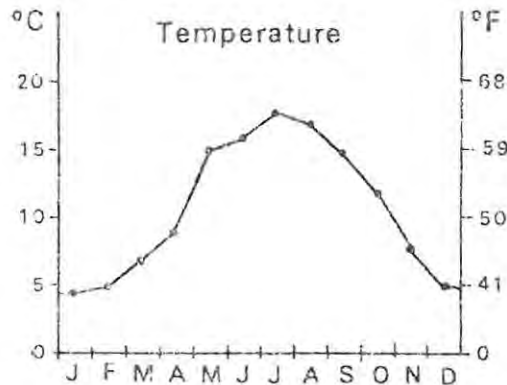
(iv) Describe TWO modern techniques that have helped to improve the fishing industry on factory trawlers. (7)

20

11 Climate

Figure 11/1
TOWN A

TOWN B



Study Figure 11/1 above, temperature and rainfall graphs for Towns A and B. Then answer the following questions, using your atlas to help you where possible.

- (a) Town A is on the west side of the British Isles, Town B is on the east side. The usual range of temperature for town A is 10° centigrade.
- Is town A in the North-West or the South-West of the British Isles?
 - Give ONE reason from the temperature graph to support your answer.
 - Is town B in the North-East or the South-East of the British Isles?
 - Give ONE reason from the temperature graph to support your answer.
 - What is meant by the expression "annual range of temperature"?
 - What is the annual range of temperature of town B?
 - Give ONE reason why the west side of the British Isles has milder winter temperatures than the east side. (6)
- (b) Town A has a higher annual rainfall than town B.
- Describe ONE other difference between these two rainfall graphs.
 - Give TWO reasons why the town on the west has a higher rainfall than the town on the east side of Britain.
 - Name ONE mountain area in Britain with a high annual rainfall.
 - Name ONE lowland area in Britain with a low annual rainfall. (5)

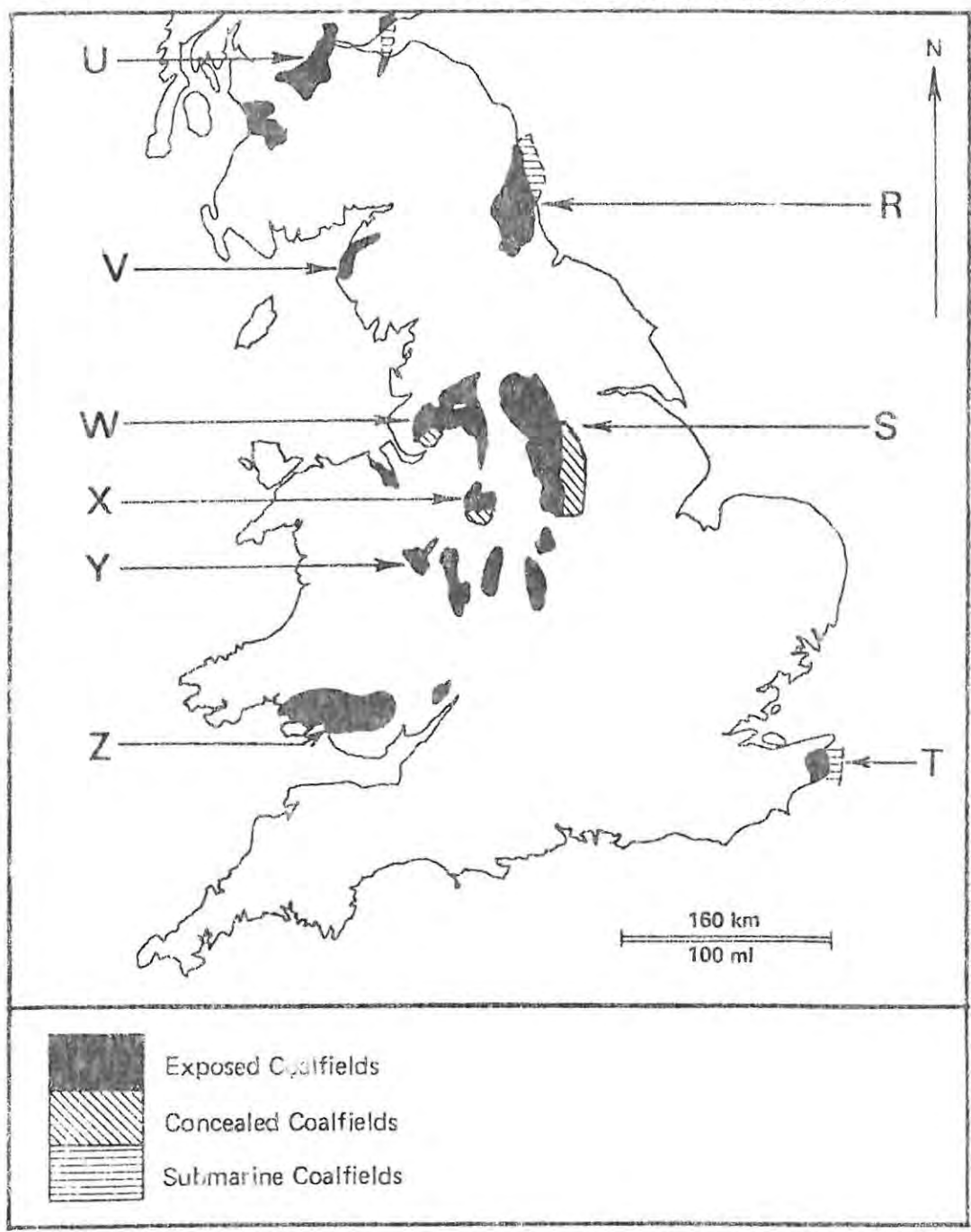
Turn over for the rest of the question

- (c) (i) What is meant by the term 'prevailing wind' ?
 - (ii) From what direction do Britain's prevailing winds blow ?
 - (iii) What is an off-shore wind (breeze)?
 - (iv) What is an on-shore wind (breeze)?
 - (v) What is the main cause of OFF and ON-shore winds (breezes)? (5)
- (d) In winter the seas around the British Isles are warmer than the adjacent land masses, and in summer the sea areas around the British Isles are cooler than the adjacent land masses.
- (i) How is this information shown by the isotherms on climate maps in BOTH winter AND summer ?
 - (ii) Explain **very briefly** why the sea is warmer than the land in winter, and cooler than the land in summer. (4)

20

12 Fuel and Power

Figure 12/1 COALFIELDS CURRENTLY WORKED IN BRITAIN



- 12 (a) Study Figure 12/1 opposite, a sketch map of coalfields currently worked in Britain, and with the help of your atlas answer the following questions.
- (i) Name coalfields R and S.
 - (ii) Which city does coalfield T provide with coal? Name coalfield T.
 - (iii) Name coalfield U and the coalfield to the east of U on both sides of and beneath the Firth of Forth.
 - (iv) Name coalfield V and the adjacent upland region.
 - (v) Name coalfields W and X.
 - (vi) Name coalfields Y and Z. (6)
- (b) (i) Which TWO coalfields other than T on the map have submarine workings?
- (ii) Explain what submarine mining means.
 - (iii) Which TWO coalfields, in addition to coalfield W, have concealed coalfield workings shown on the map?
 - (iv) Draw a **fully labelled** section to show the difference between EXPOSED and CONCEALED coalfields. (6)
- (c) Figure 12/2

Figure 12/2

Year	Collieries	Output per man shift	Manpower	Mechanised Output
1947	958	1.1	704 000	2.4%
1973	268	2.5	268 000	93.0%

Study Figure 12/2 above. The changes shown have been achieved by closing down unproductive pits and by investing huge sums of money in new machinery, for cutting the coal, loading it and for roof supports.

- (i) What sort of colliery has the National Coal Board closed down since 1947?
- (ii) What has happened to the size of the work force since 1947?
- (iii) What has happened to productivity since 1947? Give TWO reasons for this. (4)

Turn over for the rest of the question

6.50

Figure 12/3

Customers	1955	1973
Power Stations	43	69
Gas Works and Coke Ovens	55	23
Domestic	37	15
Industrial and other uses	81	21

(d) Study Figure 12/3 above.

(i) Which user of coal has increased in the period from 1955 to 1973 ?

(ii) Give ONE reason for this increase.

(iii) Which user of coal has decreased most in the period shown ?

(iv) Give TWO reasons for this enormous decrease.

(4)

20

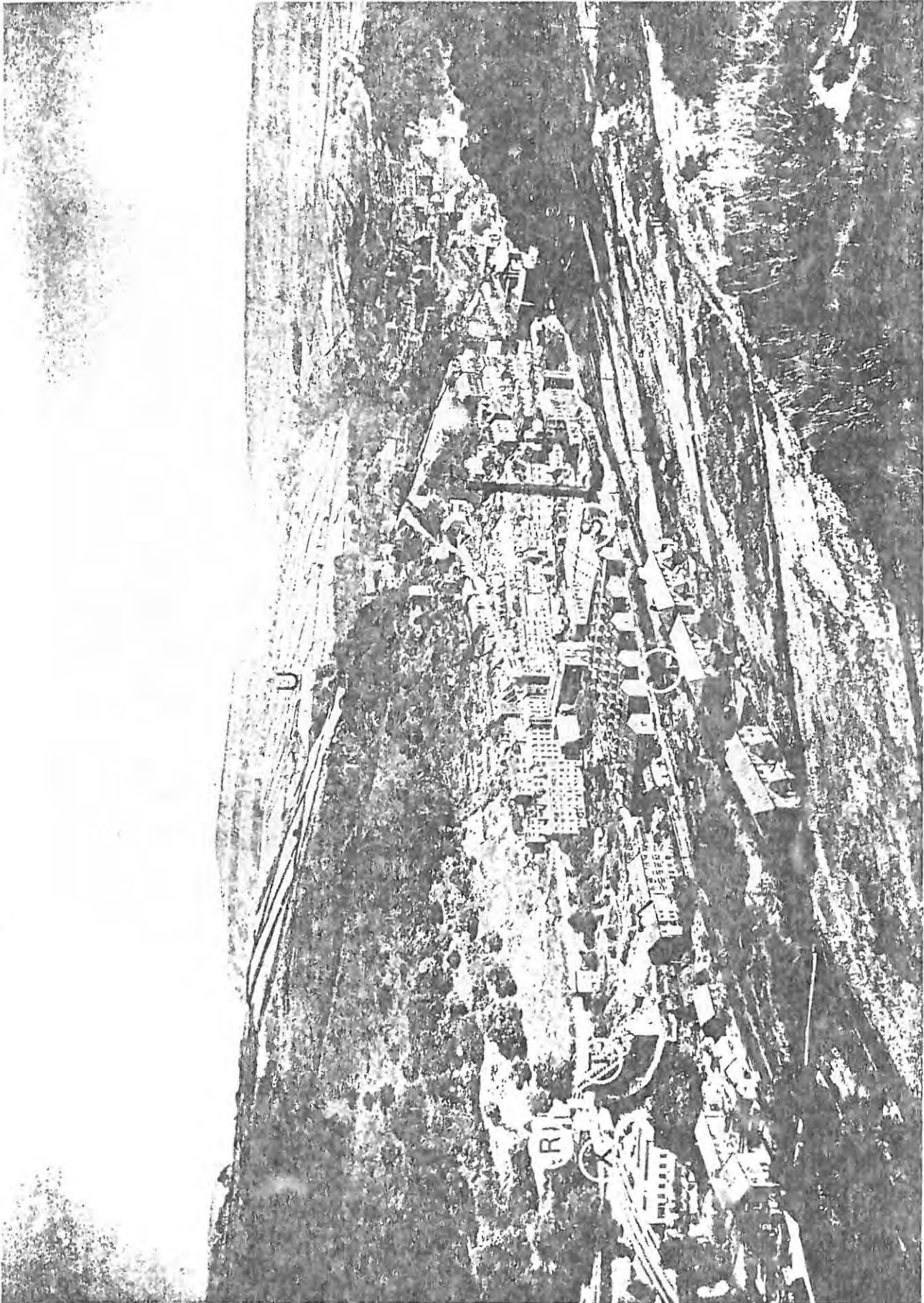
Photograph 4/2



Reproduced by courtesy of C. H. Wood (Bradford) Limited

652

Photograph 4/1



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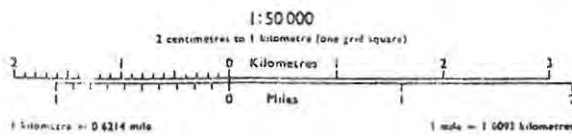
[Turn over for Photograph 4/2]



Each box should contain a colour, if any are white the map is incomplete and should be returned to the invigilator

Extract No 346/173

1:50 000 First Series



High contours are to the nearest metre above mean sea level. Contour values are given to the nearest metre. The vertical interval is 50 feet equivalent to 15.2m.

654

Before you begin work, write here, in ink, your
EXAMINATION NUMBER

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and the name of the atlas you are using

.....

West Midlands Examinations Board

Certificate of Secondary Education

GEOGRAPHY SYLLABUS 2

Monday, 11th June, 1979

9.30 — 11.45 am

Answer ALL questions in Section A and THREE other questions from Section B.

Section A carries a total of 10 marks. All questions in Section B carry 20 marks each.

For those questions sub-divided into sections the number of marks carried by each section is indicated in brackets at the end of that section.

Credit will be given for relevant sketch maps and diagrams.

You may use an atlas to answer the questions in this paper.

Do not answer more than the required number of questions. Additional answers will not be marked. All answers which are not to be marked must be clearly crossed through.

In this column insert the numbers of the questions you have answered in Section B		FOR EXAMINER'S USE ONLY
Section A (answer all questions)		
Section B (answer three questions)		

[Turn over

655
SECTION A

Answer ALL questions in this section.

Each of the Questions 1 to 12 is followed by four suggested answers (labelled A, B, C and D).

Write in the box the letter of the answer you think is correct.

A1 Which of the following is the best way to prevent soil erosion on a gentle hill slope used for arable farming ?

- A Leaving the fields fallow.
- B Planting trees round the fields.
- C Contour ploughing.
- D Planting root crops.

A2 Which of the following is NOT likely to be a trend in modern arable farming ?

- A The removal of field boundaries and trees.
- B The increased use of large machinery.
- C The use of more fertilizers.
- D The employment of more labourers.

A3 Horses and Tractors (thousands) on farms in Britain.

Years	1939	1965	1970
Horses	649	21	Not Recorded
Tractors	117	480	500

The figures above indicate

- A the number of horses declined because they were too expensive to keep.
- B more tractors were made than horses were bred.
- C mechanisation helped the farms to produce more food more cheaply.
- D tractors had a longer life than horses.

A4 Which of the following has been the main cause of rural depopulation in highland areas ?

- A Nationalisation of the farms.
- B Isolation and poor climatic conditions.
- C Farmland being used for tourism (e.g. caravan sites).
- D Land being lost by soil erosion.

A5 'Geographical' or 'industrial inertia' is the term used to describe an industry which

- A has expanded to new sites.
- B has remained in its original location.
- C has moved to a port site.
- D has been closed down.

A6 Industrial estates have been set up in many towns. Which location factor does NOT apply to such an estate?

- A Proximity to coalfields for fuel.
- B Availability of labour locally.
- C Proximity to major transport routes.
- D Space for modern factory development.

A7 Which one of the following situations does NOT produce a conurbation?

- A A large city such as London spreading outwards and engulfing nearby towns.
- B A number of industrial towns near to each other, e.g. on a coalfield spreading to join up with each other, e.g. the Black Country towns.
- C A large city with a variety of industries.
- D A line or ring of industrial towns which have joined together, e.g. the Randstadt towns of South Holland in the Netherlands.

A8 New Towns have been built to

- A bring new life into rural areas.
- B provide housing and employment in overcrowded village areas.
- C rehouse the overspill population from large cities.
- D use up poor land which was of little value for agriculture.

A9 There has been a migration of people from rural areas to urban areas during the past hundred years because

- A urban areas offer more high paid jobs to people.
- B people are afraid of the pollution in rural areas caused by farms using chemical fertilizers and insecticides.
- C the cost of living is higher in rural areas.
- D urban areas have better educational facilities.

A10 The main advantage of using pipelines to carry liquids and gases is

- A they are often underground so require no looking after once they have been laid.
- B they do not spoil the countryside as you cannot see them.
- C they can carry a variety of liquids and gases from one place to another.
- D they reduce the number of lorries and railway wagons that would otherwise be needed to carry these liquids and gases.

A11 Ro-ro ferry services (roll on, roll off) have changed the tourist industry; many people are now taking their cars abroad with them instead of taking package tours by coach/air. Ro-ro ferry ports have had to install special terminal facilities so that the ships can dock at any state of the tide. Which of the following statements about ferries is unlikely to be true?

- A Ordinary ferry ports have had fewer passengers in the last five years.
- B Cross-channel ro-ro ferry services have decreased in the last five years.
- C Ro-ro ferry ports have had more passengers in the last five years.
- D New ro-ro ferry services are being built at the present time.

A12 Many large urban areas have tried to encourage people to use public transport. Which of the following is least true of transport in urban areas today?

- A Cars face traffic jams during 'rush hours'.
- B Car parking places in town centres are scarce and parking charges on street parking meters or in off street car parks are expensive.
- C 'Buses are faster and more flexible than private cars.
- D Town centre roads have special traffic segregation lanes on main roads for 'buses only'.

For Questions 13 and 14 indicate which ONE of the following statements is FALSE.

A13 Features of light industry include

- A the use of small quantities of raw materials.
- B the high labour input to produce the goods.
- C closeness to a coalfield.
- D road transport being used more than rail transport.

A14 Consider the following figures which refer to the population distribution in the British Isles from 1770 to 1971.

- In 1770 80% of the population lived in rural areas.
- In 1850 50% of the population lived in rural areas.
- In 1931 20% of the population lived in rural areas.
- In 1971 80% of the population lived in urban areas.

Which of the following statements is FALSE ?

- A In 1770 20% of the population lived in urban areas.
- B In 1971 20% of the population lived in rural areas.
- C The percentage of population in urban areas did not change between 1931 and 1971.
- D In 1931 20% of the population worked in farming.



For each of Questions 15 to 18 write in the box the letter of the answer you think is correct.

A15 A large airport, such as Heathrow, which normally handles thousands of passengers every day has a number of ground transport problems to solve.

- 1 Provision of short term and long term safe car parking facilities for passengers and staff.
- 2 Provision of fast access roads to main routes to the city centre.
- 3 Provision of special coach/train/bus services for passengers and staff.

- A 1 only
- B 1 and 2 only
- C 1 and 3 only
- D 1, 2 and 3



A16 True statements about the motor vehicle industry include

- 1 it has expanded rapidly since 1945.
- 2 in recent years mergers and bankruptcies have reduced the number of firms involved and have created a few 'giant' producers.
- 3 smaller cars have been increasing in popularity because of increasing costs of motoring.

- A 1 only
- B 1 and 2 only
- C 2 and 3 only
- D 1, 2 and 3



A17 Consumer goods are industrial products which are

- 1 used by the general public and need frequent replacement.
- 2 not made for the export market.
- 3 require highly skilled labour in their manufacture.

- A 1 only
- B 1 and 2 only
- C 1 and 3 only
- D 1, 2 and 3



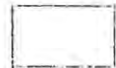
A18 The following figures show part of a traffic census taken on a main road in a town.

<i>Time (hour ending)</i>	<i>Number of Vehicles</i>
9.00 hours (9 a.m.)	3 000
11.00 hours (11 a.m.)	1 800
13.00 hours (1 p.m.)	2 200
15.00 hours (3 p.m.)	1 900
17.00 hours (5 p.m.)	3 500
19.00 hours (7 p.m.)	2 000

Which of the following statements are correct ?

- 1 The maximum traffic flow occurs during the evening rush hour.
- 2 The minimum traffic flow occurs during mid-afternoon.
- 3 The minimum traffic flow occurs during the middle of the morning.

- A 1 only
- B 2 only
- C 1 and 2 only
- D 1 and 3 only



In each of the Questions 19 and 20 you are given an **ASSERTION** followed by a **REASON**. Consider the assertion and decide whether, on its own, it is a true statement. Consider the reason and decide if that is a true statement. If, and only if, you decide that both the assertion and the reason are true, consider whether the reason is a valid or true explanation of the assertion. Choose your answer as follows and write in the box the letter of the answer you choose.

- A If both the assertion and the reason are true statements and the reason is a correct explanation of the assertion.
- B If both assertion and reason are true statements and the reason is NOT a correct explanation of the assertion.
- C If the assertion is true but the reason is a false statement.
- D If the assertion is false but the reason is a true statement.
- E If both assertion and reason are false statements.

Directions Summarised		
Assertion	Reason	Argument
A True	True	Reason is a correct explanation of assertion
B True	True	Reason is not a correct explanation of assertion
C True	False	Not applicable
D False	True	Not applicable
E False	False	Not applicable

A19 Root crops are an important part of most arable crop rotation systems

because

root crops are valuable fodder crops.

A20 Public parks are often found near to town centres

because

the land they occupy was not fit to build anything on.

B2 Urban Land Use and Transport

Figure 2/1 LAND USE AND TRAFFIC FLOW MAP OF CENTRAL URBAN AREA

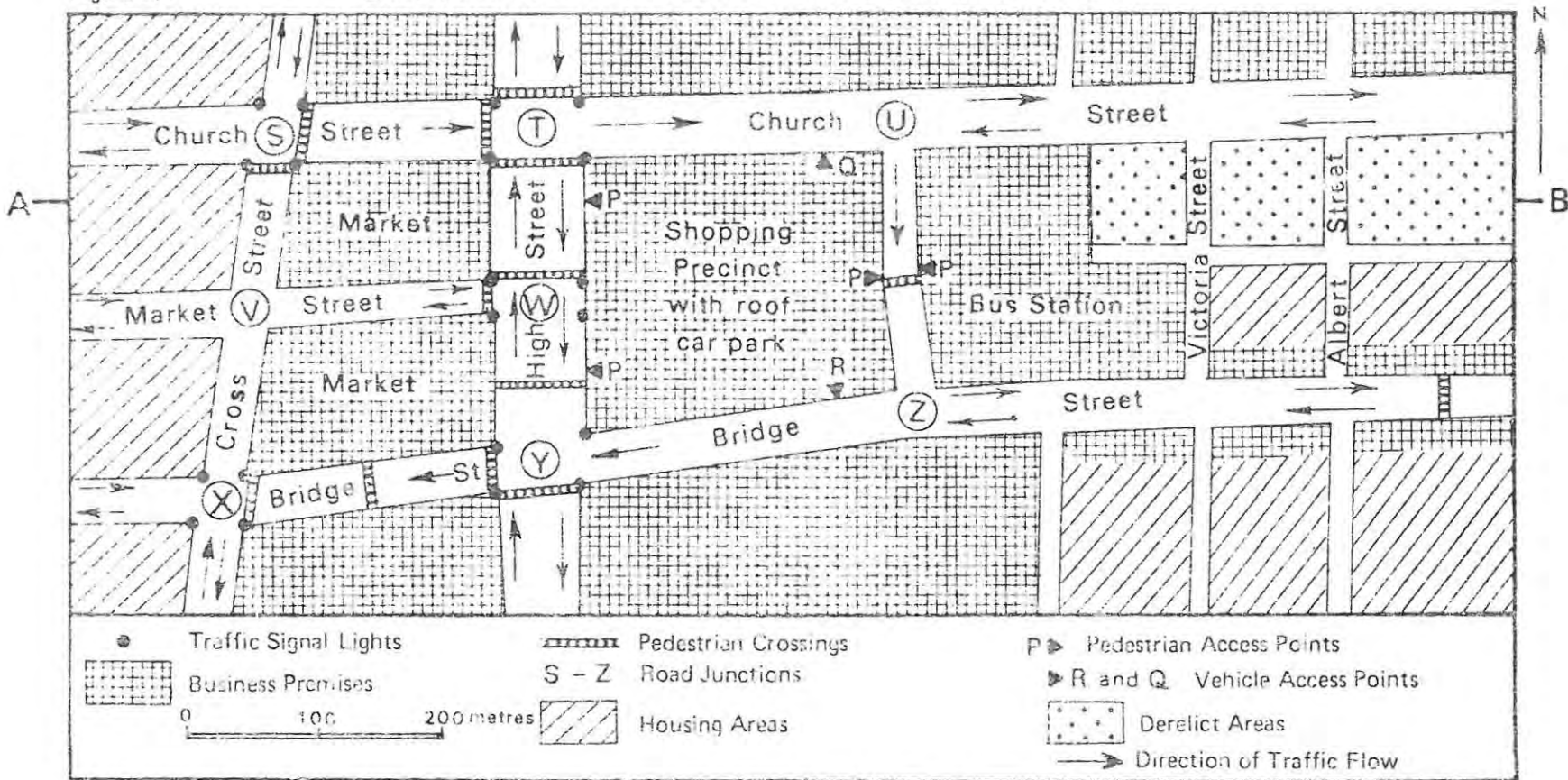
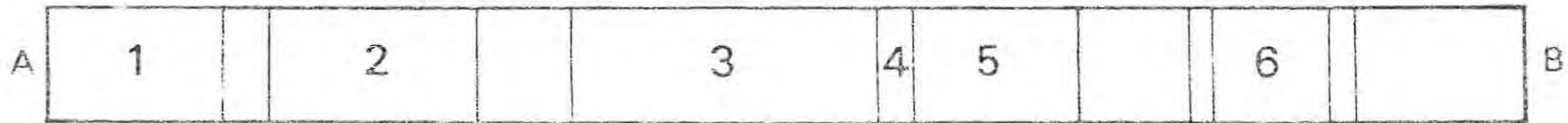


Figure 2/2



LAND USE TRANSECT FROM A TO B

Study the land use plan, figure 2/1, opposite.

- (a) (i) Study figure 2/1 and the transect figure 2/2 opposite. Complete the six land uses marked 1—6 on the transect.

No.	Land Uses	No.	Land Uses
1		4	
2		5	
3		6	

- (ii) Name a main road junction which has two-way traffic moving in THREE directions.

.....

- (iii) Which main road junction has two-way traffic in FOUR directions?

.....

- (iv) Which road marks the western boundary of the Central Business District?

.....

- (v) How many of the pedestrian crossings on the plan, figure 2/1, are within the Central Business District?

.....

- (vi) Can west bound traffic using Bridge Street turn right at junction Z?

.....

- (vii) Can north bound traffic using Cross Street turn right at junction S?

.....

(6)

Turn over for the rest of the question

603

(b) High Street is a main dual carriageway road carrying heavy traffic through the town centre. The plan to turn the section between junctions T, W and Y into a pedestrians only area has met with strong opposition from market traders and from shopkeepers in the area to the west of the High Street.

If the plan goes ahead it will complete the one-way traffic flow system in the town centre between junctions S, U, Z and X.

(i) Which other street will become a one-way street ?

.....

(ii) Which way will traffic flow along this street ?

.....

(iii) Market Street is a busy unloading street for delivery vans. Why are market traders concerned about the closure of part of High Street ?

.....

.....

(iv) Why are the Church Street and Bridge Street shopkeepers concerned about the plan ?

.....

.....

(v) The opponents of the scheme claim the traffic will move more slowly through the town centre if the scheme is adopted. Do you think the traffic will move faster or slower ? Give TWO reasons to support your view.

I think that traffic will move

First reason

.....

Second reason

.....

(5)

(c) The vehicle access points to the precinct roof car park are shown on the plan, figure 2/1, by the letters Q and R.

(i) Which letter marks the ENTRANCE to the car park ?

.....

(ii) Give ONE reason for your answer.

.....

.....

Question continued on the next page

(iii) If the new traffic plan is completed the pedestrian crossing in the street between junctions U and Z will be replaced by a subway. Give ONE reason why this will be necessary.

.....

(iv) Give ONE way in which the Council could encourage people to use the subway.

.....

.....

(3)

(d) The shopping precinct and the bus station are recent developments, typical of many town centres.

(i) What is the name for rebuilding of inner urban areas ?

.....

(ii) Which streets on the plan, figure 2/1, are likely to be rebuilt next ?

..... and

(iii) In what zone of an urban area (outside the Central Business District) does this rebuilding usually take place ?

.....

(iv) High rise flats have often been built in such areas. Give TWO reasons why people have grown to dislike living in high rise flats.

First reason

.....

Second reason

.....

(v) Give TWO reasons why pedestrian shopping precincts have been built to replace High Street shopping.

First reason

.....

Second reason

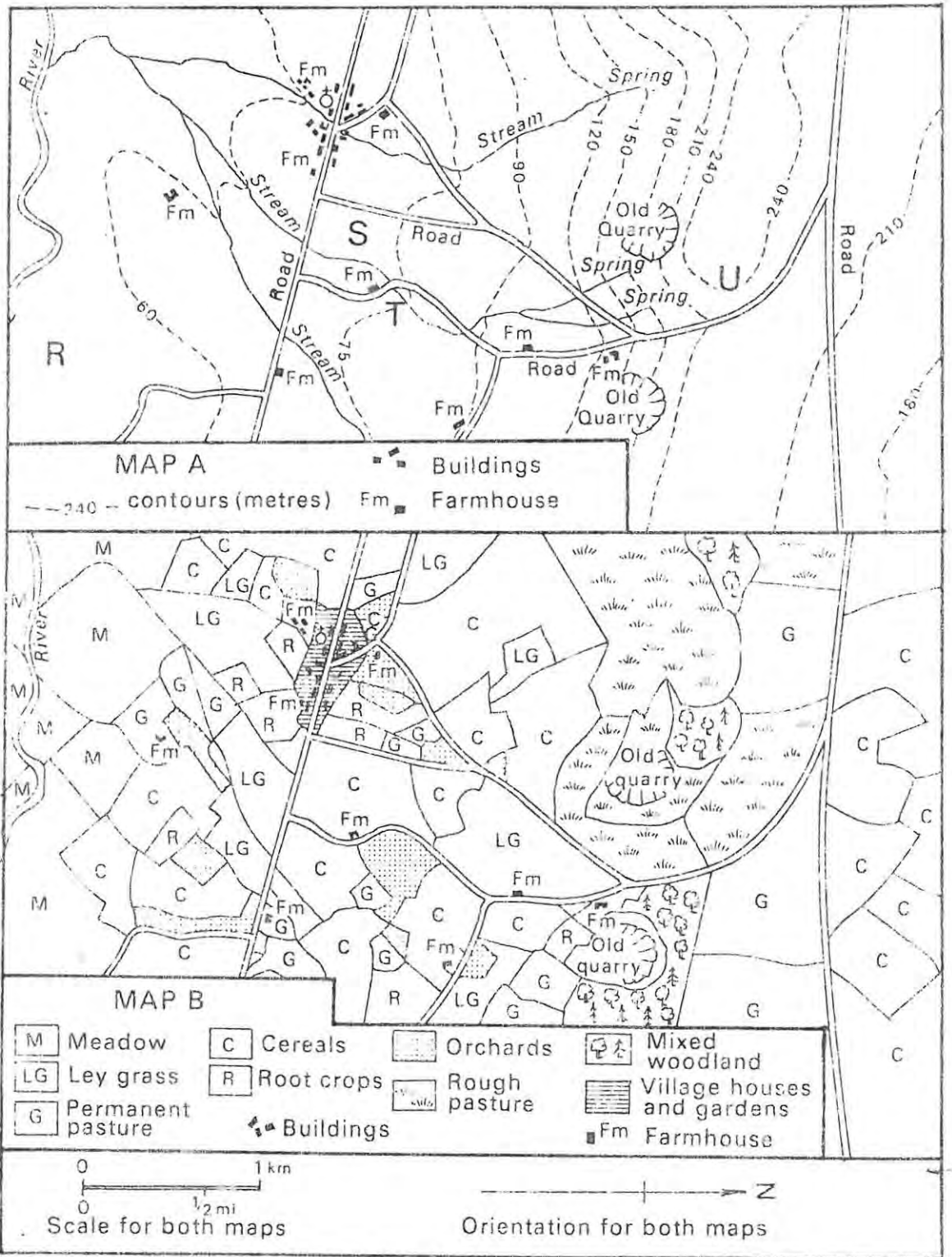
.....

(6)

20

(a)

Figures 3/1 (top) and 3/2 (below)



Question continued on the next page

Study the maps, figures 3/1 and 3/2, opposite and then answer the following questions.

(i) What type of land use is found at each of the following points ?

Point	Land Uses	Point	Land Uses
R		T	
S		U	

(ii) Give ONE reason for the land use found at R.

.....

.....

(iii) Give ONE reason for the land use found at U.

.....

.....

(iv) What is the approximate height of the lowest area of orchards shown on the map ?

.....

(v) What is the approximate height of the highest area of orchards shown on the map ?

.....

(vi) Give ONE climatic reason why orchards are not planted on the lowest land.

.....

.....

(vii) For EACH of the following land uses found on the map, figure 3/2, state, by writing YES or NO, whether they would be used in a system of crop rotation.

Land Uses	Yes/No	Land Uses	Yes/No
Meadow		Cereals	
Ley Grass		Root Crops	
Permanent Pasture		Rough Pasture	

Turn over for the rest of the question

(viii) Explain why farmers often use a system of crop rotation.

.....
.....
.....

(10)

(b) (i) Which TWO of the following factors have influenced the pattern of land use shown the most:

- Slope
- Transport facilities
- Distances from farmhouse
- Drainage ?

..... and

(ii) What TWO features of the fields used for cereals on figure 3/2 would limit the large scale use of machinery ?

First feature

Second feature

(iii) Give TWO other factors (NOT NECESSARILY SHOWN ON FIGURES 3/1 and 3/2) which assist the large scale mechanisation of cereal cultivation.

First factor

Second factor

(iv) What production cost is reduced by the use of mechanisation ?

.....
.....

Question continued on the next page

(v) The climatic boundaries of cereal cultivation are gradually being extended, mainly due to scientific development. Explain TWO ways in which a scientific development has increased the area in which cereals can be grown.

First way

.....

Second way

.....

(7)

(c) Two major world areas of cereal cultivation are the New World, for example Canada, and the Third World, for example India. The two most important cereals grown in the world are wheat and rice.

(i) Which of the two world areas named above produces most of the rice?

.....

(ii) Which area produces most of the wheat?

.....

(iii) Explain why not much wheat is produced in the rice growing areas and why not much rice is produced in the wheat producing areas.

.....

.....

.....

(iv) Give the main reason why more wheat than rice is sold in world markets (or enters into world trade).

.....

.....

(3)

20

(a)

Figure 4/1 RURAL SETTLEMENTS AND ROADS PATTERN

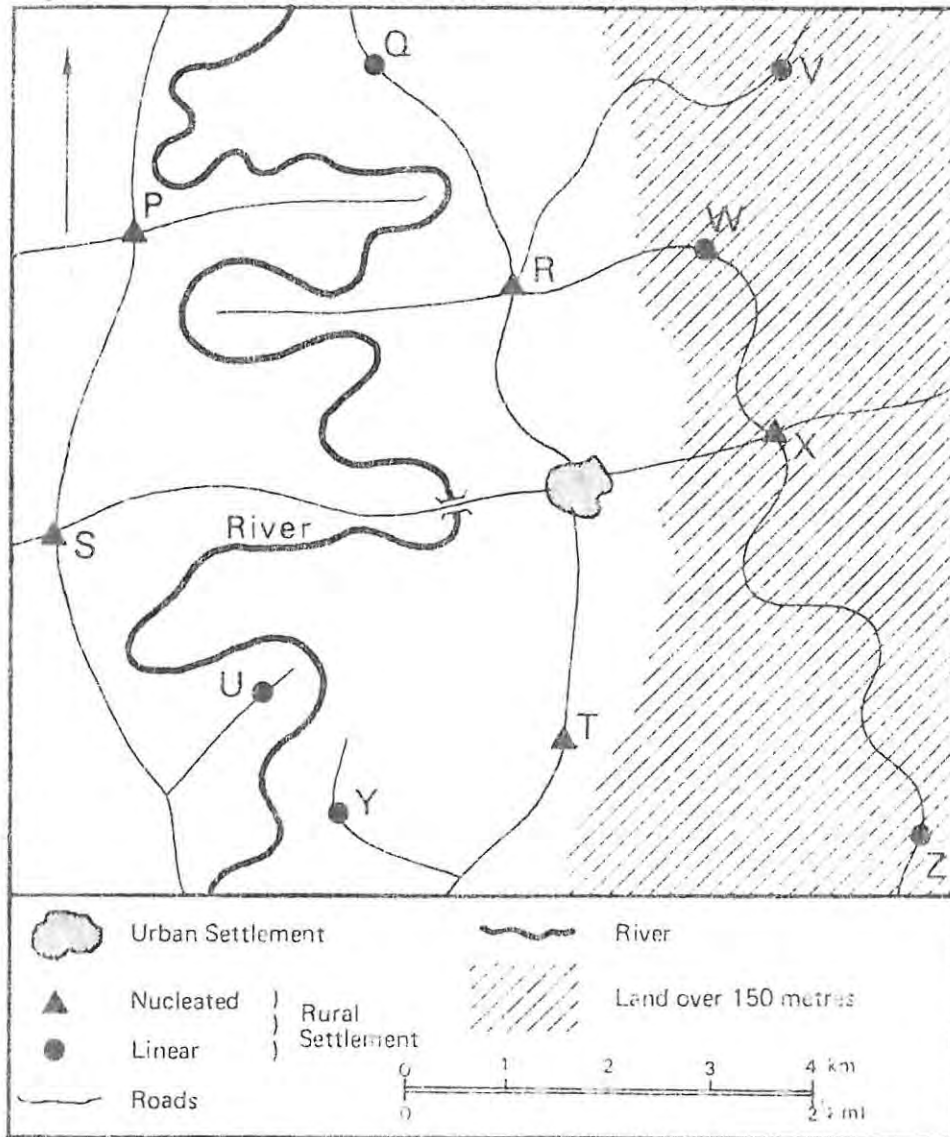


Figure 4/2

DETAILS OF THE RURAL SETTLEMENTS SHOWN ON FIGURE 4/1

Rural Settlement	Shortest Distance from the Town in km	Route Distance from the Town in km	Detour Index	Population	Services			
					Church	School	Post Office/Shop	Public House/Inn/Hotel
P	5	8.25	165	131	✓	✓	✓	✓
Q	4.5	5	111	518	✓	✓	✓	✓
R	2	2.25	113	691	✓	✓	✓	✓
S	5	5.25	105	456	✓	✓	✓	✓
T	2.5	2.5	100	52	✓	✓	✓	✓
U	3.75	10.25	273	175	✓	✓	✓	✓
V	4.5	6.5	145	216	✓	✓	✓	✓
W	3.75	5.5	147	276	✓	✓	✓	✓
X	2	2	100	183	✓	✓	✓	✓
Y	4	5.5	138	165	✓	✓	✓	✓
Z	4.75	7.5	158	15	✓	✓	✓	✓

Population of the Town = 6981

Question continued on the next page

Study figures 4/1 and 4/2 opposite and answer the following questions.

(i) How many bridges are there across the river?

.....

(ii) How many urban settlements are shown?

.....

(iii) What is the urban population of this area?

.....

(iv) How many of the rural settlements are nucleated?

.....

(v) Explain, with the aid of a sketch map, what is meant by a nucleated rural settlement.

Nucleated Rural Settlement



.....
.....
.....
.....

(vi) Explain, with the aid of a sketch map, what is meant by a linear rural settlement.

Linear Rural Settlement



.....
.....
.....
.....

(vii) Using map evidence, give ONE feature of the location of the nucleated rural settlements.

.....
.....
.....

(viii) Comment on the distribution of the linear rural settlements.

.....
.....
.....

(8)

Turn over for the rest of the question

- (b) Figure 4/2 shows the distances of the rural settlements from the town and their detour indices.

The detour index equals

$$\frac{\text{Actual distance between two settlements}}{\text{Shortest distance between two settlements}} \times 100$$

The detour index helps you to measure the efficiency of the routes between the rural settlements and the town.

- (i) Which TWO settlements are the worst served, i.e. have the highest detour indices?

..... and

- (ii) Give the reason for their high detour indices.

.....
.....

- (iii) Which rural settlement on the higher land has a low detour index?

.....

- (iv) Give the reason for this low detour index.

.....
.....

- (v) Which rural settlement on the west side of the river has a low detour index?

.....

- (vi) Give the reason for this low detour index.

.....
.....

- (c) (i) Which service is shared by all the rural settlements shown on figures 4/1 and 4/2?

.....

- (ii) Which rural settlement with less than two hundred inhabitants has a public house/inn/hotel?

.....

Question continued on the next page

(iii) Give ONE reason why despite its small size this rural settlement has a public house/inn/hotel.

.....
.....

(iv) Which rural settlement will most probably provide primary school education for the children from settlements P and U?

.....

(v) Which rural settlement with over two hundred inhabitants does not have a primary school?

.....

(vi) The children from this settlement go to a primary school within the area covered by the map. At which village is the school most likely to be situated?

.....

(vii) Give ONE reason why X has not got a school and Y has got one, even though X is a bigger settlement than Y and both settlements have children of primary school age.

.....
.....

(viii) Which seems to be the lowest population required in this area to support a Post Office and shop?

.....

(5)

d) (i) Suggest the main non-agricultural function shared by rural settlements Q and R. Do NOT give the services shown on the key.

.....
.....
.....

(ii) Rural settlement S has a creamery. Give ONE reason why this area could be important for dairy farming.

.....
.....

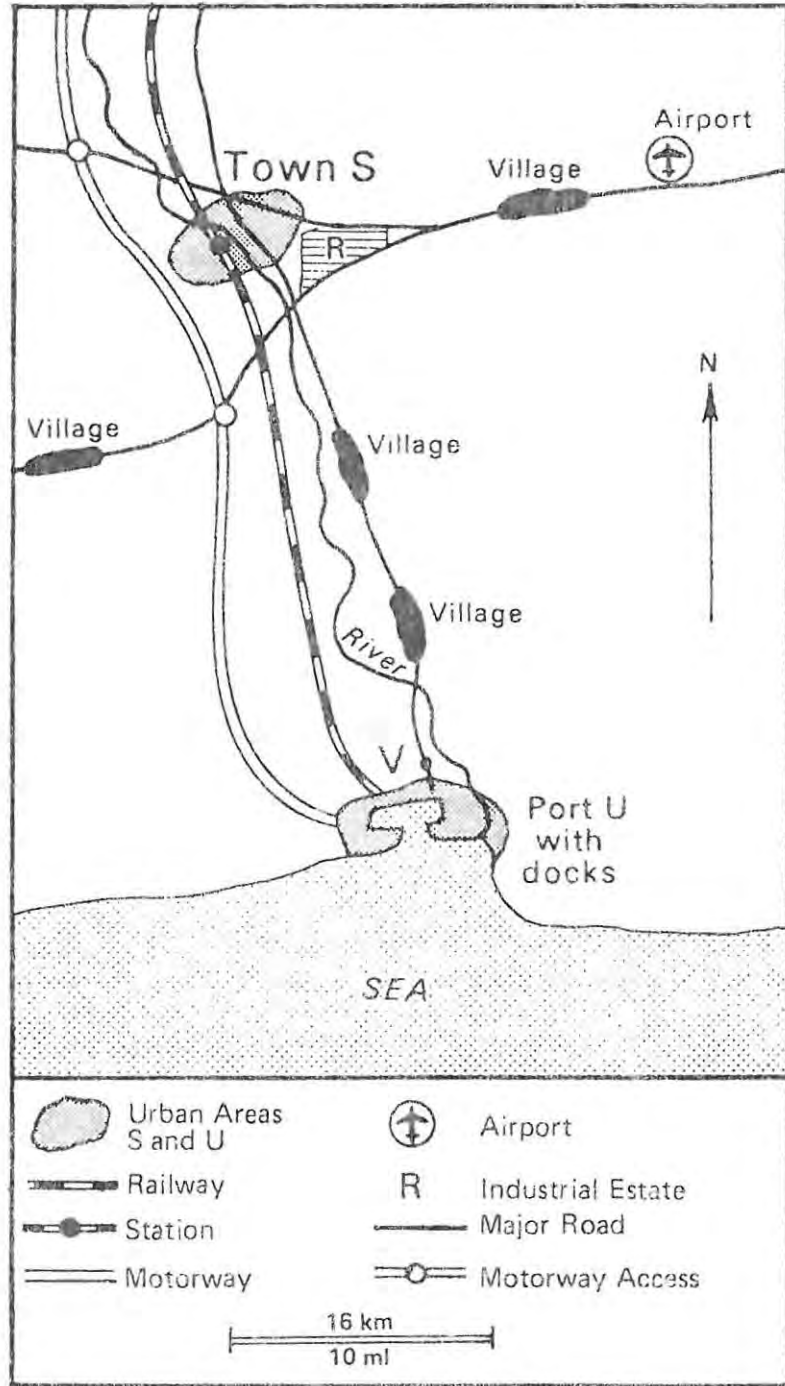
(2)

20

(a)

Figure 5/1

LOCATION OF AN INDUSTRIAL ESTATE



Carefully study figure 5/1 above, a sketch map showing the position of a light engineering works situated on an industrial estate on the outskirts of town S. The map shows the main transport routes used by industries in this area.

(i) What is the direct distance between estate R and the airport ?

.....

Question continued on the next page

(ii) What is the actual distance between factory R and the dockside V at port U

(a) by the major roads

(b) by the major road and motorway

(c) by the major roads and railway ?

(iii) The factory at R needs to import a small but vital part to repair one of its production line machines. Which of the following methods of transporting the part would be used? Tick your choice.

(a) sea plus rail plus major roads

(b) sea plus motorway plus major roads

(c) air plus major roads

(iv) Give ONE reason why this method would normally be chosen rather than the others.

(v) A single container unit of components is waiting to be delivered to the dock V for export. Which of the following transport systems would be used to move the container load? Tick your choice.

(a) major roads

(b) major roads and motorway

(c) major roads and railway

(vi) Give TWO reasons why this method would be used rather than either of the other two methods.

First reason

Second reason

(6)

(b) The station, the dock and the airport are all transshipment points.

(i) What is meant by the term 'transshipment point' ?

(ii) What TWO factors involved in the movement of goods are increased at transshipment points ?

..... and

(iii) Describe TWO ways in which the use of containers to transport goods has simplified transshipment.

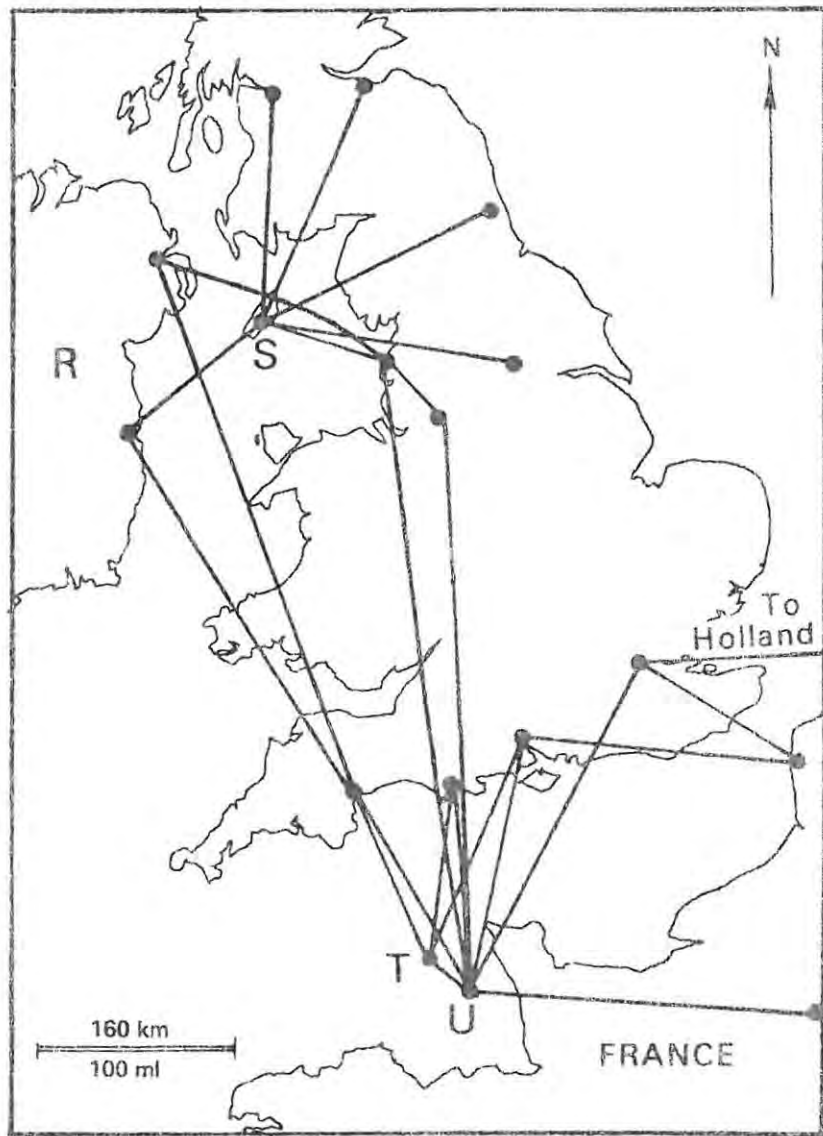
First way

Second way

(4)

Figure 5/2

PART OF BRITISH ISLAND AIRWAYS ROUTE SYSTEM



Study figure 5/2 above, a sketch map showing the major route network operated by British Island Airways, mainly between the British mainland and the neighbouring islands.

(i) With the aid of your atlas name islands R, S, T and U.

R		T	
S		U	

(ii) Which of the islands is best served in terms of the number of links with the mainland of Great Britain?

.....

Question continued on the next page

(iii) At which time (season) of the year would you expect traffic on these routes to be at its peak?

.....

(iv) Give the reason for this seasonal peak in traffic.

.....

.....

(v) These islands are also served by passenger ferry services and cargo vessels. Give ONE advantage and ONE disadvantage of this alternative method of transport compared with air travel for passenger transport, and ONE advantage for cargo.

Passengers' advantage

.....

Passengers' disadvantage

.....

Cargo advantage

.....

(7)

(d) (i) Give TWO reasons why airports are found close to but outside the boundaries of urban areas.

First reason

.....

Second reason

.....

(ii) What is the major disadvantage of the location of airports for passengers?

.....

.....

.....

(3)

20

(a)

Figure 6/1
MANUFACTURING EMPLOYMENT

	CATEGORIES OF MANUFACTURING INDUSTRY	% OF MANUFACTURING WORK FORCE	% VALUE ADDED DURING MANUFACTURE
METAL USING INDUSTRIES	METALS	13.5	14
	MACHINERY	18	17.5
	VEHICLES	18	12.5
	AIRCRAFT	2	2
	PETROLEUM	1	2
	CHEMICALS	4.5	4
	PAPER, PRINTING AND PUBLISHING	9	9
	TEXTILES AND CLOTHING	13	9.5
	FOODSTUFFS	10	7.5
	OTHER MANUFACTURING	19	10.5

Study figure 6/1 above showing manufacturing industry in an advanced industrial country where about a quarter of the workforce are engaged in manufacturing.

(i) Which of the metal using industries employs the smallest percentage of workers?

.....

(ii) Which of the non-metal using industries employs the smallest percentage of workers?

.....

Question continued on the next page

(iii) Which of the non-metal using industries (apart from other manufacturing) employs the largest percentage of workers?

.....

(iv) Which of the metal using industries employs the largest percentage of workers?

.....

(v) Which of the groups of industries adds least value during manufacture?

.....

(vi) Which of the groups of industries (apart from other manufacturing) adds most value during manufacture?

.....

(vii) Which non-metal using industry (apart from other manufacturing) adds more than 10 per cent to value during manufacture?

.....

(viii) What percentage of the total number of workers employed in manufacturing are engaged in metal using industries?

.....

(4)

(b) Study figure 8/1 opposite and try to give ONE reason for each of the following:

(i) Why only a very small percentage of the workers engaged in manufacturing are employed in the aircraft industry.

.....

.....

(ii) Why a large percentage of workers are employed making machinery.

.....

.....

(iii) Why the petroleum industry adds little to value during manufacture.

.....

.....

(iv) Why vehicles have 12.5% value added during manufacture.

.....

.....

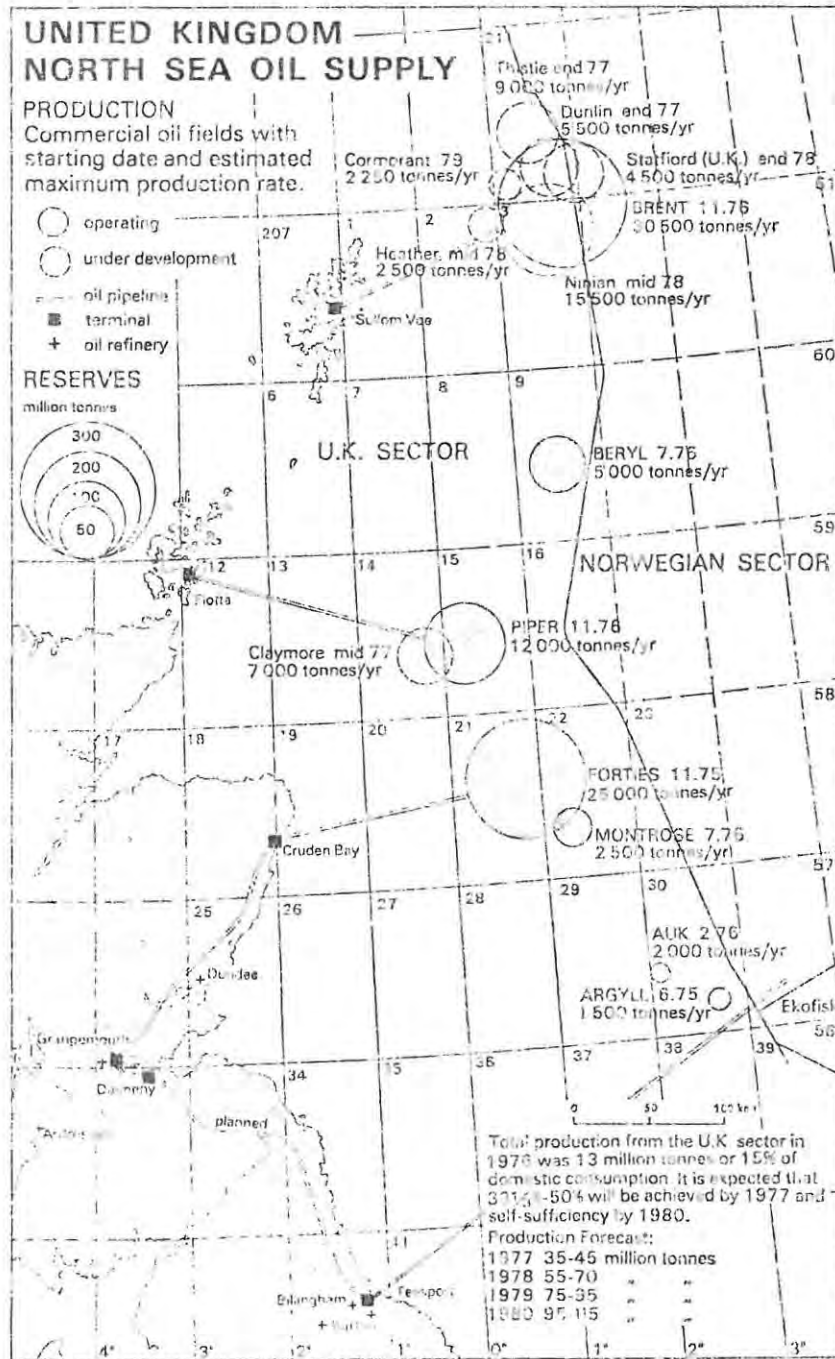
(4)

Turn over for the rest of the question

(c)

679

Figure 6/2



Reproduced by courtesy of George Philip & Son Limited

Study figure 6/2 above, showing United Kingdom North Sea Oil Supply.

(i) According to the information on the map in which year will Britain achieve self-sufficiency in oil production?

.....

(ii) What is the forecast production for 1979 in million tonnes?

.....

(iii) Which TWO fields have the largest oil reserves and the largest productions in tonnes per year?

.....

Question continued on the next page

(iv) Which other country shares this part of the North Sea oil field with Britain?

.....

(v) What guidelines have been used to divide up the bed of the North Sea into numbered parts for oil exploration?

.....

(vi) How will most of the oil be transported from the drilling rigs to the islands and the mainland?

.....

(vii) How many oil terminals are shown on the map?

.....

(5)

(d) Describe THREE effects of the building of an oil terminal on the livelihood of a sparsely populated rural island community, such as the Shetland Islands.

First effect

.....

Second effect

.....

Third effect

.....

(3)

(e) If you were planning to build a new oil refinery and petro-chemical industry complex near to a North Sea oilfield, which TWO of the following factors would be very important considerations in your choice of site. Give TWO reasons why each factor you choose is important.

- A Labour supply locally available.
- B Proximity to urban market area.
- C Availability of large area of cheap, flat land.
- D Government aid to help pay for building the plant.
- E Proximity to large supply of cheap water.

First Factor

First reason

.....

Second reason

.....

Second Factor

First reason

.....

Second reason

.....

(4)

20

Joint 16+ Examinations 1980

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Geography

Paper 1

*Friday 16 May 1980
9.30am to 10.45am*

ATTEMPT ALL QUESTIONS

You are advised to attempt them in the order in which they appear on the paper.

Consider each question carefully but leave any which you find too difficult and come back to them later if you have time. The most difficult questions are not necessarily at the end of the test.

Choose the alternative which you think is correct, then mark your response on the answer sheet in pencil (HB). The method of recording your answers is shown on the answer sheet.

Rough work must be done in the question book, not on the answer sheet.

The answer sheet is to be handed separately to the supervisor at the end of the examination.

An atlas extract of Northern England is provided.

A separate sheet of photographs for Questions 1, 2 and 3 is provided.

MULTIPLE CHOICE QUESTIONS:

Each of the questions 1 to 24 has a statement or question with five alternative responses. Indicate your choice of the best response, A, B, C, D or E by making a pencil stroke as indicated on the answer sheet.

STUDIES IN NORTHERN ENGLAND

Questions 1 to 3

Questions 1 to 3 refer to the photographs provided on the separate sheet. Photographs P and Q show the greater part of a northern town. Both photographs were taken from the same position on a limestone crag overlooking the town. The photographs overlap slightly, the right-hand part of Photograph P showing the same features as the left-hand part of Photograph Q.

Figure 1 below is a map showing the street plan of the area shown on Photographs P and Q.

Before answering Questions 1 to 3 study the two photographs and the map in Figure 1. On the map try to recognise the streets shown on the photographs.

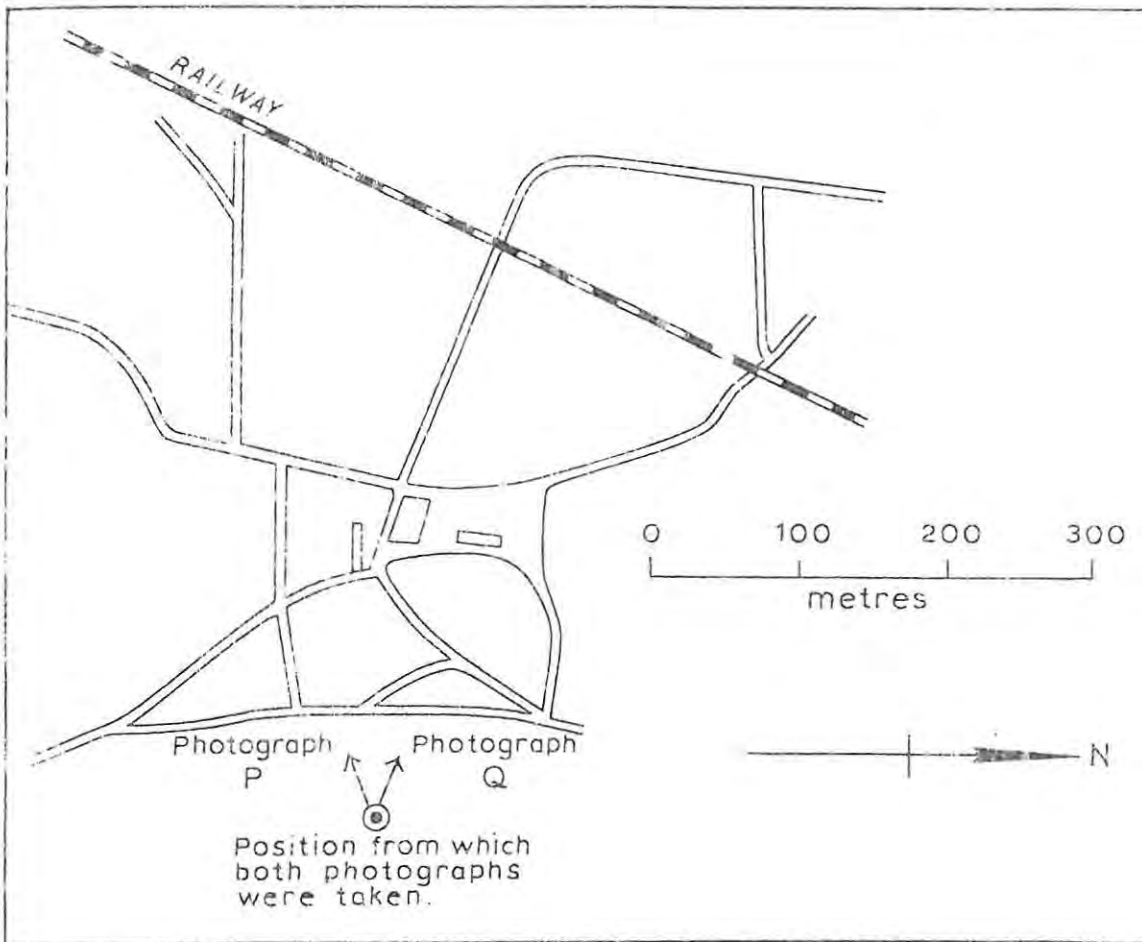


Figure 1

Questions 1 and 2

Figure 2 is a copy of Figure 1. On this map five locations are labelled A to E. Use the letters to answer Questions 1 and 2.

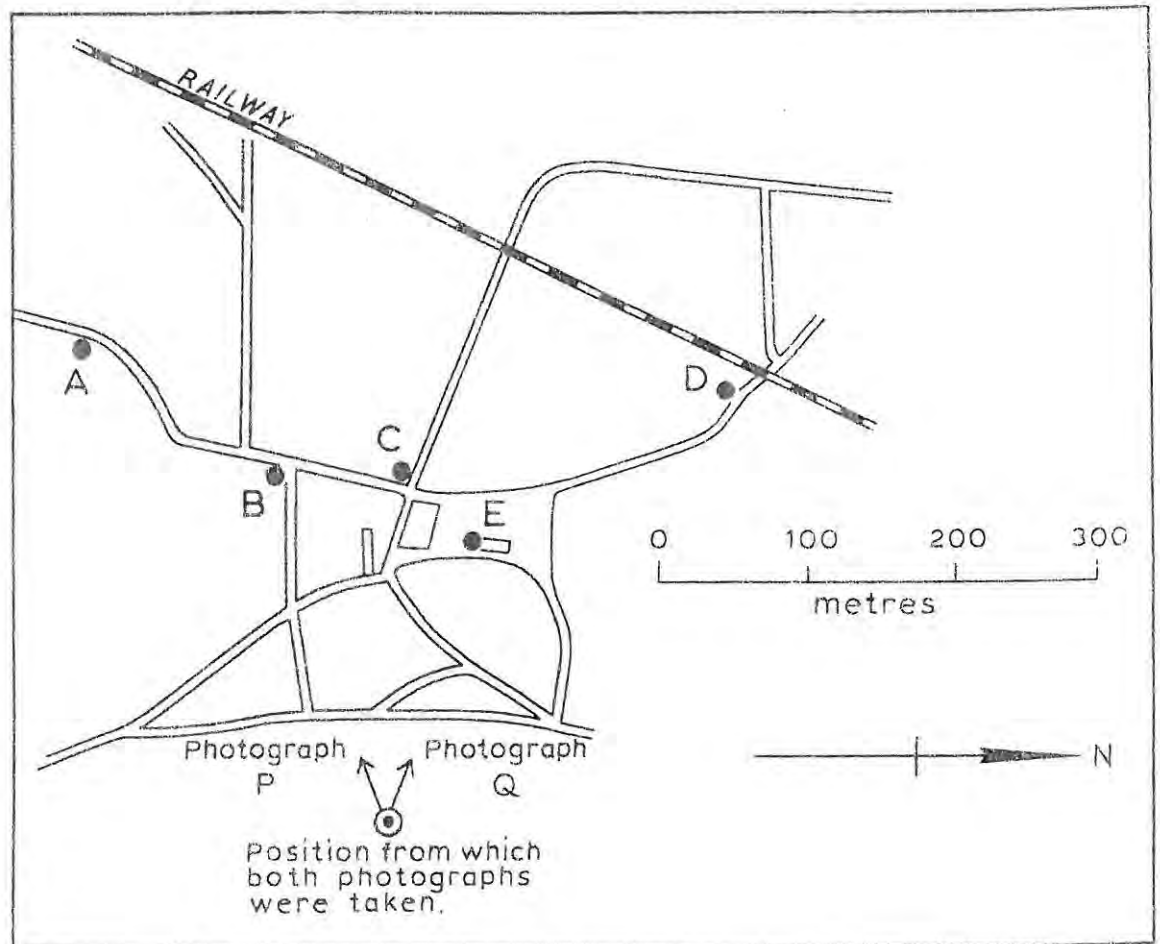


Figure 2

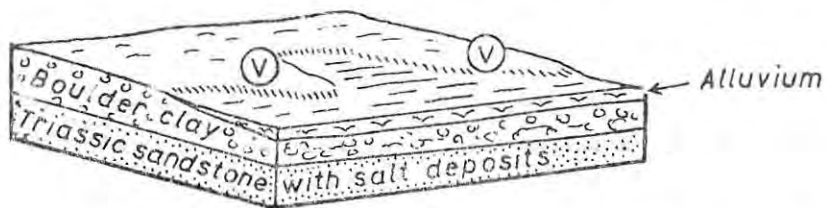
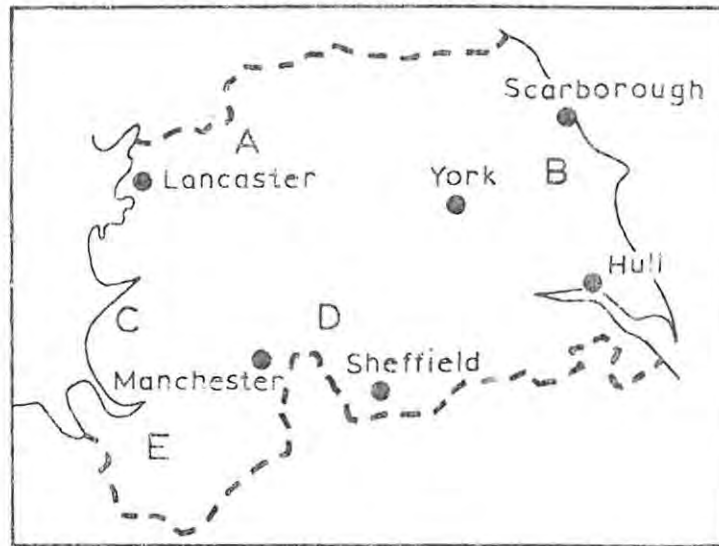
Photographs R and S (on the separate sheet) were taken at two different places within the town.

At which location (A to E) was each of these photographs taken?

1. Photograph R.
2. Photograph S.
3. Which of the following terms best describes the town shown in Photographs P to S?
 - A conurbation
 - B dormitory suburb
 - C industrial town
 - D market centre
 - E new town

4. The map below shows five locations (A to E) in northern England.

The diagram below shows a type of settlement pattern which is found in northern England.



Ⓥ Village site

In which location (A to E) on the map would you be most likely to find a settlement pattern similar to that shown in the diagram?

Questions 5 and 6

The tables below refer to the port of Liverpool.

Table 1
Important Imports of Liverpool
(thousands of tonnes)

Wheat and flour	1 362
Sugar and molasses	931
Ores	1 888
Wood and timber	323
Cotton (raw)	237
Oil seeds	209
Oil fats and gums	261
Petroleum	10 535

Table 2
Important Exports of Liverpool
(thousands of tonnes)

Potteries, glass and glassware	201
Iron and steel	881
Machinery	455
Chemicals, drugs and dyes	970
Soaps and oils	224
Vehicles	220

Study these tables and then answer Questions 5 and 6.

5. Which one of the following terms best describes all the goods exported from Liverpool?
- A invisible exports
 - B engineering products
 - C textiles
 - D manufactured goods
 - E metal goods
6. From which one of the following towns in northern England are glass and glassware likely to be sent to Liverpool for export?
- A Sheffield
 - Huddersfield
 - C St. Helens
 - D Grimsby
 - E Bolton

Questions 7 and 8

Read the description given below which is of the landscape seen on a car journey from Scarborough in summer. Then answer Questions 7 and 8.

"Shortly after leaving the centre of Scarborough the land dipped gently southwards and soon we were in a flat-floored area surrounded by hills. The better-drained parts of the flat land supported grain and roots. Some parts were still poorly drained and were used as pasture land."

"After driving in the same direction for a further five kilometres the land rose sharply and soon we were in a rolling plateau-like area. The farmland was golden in colour except for occasional patches of green where shelter-belts surrounded farms or sheep were folded on clover. We noticed that the villages on the plateau were in valleys below the level of the fields. We also noticed that the valleys did not contain streams. After about fifteen kilometres the plateau sloped downwards and we finally stopped at the edge of a plain stretching towards the coast and the Humber estuary."

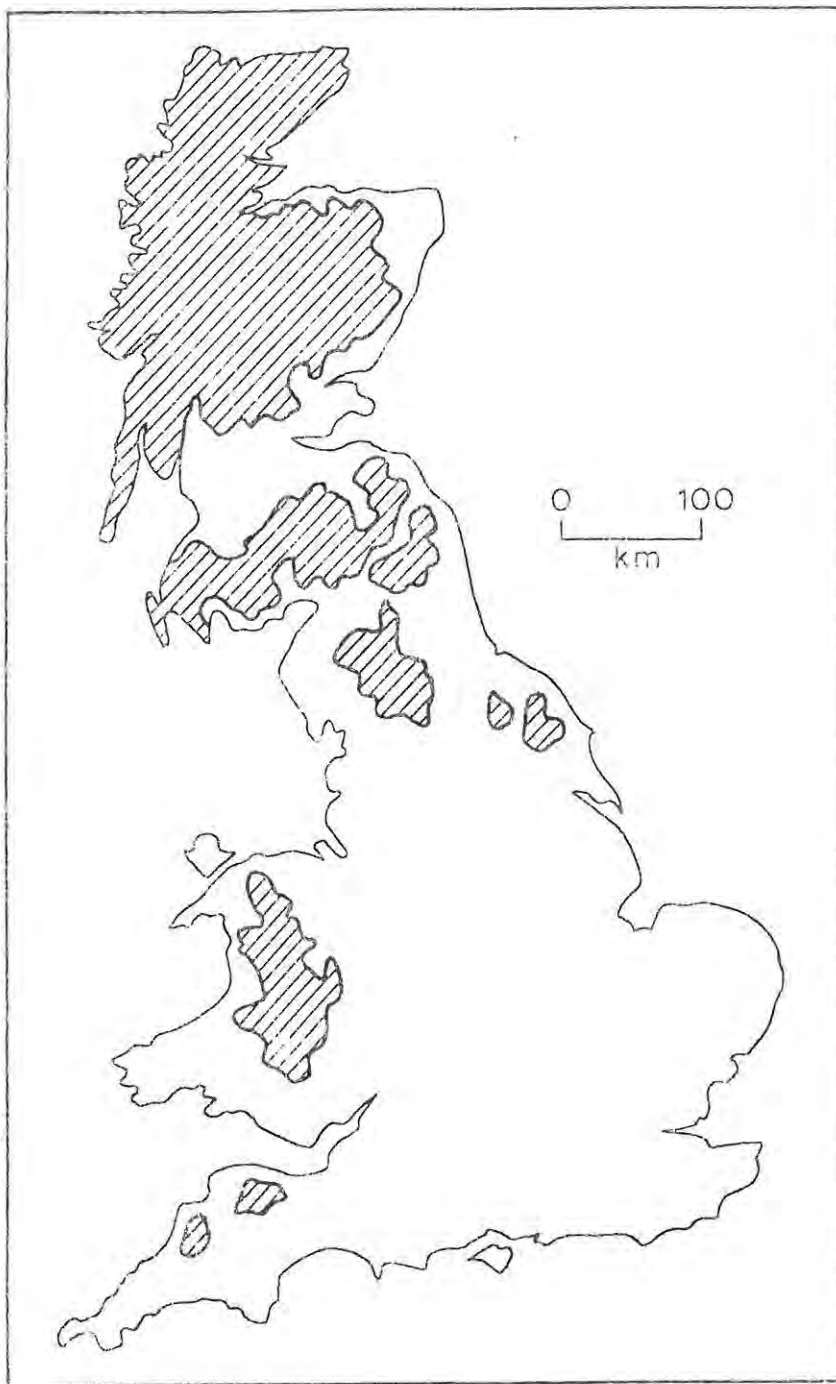
7. The "rolling plateau-like area" is
- A the Yorkshire Wolds.
 - B the North York Moors.
 - C Holderness.
 - D Flamborough Head.
 - E the Hambleton Hills.
8. The "plain stretching towards the coast" is
- A the Vale of Trent.
 - B the Vale of Pickering.
 - C the Vale of York.
 - D Holderness.
 - E Humberside.

ENGLAND, WALES AND SCOTLAND

9. The shaded areas on the map of mainland Scotland below represent which one of the following?



- A areas where crofting is common
- B areas devoted mainly to dairy farming
- C areas of relatively high population density
- D national forest parks
- E coalfields

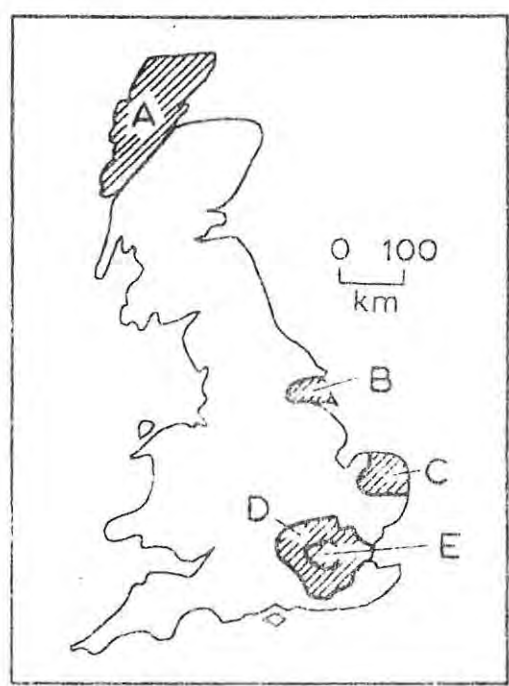


The map above shows the location in England, Scotland and Wales of which one of the following?

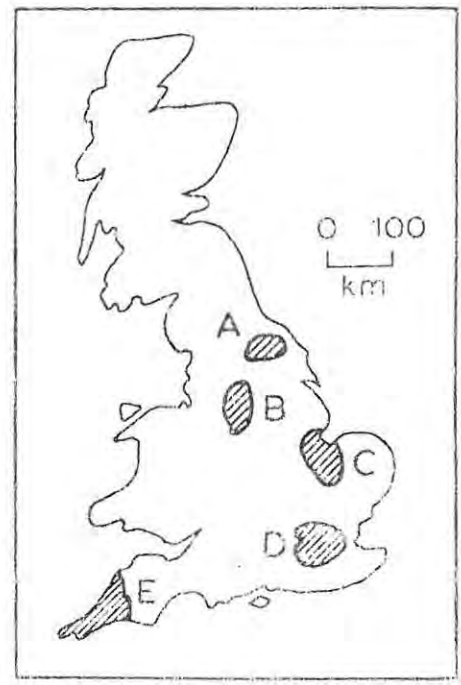
- 1 national parks
- 2 exposed coalfields
- 3 areas of sparse population
- 4 leading sugar beet producing areas
- 5 spheres of influence of major cities

11. Five areas are labelled A to E on the map below.

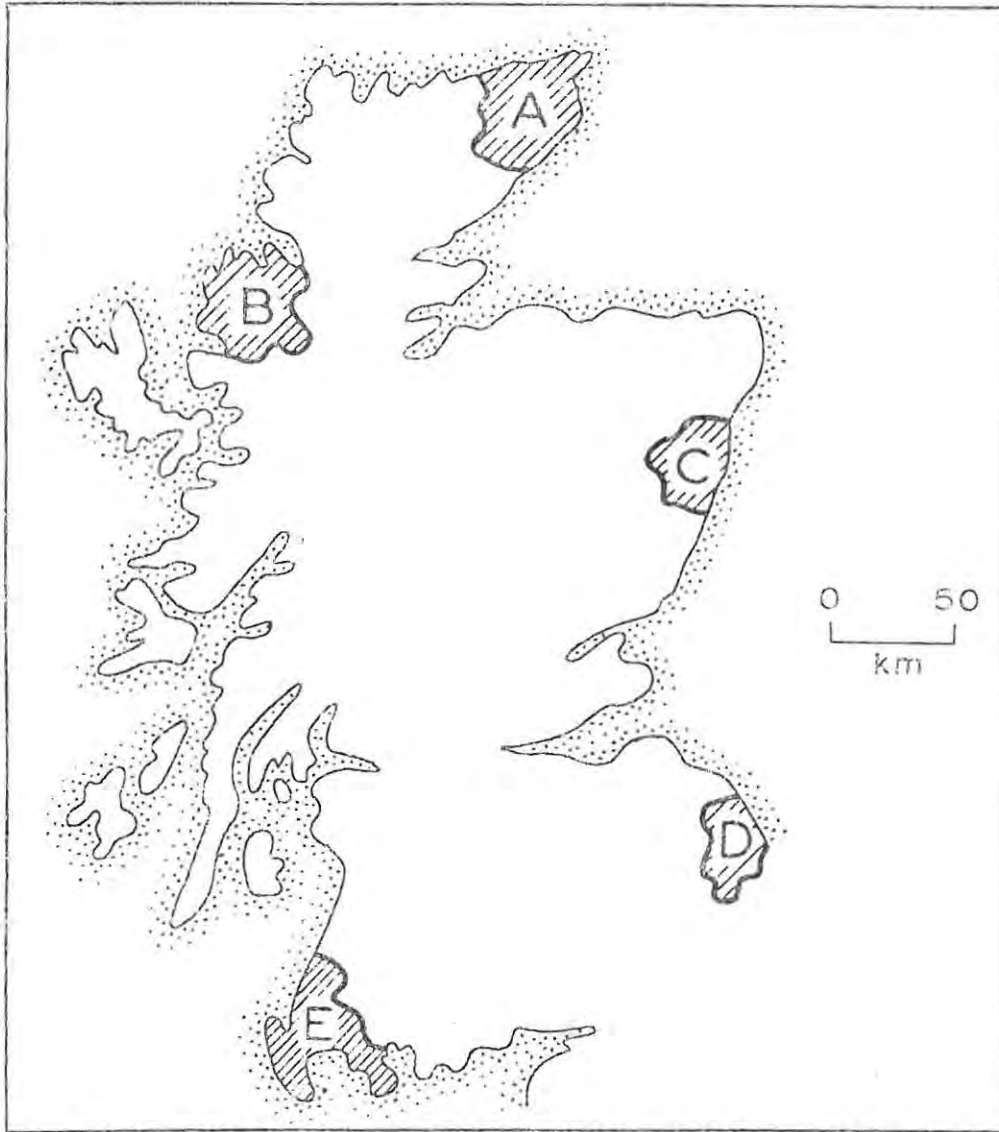
In which one of these areas (A to E) has the population growth been greatest in the last 30 years?



12. Five areas are labelled A to E on the map below. Which one of these areas is first-class arable land?

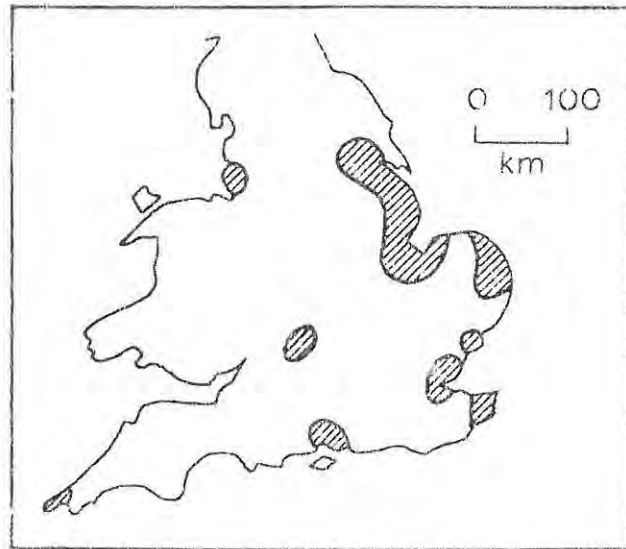


13. Five areas are labelled A to E on the map of Scotland below. Which one of these areas (A to E) has experienced a large increase in population since 1970?



4. Which one of the following (A to E) represents the contribution of hydroelectric power to total electricity generated in Britain at the present time?
- A over 80%
 - B 60 – 80%
 - C 40 – 60%
 - D 20 – 40%
 - E under 20%
5. Which one of the following national parks is enclosed by a complete ring of motorways?
- A Brecon Beacons
 - B Dartmoor
 - C North York Moors
 - D Peak District
 - E Yorkshire Dales

16.



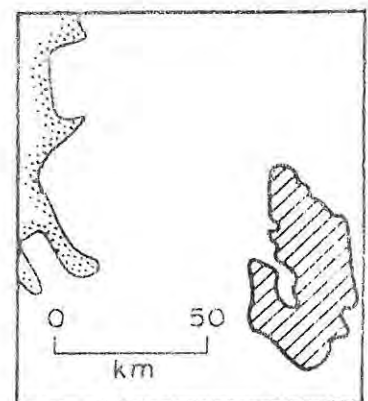
The shaded areas on the above map represent parts of England and Wales where 10 per cent or more of rural areas are occupied by which one of the following land uses?

- A vegetables
 - B heath, rough land
 - C mixed woodland
 - D recreational areas
 - E tree fruits
17. In England, only seven cities have population totals over 400 000. These are London, Birmingham, Liverpool, Manchester, Sheffield, Leeds and Bristol.

Which one of the following national parks is located nearest to the greatest number of these cities?

- A Dartmoor
 - B North York Moors
 - C Peak District
 - D Snowdonia
 - E Yorkshire Dales
18. Which one of the national parks listed (A to E) below is shown on the map opposite?

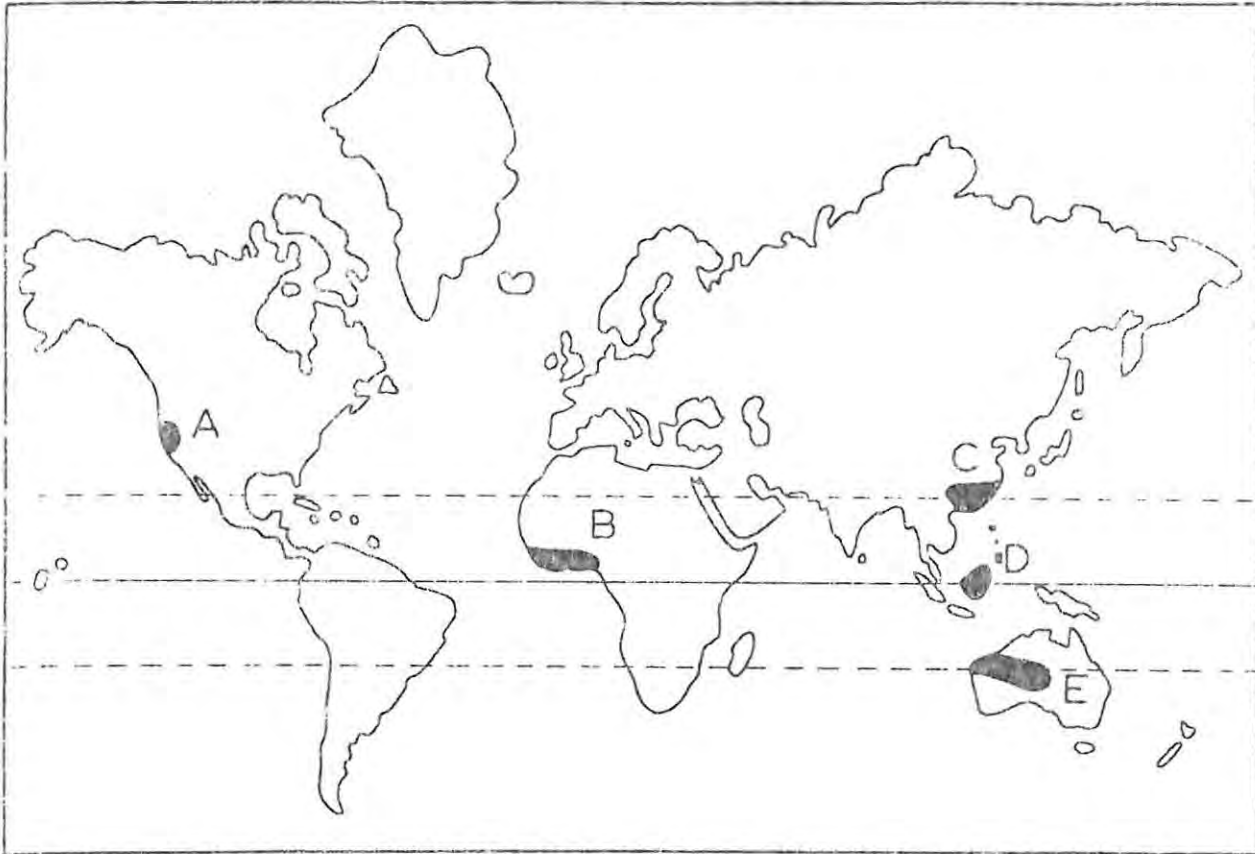
- A North York Moors
- B Snowdonia
- C Brecon Beacons
- D Peak District
- E Yorkshire Dales



SELECTED WORLD STUDIES

19. "Temperatures are high throughout the year (often over 38°C) and rainfall is slight and in some years none falls at all. Stunted bushes and coarse grass form the only vegetation cover and there are large bare areas. The region is virtually uninhabited except for a few mining towns."

To which one of the areas labelled A to E on the world map below does the above description apply?



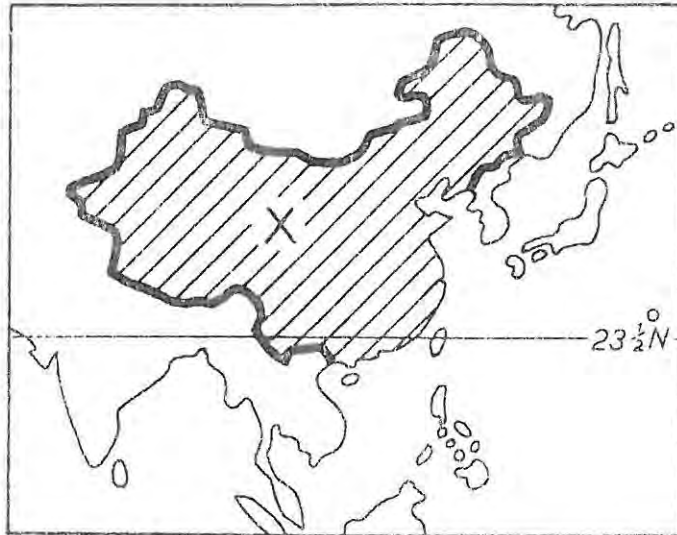
20. The table below gives details of living standards in the United Kingdom and another country.

	Average size of household (number of persons)	Average number of rooms per house	Percentage of dwellings with inside piped water
United Kingdom	2.9	4.8	98.7
Another Country	4.9	2.3	14.6

Which one of the following countries (A to E) is represented by the information given for "Another Country"?

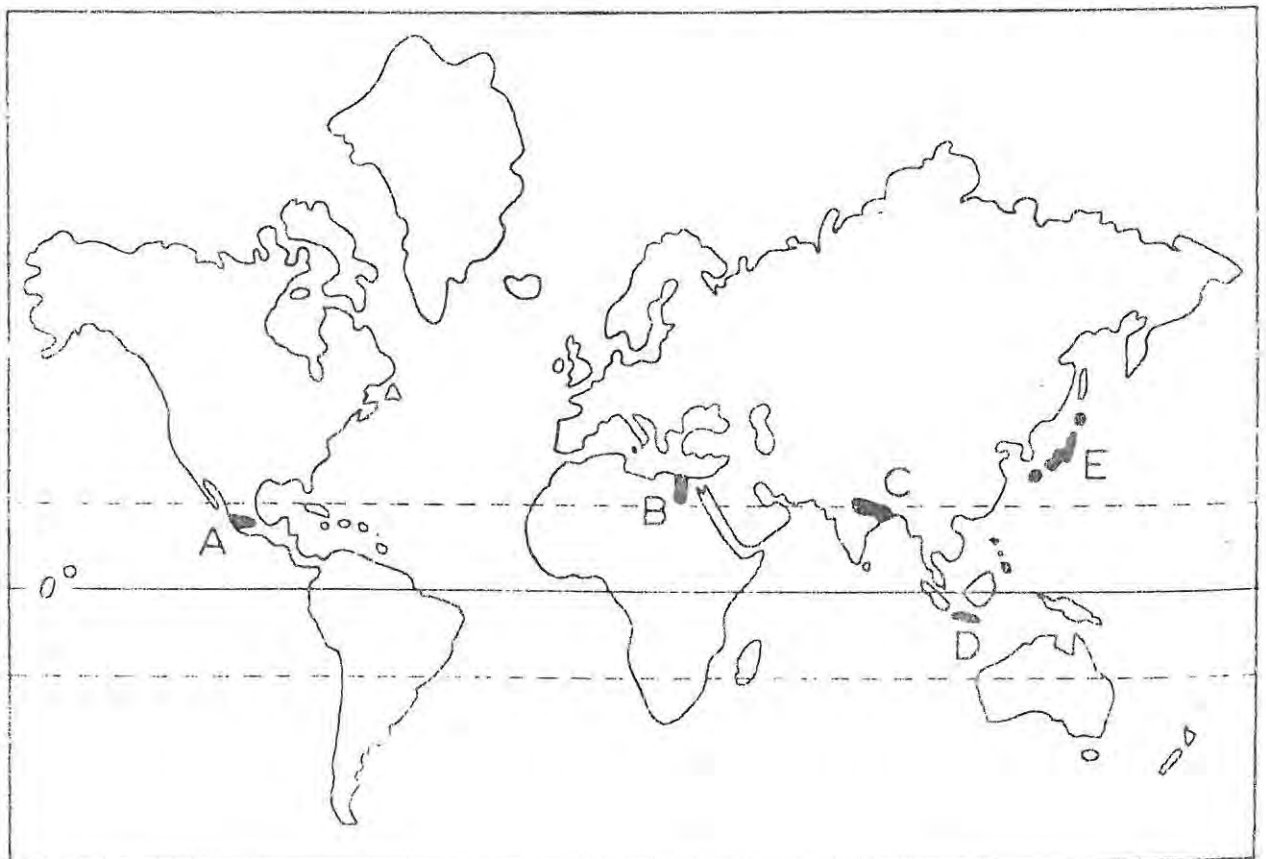
- A Israel
- B Japan
- C New Zealand
- D Peru
- E Sweden

21.

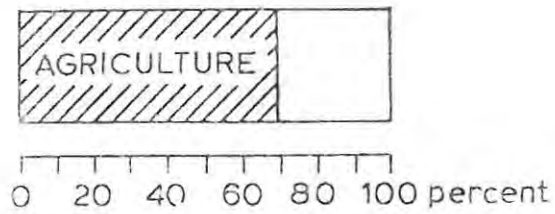


The estimated population of country X on the above map is

- A 9 million.
 - B 900 million.
 - C 19 million.
 - D 90 million.
 - E 190 million.
22. The map below shows five areas of high population density labelled A to E. In which one of these areas is the percentage of the population engaged in manufacturing and service industries greatest?

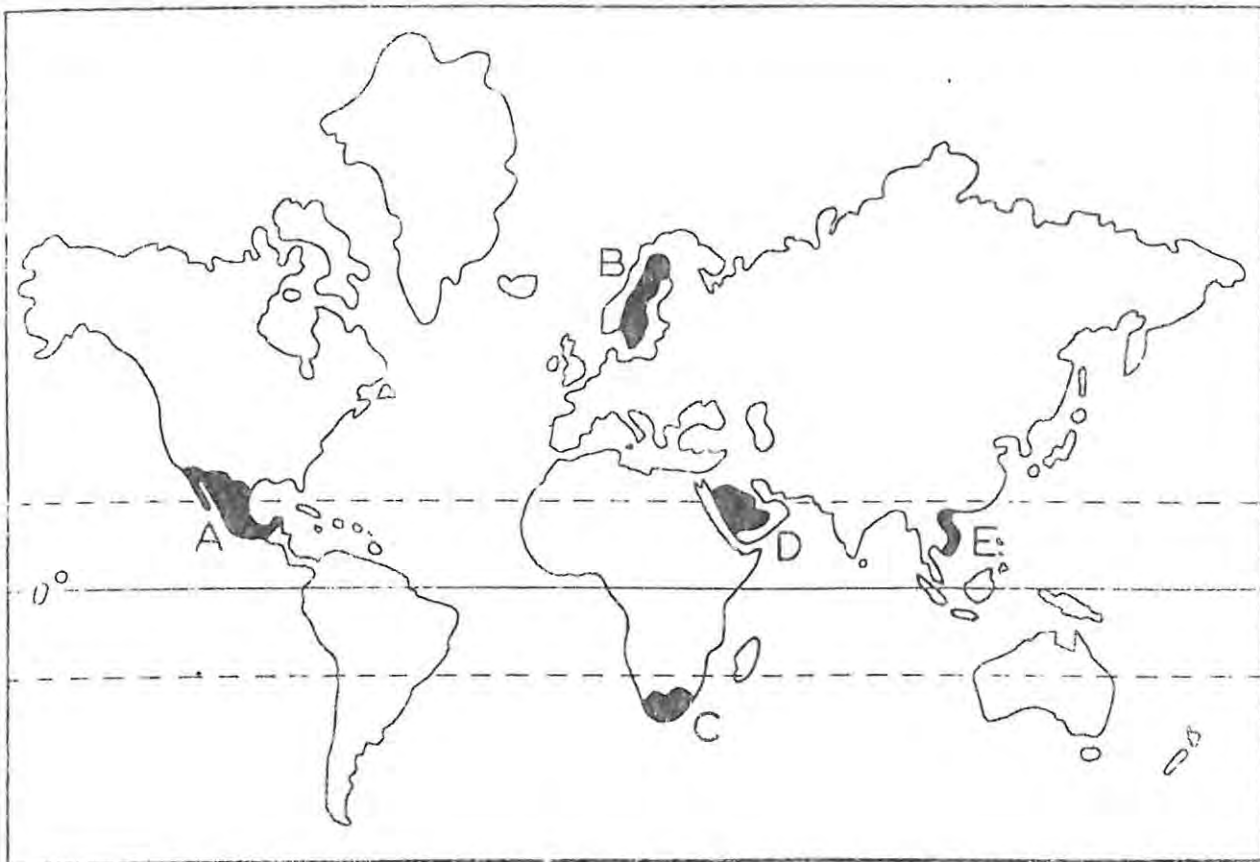


23. Study the diagram, below which represents the percentage of population engaged in agriculture in a country in the Northern Hemisphere.



Which one of the following countries (A to E) is represented by the diagram?

- A Belgium
 - B India
 - C Japan
 - D Sweden
 - E United States
24. The map below shows five countries labelled A to E. In which one of the countries is communism the main influence on the organisation of the economy?

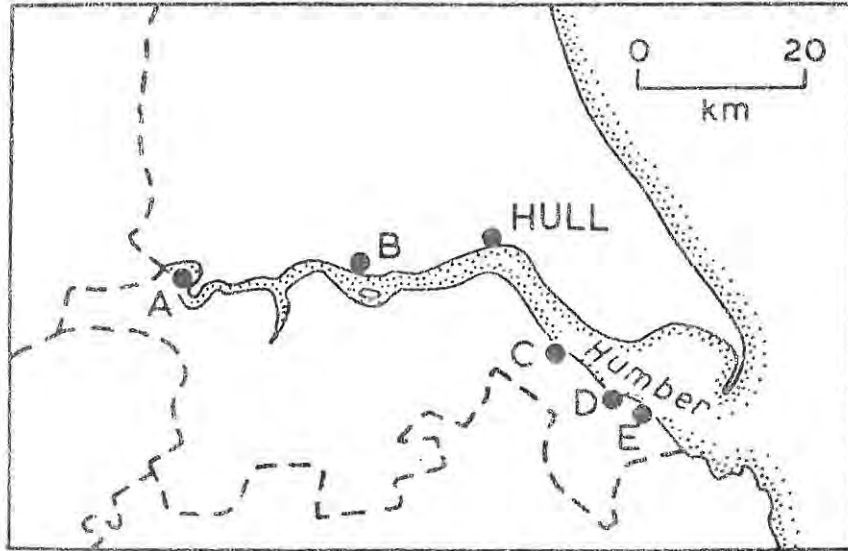


MATCHING PAIRS QUESTIONS

In Questions 25 to 38 the questions are grouped. Each group has its set of alternative answers A, B, C, D and E. Within each group each letter may be used once, more than once or not at all.

STUDIES IN NORTHERN ENGLAND

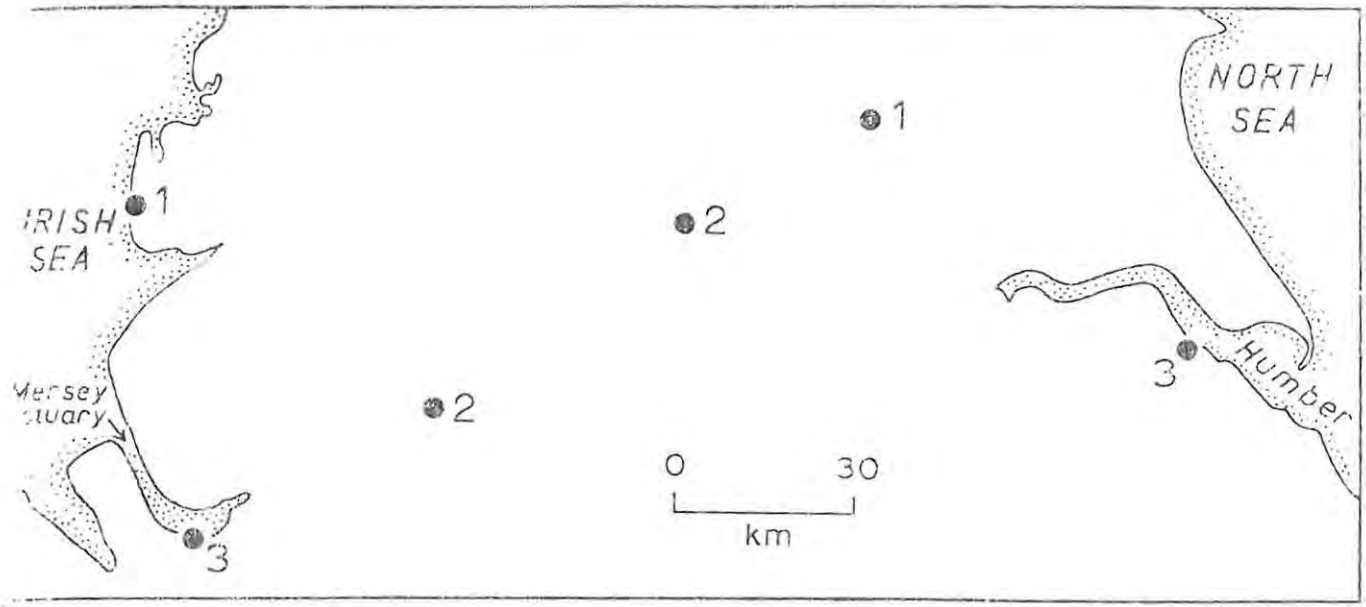
Questions 25 and 26.



Which one of the towns A to E shown on the map above is

25. a fishing port?
26. the terminus of an inland waterway system?

Questions 27 – 29.



Three pairs of places are labelled 1, 2 and 3 on the map above.

The list below (A to E) gives five kinds of places.

- A market town in a rural area
- B centre of a conurbation
- C centre for the tourist industry
- D New Town
- E oil refinery

Which kind of place (A to E) is

27. Pair 1?

28. Pair 2?

29. Pair 3?

ENGLAND, WALES AND SCOTLAND

Questions 30 and 31

The following list (A to E) gives five types of economic development.

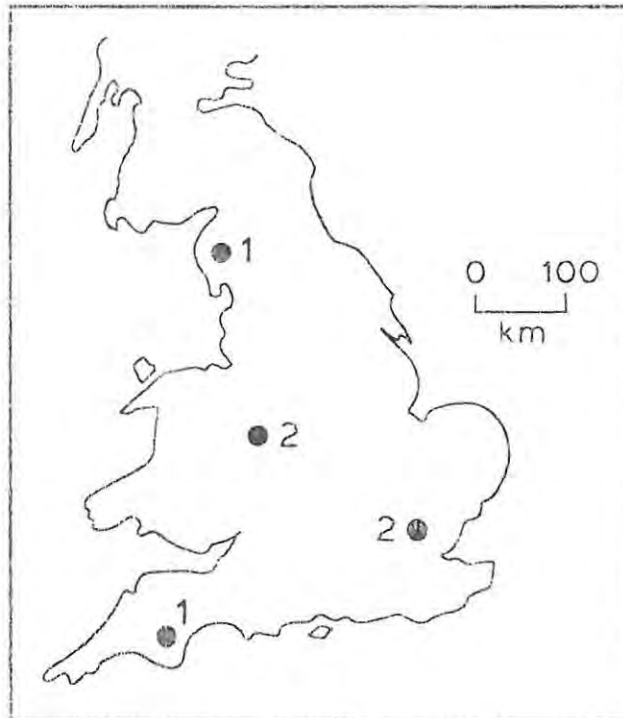
- A the building of New Towns
- B the closure of coal mines
- C the construction of nuclear power stations
- D the development of the tourist industry
- E the expansion of the oil refining industry

Two pairs of locations are labelled 1 and 2 on the map below.

Which economic development (A to E above) has affected the rate of population change in

30. Pair 1?

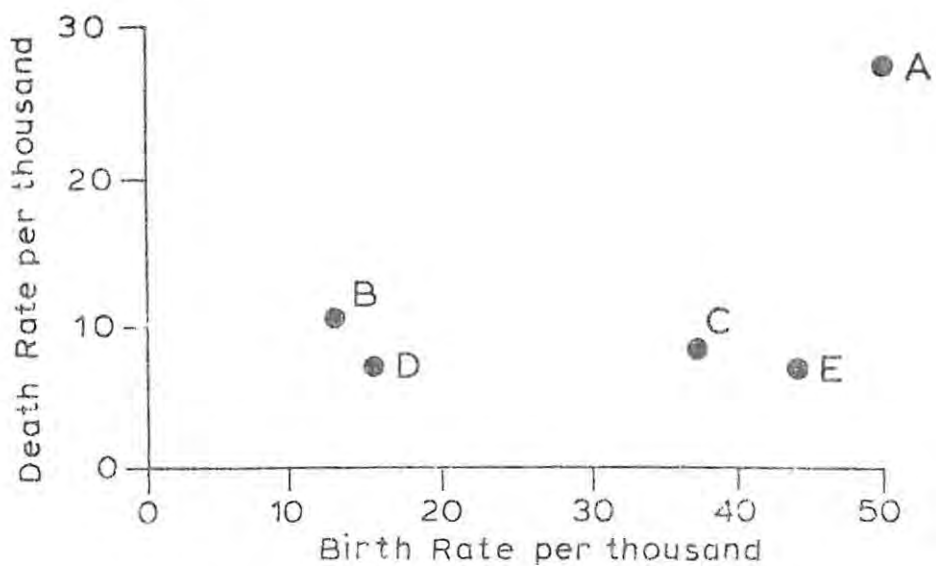
31. Pair 2?



SELECTED WORLD STUDIES

Questions 32 – 33

The diagram below shows the birth rates and the death rates of five countries which are labelled A to E.



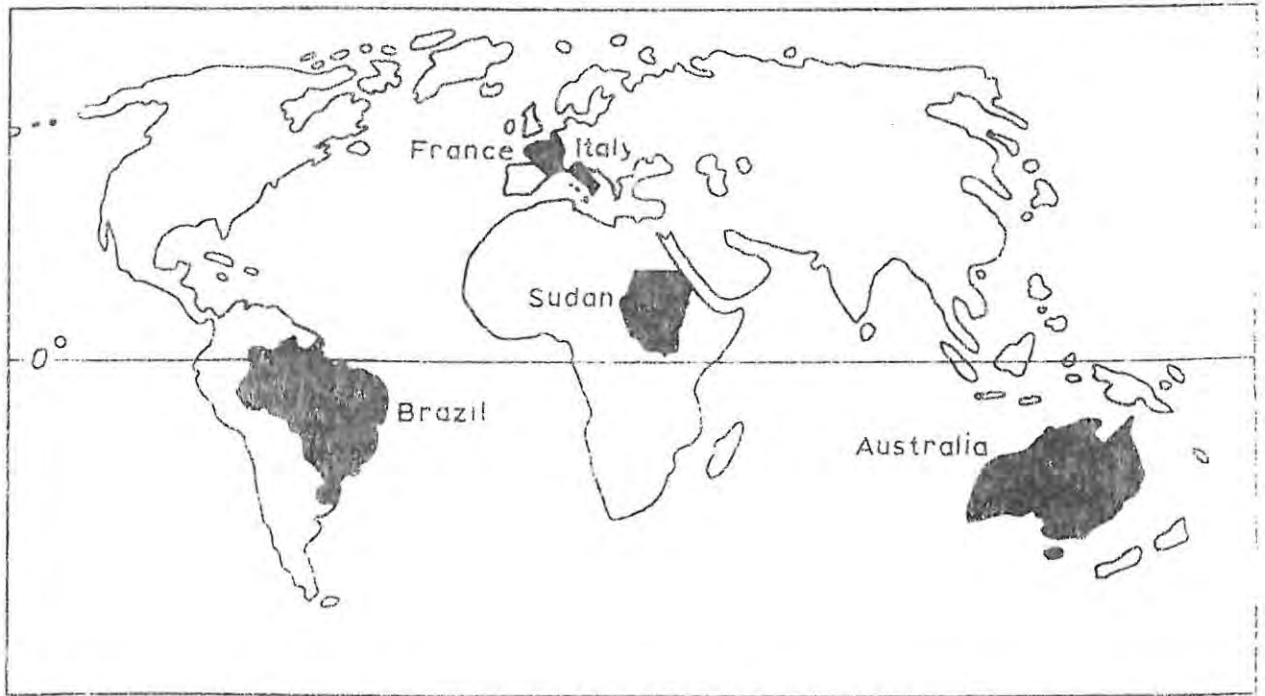
Which letter (A to E) in the diagram represents

32. the country with the fastest rate of natural increase of population?
33. the country with the slowest rate of natural increase of population?

Questions 34 – 36

699

The world map below shows five countries.



In the following table the names of the countries on the above map have been omitted and they are referred to by the letters A to E.

Country	Area (thousands km ²)	Population (millions)	Pop. Density (persons per km ²)	Energy Consumption per head (Kg)	Percentage of workers employed in farming
A	301	54.7	177	2 431	25
B	547	52.0	92	3 018	18
C	7 687	12.9	2	5 200	10
D	8 512	98.8	11	481	48
E	2 506	16.9	6	100	78

Which letter (A to E) in the table above represents

34. Sudan ?

35. France ?

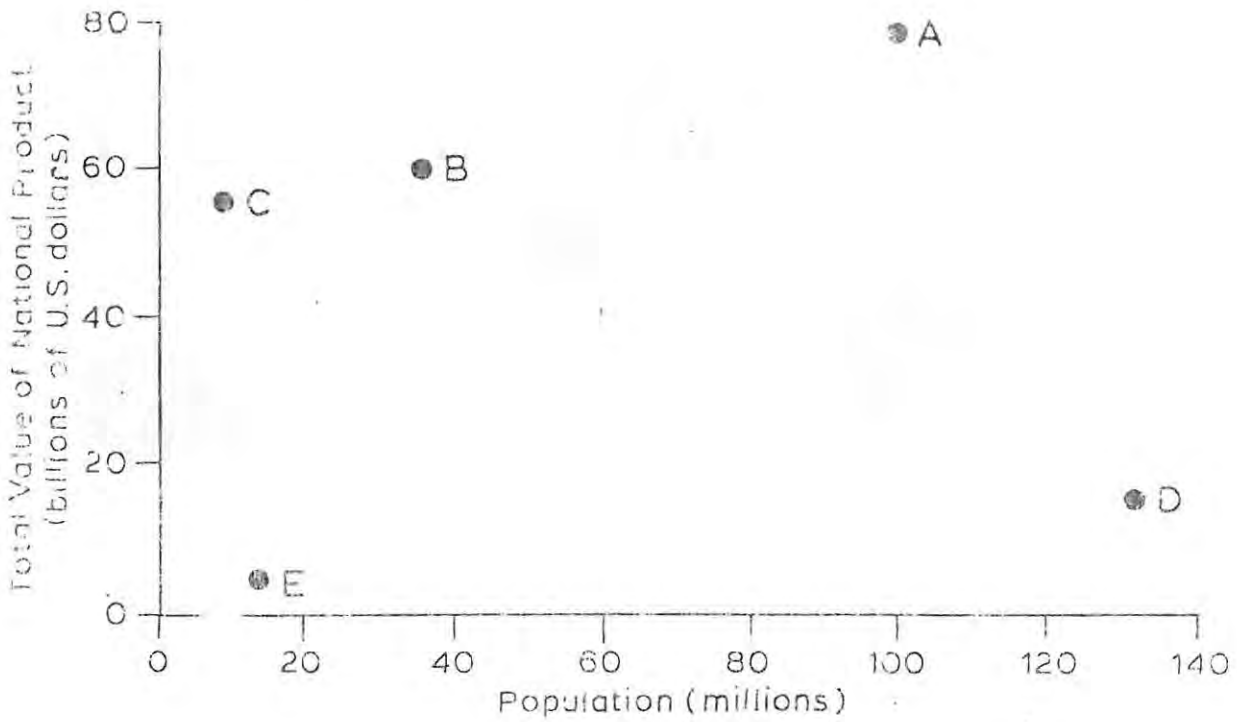
36. Australia ?

Questions 37 and 38

700

Study the graph below which shows the value of the national product and the population total of five different countries.

Five points (A to E) are marked on the graph



Which letter (A to E) on the graph represents

37. the country with the highest average living standard?

38. the country with the lowest average living standard?

MULTIPLE COMPLETION QUESTIONS

In each of Questions 39 to 50 one or more of the responses is/are correct. Decide which of the responses is/are correct. For each question a key to the form of the answer is provided below the question. Indicate your choice on the answer sheet.

ENGLAND, WALES AND SCOTLAND

39. Study the table below.

Conurbations	Population in thousands		
	1951	1961	1971
Greater London	8 206	7 877	7 441
West Midlands	2 257	2 370	2 371
South East Lancashire	2 411	2 419	2 400
Central Clydeside	1 760	1 804	1 723
West Yorkshire	1 683	1 699	1 736
Merseyside	1 382	1 380	1 264
Tyneside	835	853	803

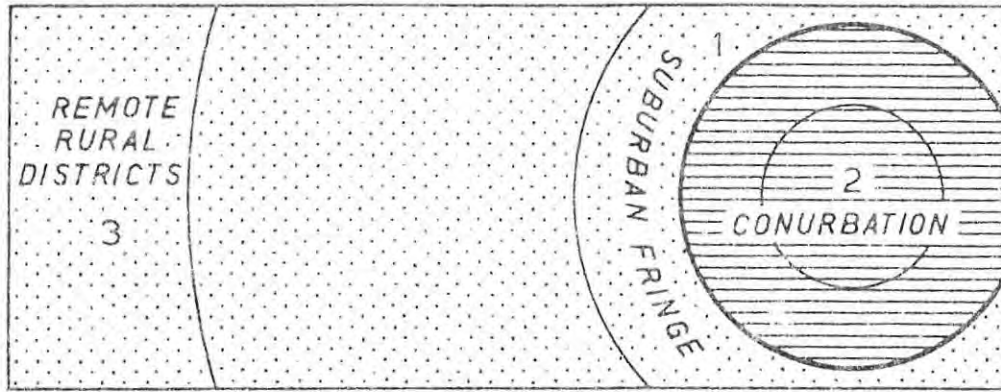
In which of the following conurbations did population decrease in each of 1951-61 or 1961-71?

- 1 Greater London
- 2 Merseyside
- 3 South East Lancashire

Answer

- A if 1 alone.
- B if 1 and 2 only.
- C if 1, 2 and 3.
- D if 2 and 3 only.
- E if 3 alone.

40. The diagram below represents a conurbation in England and its surrounding rural areas.



Five areas are shown on the diagram. Two of these are within the conurbation and three of them are rural areas at varying distances from it.

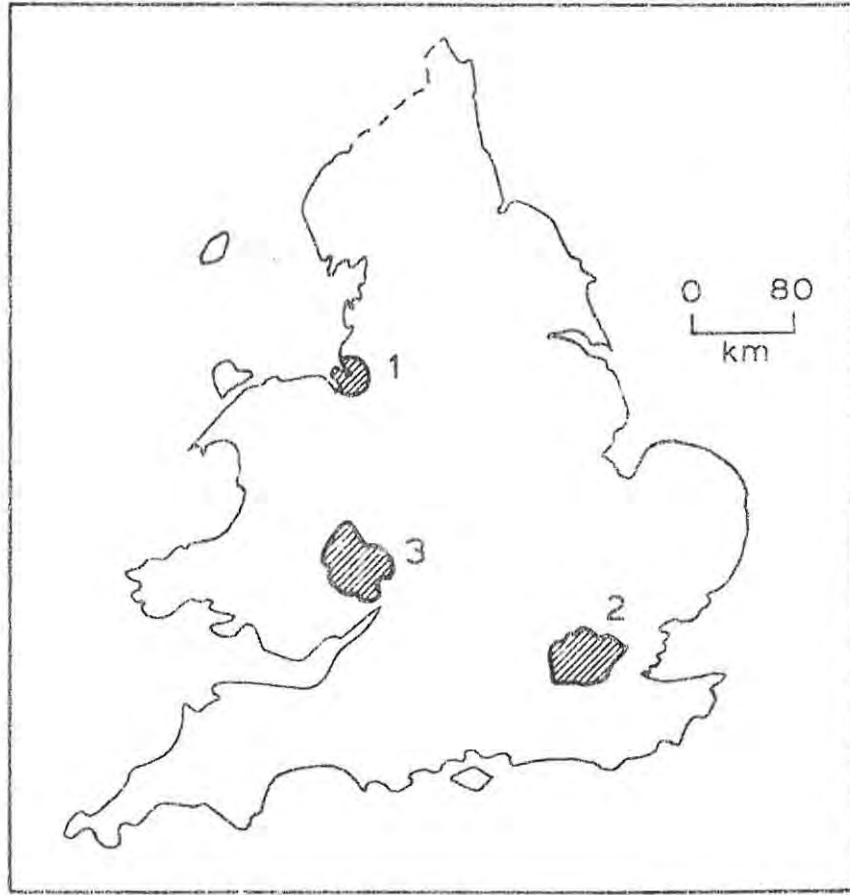
Three of these areas are labelled 1, 2 and 3.

In which of the three areas has there been an increase of population since the Second World War?

Answer

- A if 1 alone.
- B if 1 and 2 only.
- C if 1, 2 and 3.
- D if 2 and 3 only.
- E if 3 alone.

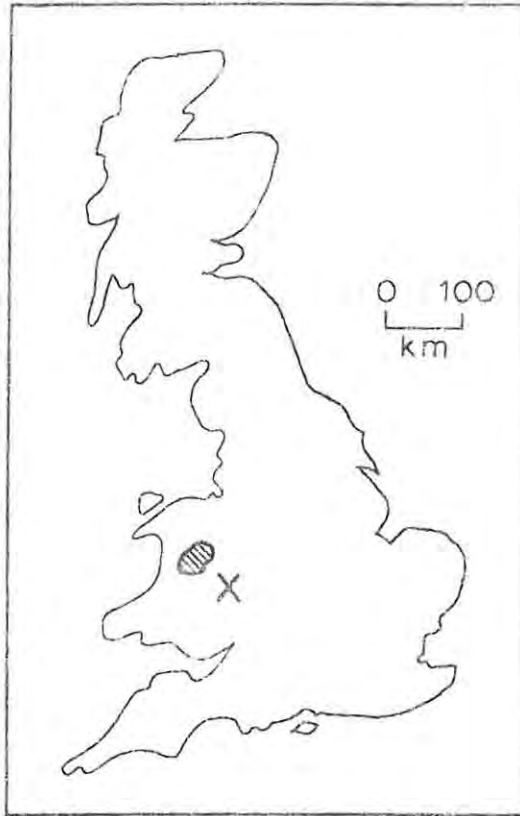
41. The term "conurbation" may be used to describe which of the areas labelled 1 to 3 on the map below?



Answer

- A if 1 alone.
- B if 1 and 2 only.
- C if 1, 2 and 3.
- D if 2 and 3 only.
- E if 3 alone.

42. The map below shows a farming area in Britain which is labelled X.



Factors influencing the development of sheep farming in Area X include which of the following?

1. the large-scale cultivation of barley as a winter fodder crop
2. the presence of a large population to provide a labour force
3. extensive areas of rough grazing on hill slopes

Answer

- A if 1 alone.
- B if 1 and 2 only.
- C if 1, 2 and 3.
- D if 2 and 3 only.
- E if 3 alone.

43. Nuclear power stations include which of the following?

1. Milton Keynes
2. Forties
3. Berkeley

Answer

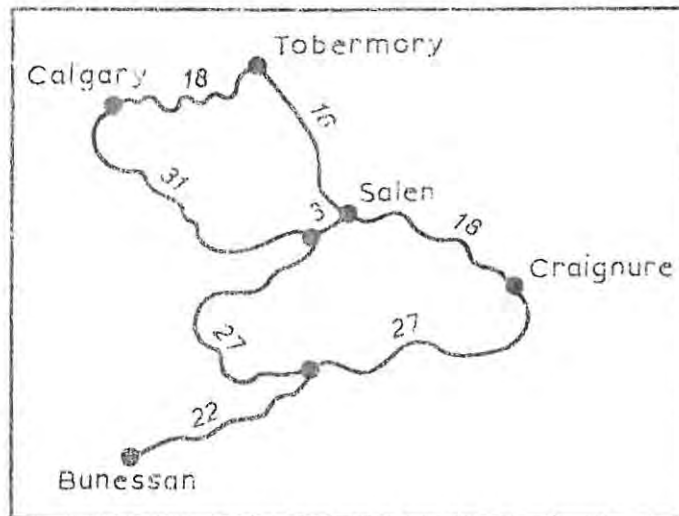
- A if 1 alone.
- B if 1 and 2 only.
- C if 1, 2 and 3.
- D if 2 and 3 only.
- E if 3 alone.

Questions 44 to 46

The map below shows part of the road network of the island of Mull, off the west coast of Scotland.

The numbers show the road distances in kilometres between the places marked by dots.

Use the map to answer Questions 44 to 46.



44. Which of the following pairs of places is/are more than 50 kilometres apart by road?

1. Calgary and Craignure
2. Salen and Bunessan
3. Bunessan and Craignure

Answer

- A if 1 alone.
- B if 1 and 2 only.
- C if 1, 2 and 3.
- D if 2 and 3 only.
- E if 3 alone.

45. Which of the following places is/are less than 60 kilometres from each of the other named places on the map?

1. Tobermory
2. Salen
3. Craignure

Answer

- A if 1 alone.
- B if 1 and 2 only.
- C if 1, 2 and 3.
- D if 2 and 3 only.
- E if 3 alone.

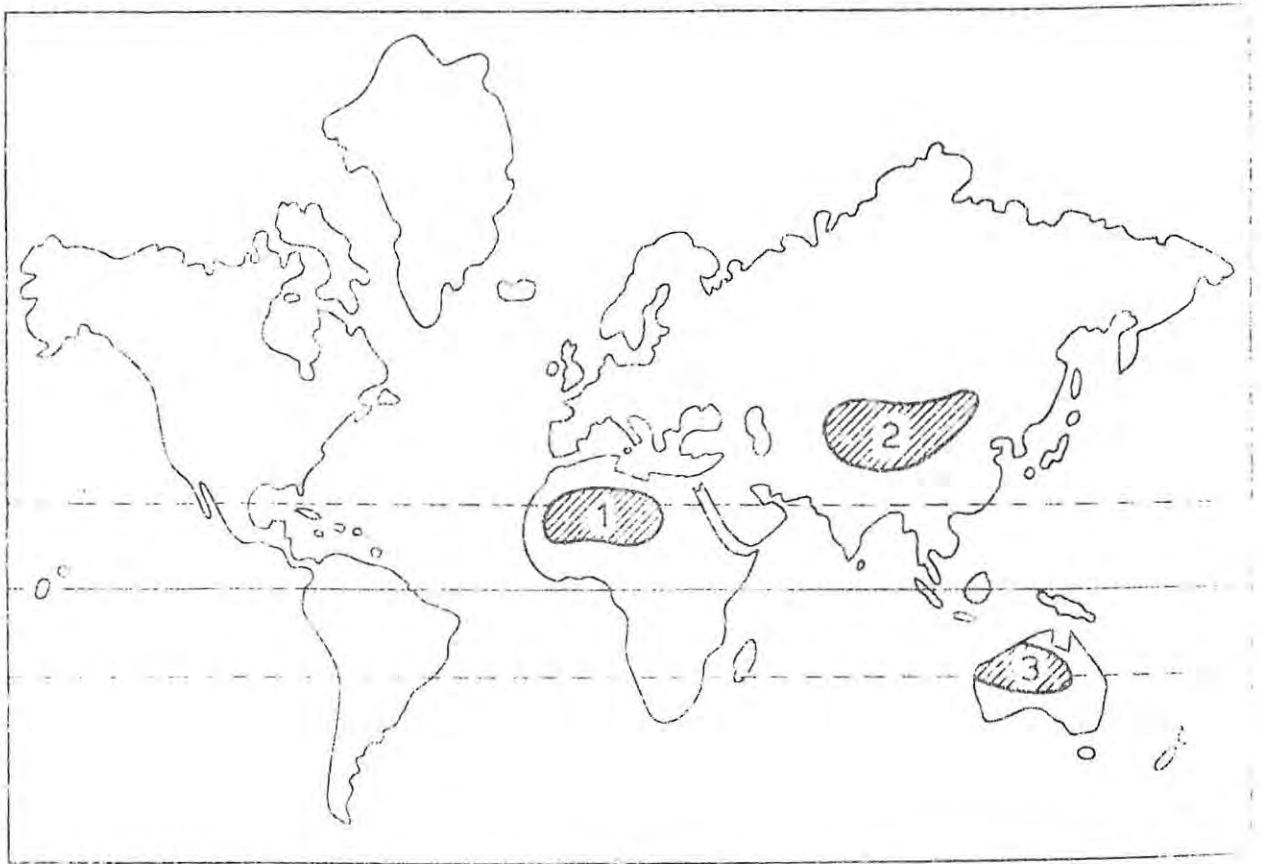
46. Between which of the following pairs of places are there two alternative road routes of exactly the same length?

1. Bunessan and Tobermory
2. Salen and Calgary
3. Craignure and Calgary

Answer

- A if 1 alone.
- B if 1 and 2 only.
- C if 1, 2 and 3.
- D if 2 and 3 only.
- E if 3 alone.

47. Which of the areas labelled 1 to 3 on the world map below is/are sparsely populated?



Answer

- A if 1 alone.
- B if 1 and 2 only.
- C if 1, 2 and 3.
- D if 2 and 3 only.
- E if 3 alone.

48. Which of the countries numbered 1 to 3 below is/are at the developing (undeveloped) stage of their evolution?

	% Annual rate of population increase	Life expectancy at birth in years
1.	3.5	50.7
2.	1.9	38.5
3.	0.9	71.0

Answer

- A if 1 alone.
- B if 1 and 2 only.
- C if 1, 2 and 3.
- D if 2 and 3 only.
- E if 3 alone.

49. Characteristics of countries with low standards of living include which of the following?

1. high birth rates
2. rapidly increasing populations
3. large proportions of their populations employed in agriculture

Answer

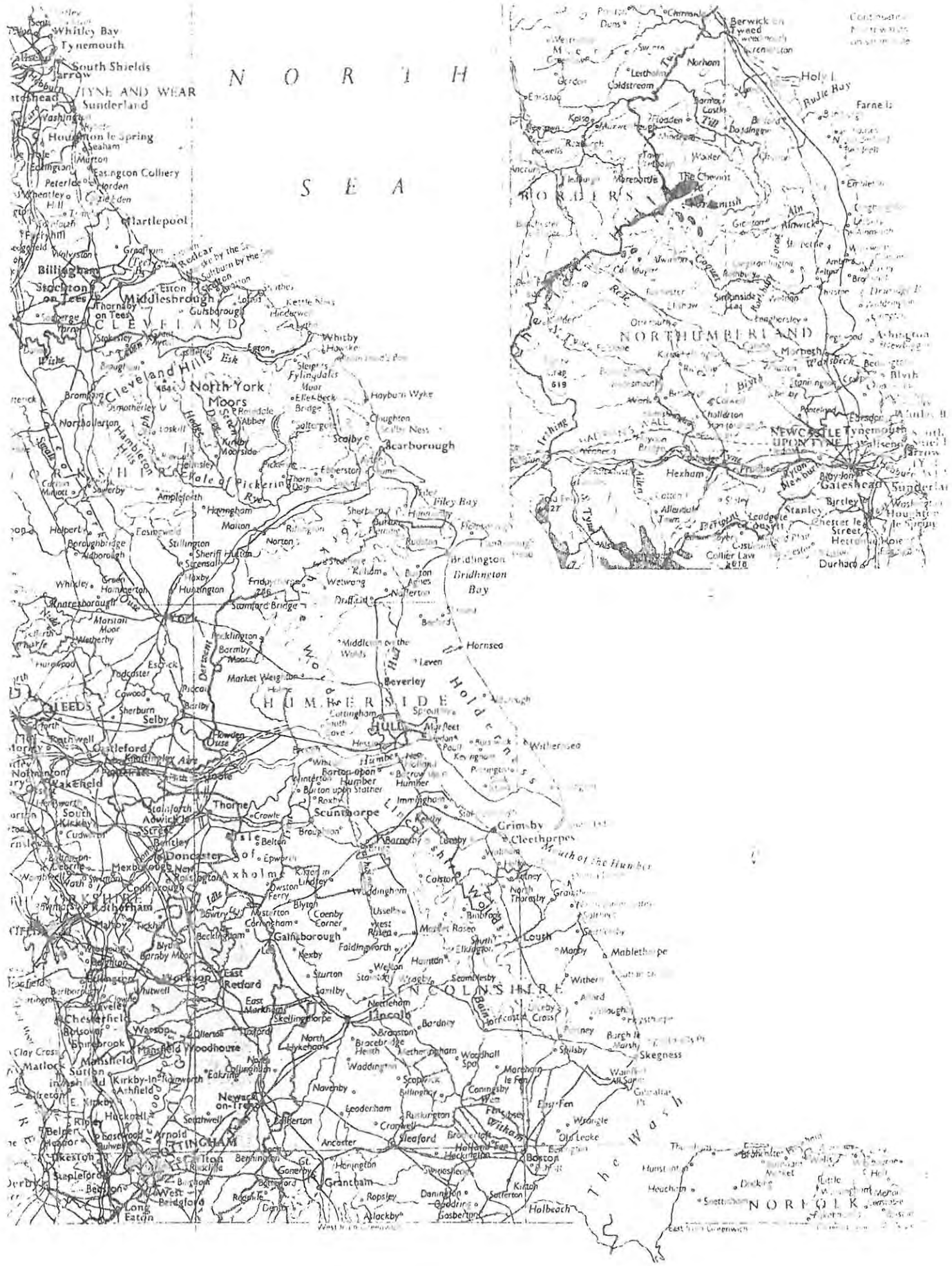
- A if 1 alone.
- B if 1 and 2 only.
- C if 1, 2 and 3.
- D if 2 and 3 only.
- E if 3 alone.

50. Which of the following (1 to 3) could describe the population characteristics of a country in North West Europe?

1. a high birth rate, a high death rate and little population growth
2. a high birth rate, a low death rate and rapid population growth
3. a low birth rate, a low death rate and little population growth

Answer

- A if 1 alone.
- B if 1 and 2 only.
- C if 1, 2 and 3.
- D if 2 and 3 only.
- E if 3 alone.



NORTHERN ENGLAND



- - - - - 1/4 inch = 1 mile
 - - - - - 1/2 inch = 1 mile

Joint 16 Examinations/1980
GEOGRAPHY/PAPER 1

For use with Questions 1 to 3

PHOTOGRAPH P



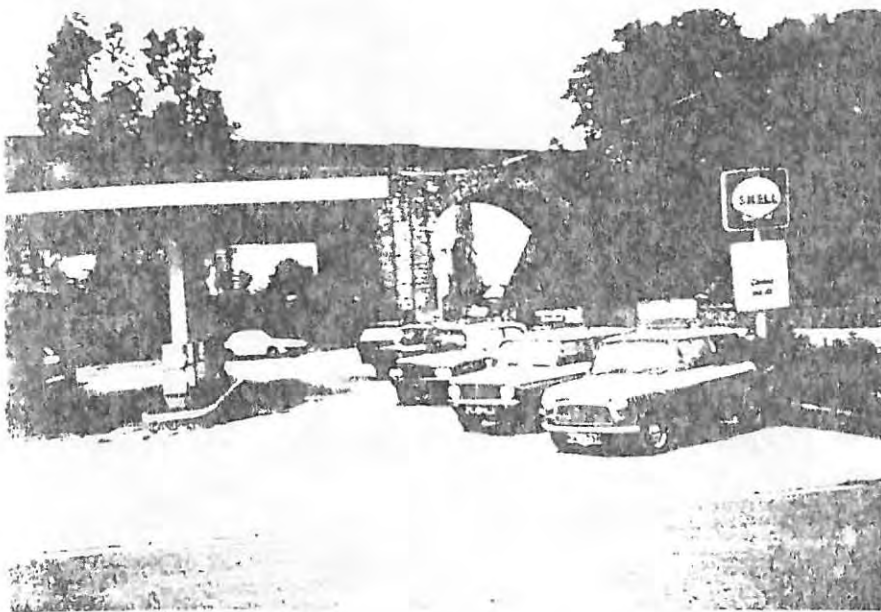
PHOTOGRAPH Q

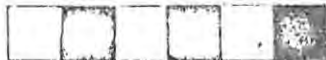


PHOTOGRAPH R



PHOTOGRAPH S

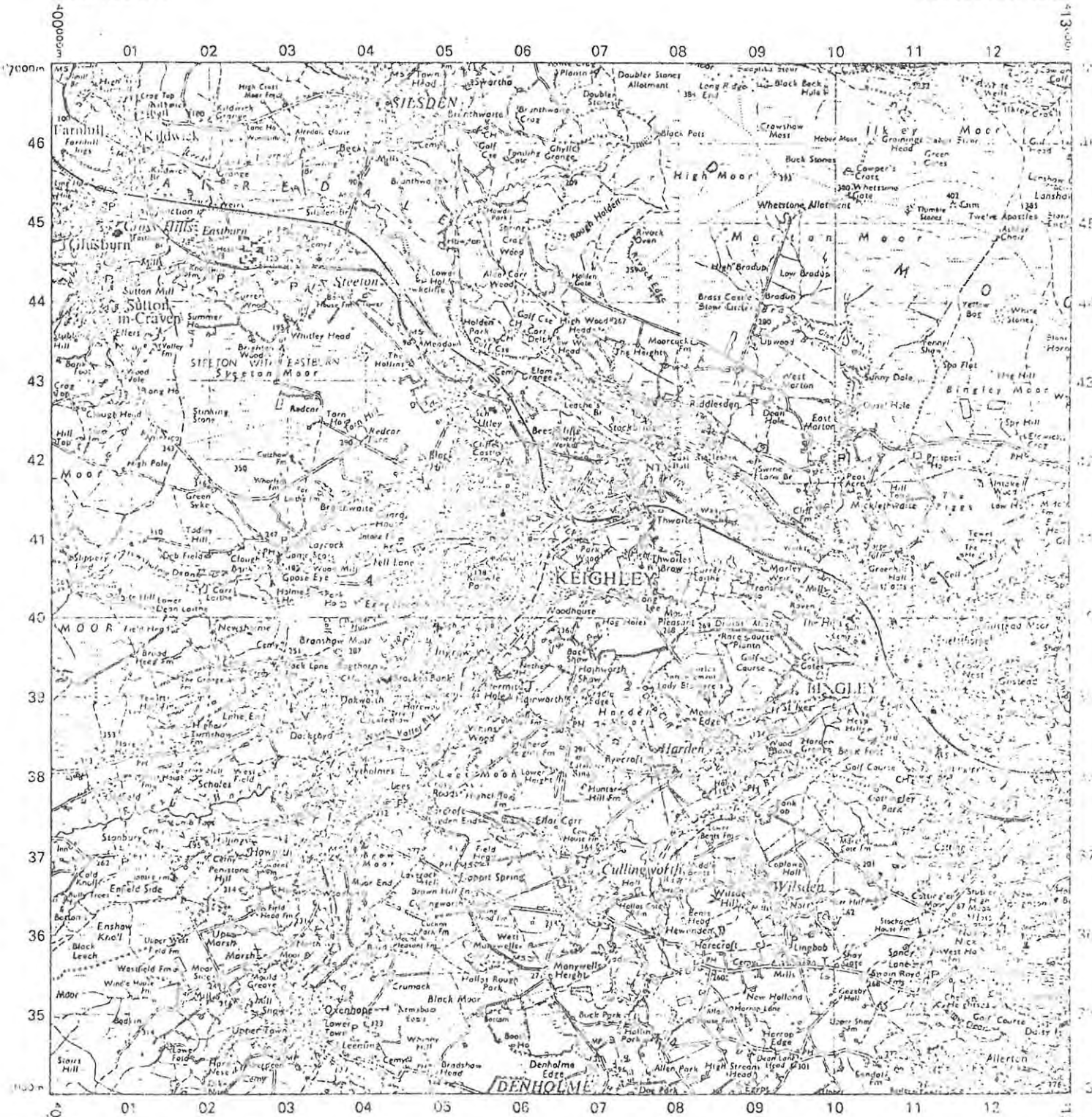




Each box should contain a colour if any are white the map is incomplete and should be returned to the investigator

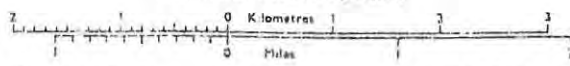
Extract No 373/104

1:50 000 First Series



1:50 000

2 centimetres to 1 kilometre (one inch to 2.54 kilometres)



Heights are to the nearest metre above mean sea level. Contour values are given to the nearest metre. The vertical interval is however 10 feet.

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Map and published by the Director General of the Ordnance Survey Southampton

Joint 16+
Examinations
1980

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Geography

Paper 2

Monday 19 May 1980
1.30pm to 3.45pm

Surname Other Names
Block Capitals

Name of School

Number of School Form

ATTEMPT ALL QUESTIONS

You may attempt the questions in any order.

Write your answers in the spaces provided.

If you need extra space use the supplementary sheets; if you do this, make sure that you show the number(s) of the question(s) you are answering.

The separate sheet of photographs is for Question 2.

The Ordnance Survey Map extract is for Question 7.

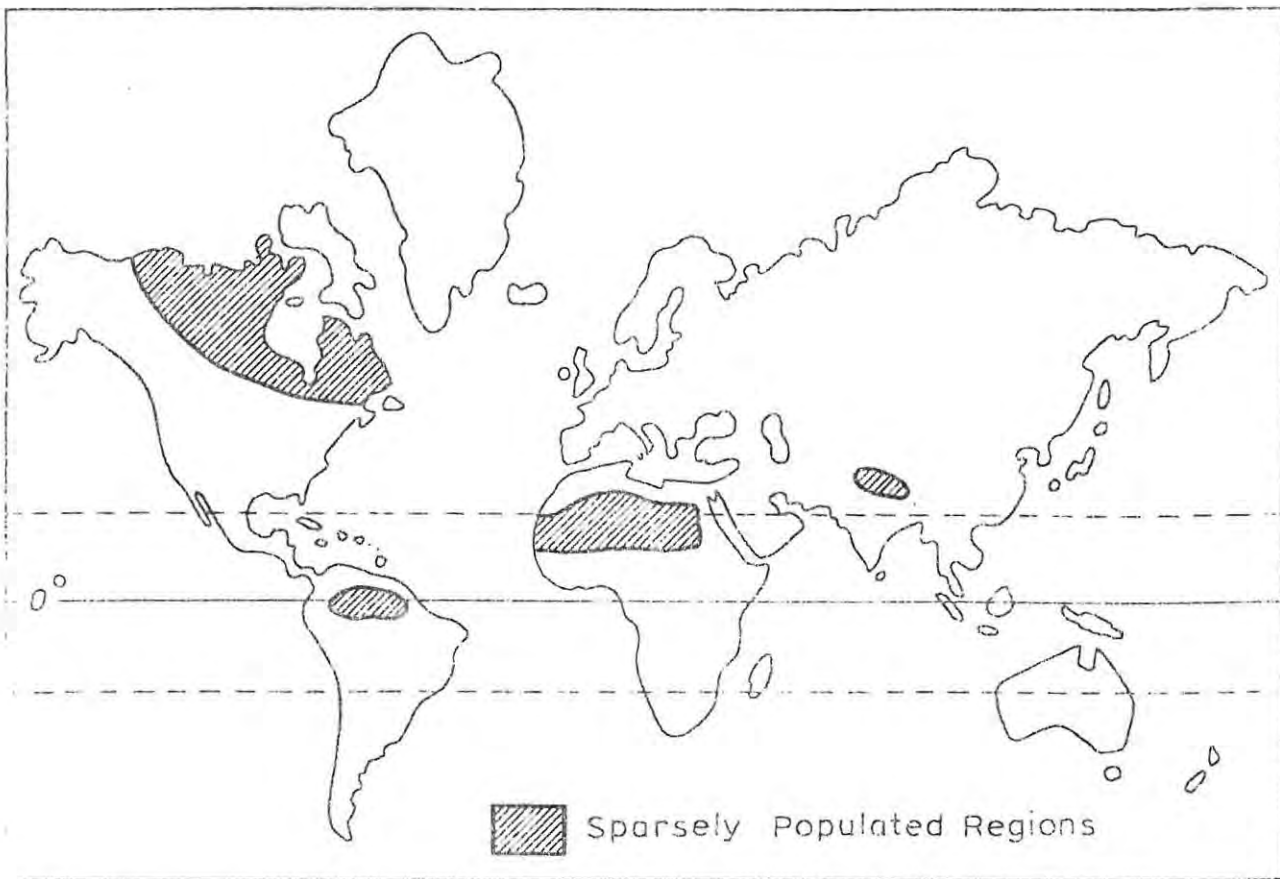
An atlas extract of Northern England is provided.

The marks allocated to each question are printed in the right hand margin.

For Examiner's use only	
1	.....
2	.....
3	.....
4	.....
5	.....
6	.....
7	.....
8	.....
9	.....
Total	

1 (16 marks)

Study the map below which shows some of the sparsely populated regions of the world.



(a) On the map, name the regions shaded. (2 marks)

(b) For **two** of the regions shaded on the map, describe three factors which hinder the growth of population density.

Region

Factor (i)

Factor (ii)

Factor (iii)

Region

Factor (i)

Factor (ii)

Factor (iii)

(6 marks)

(c) For a sparsely populated country or region you have studied (outside England, Wales and Scotland), describe and account for the ways of life that are found there.

[The following area contains faint, illegible text, likely bleed-through from the reverse side of the page.]

(8 marks)

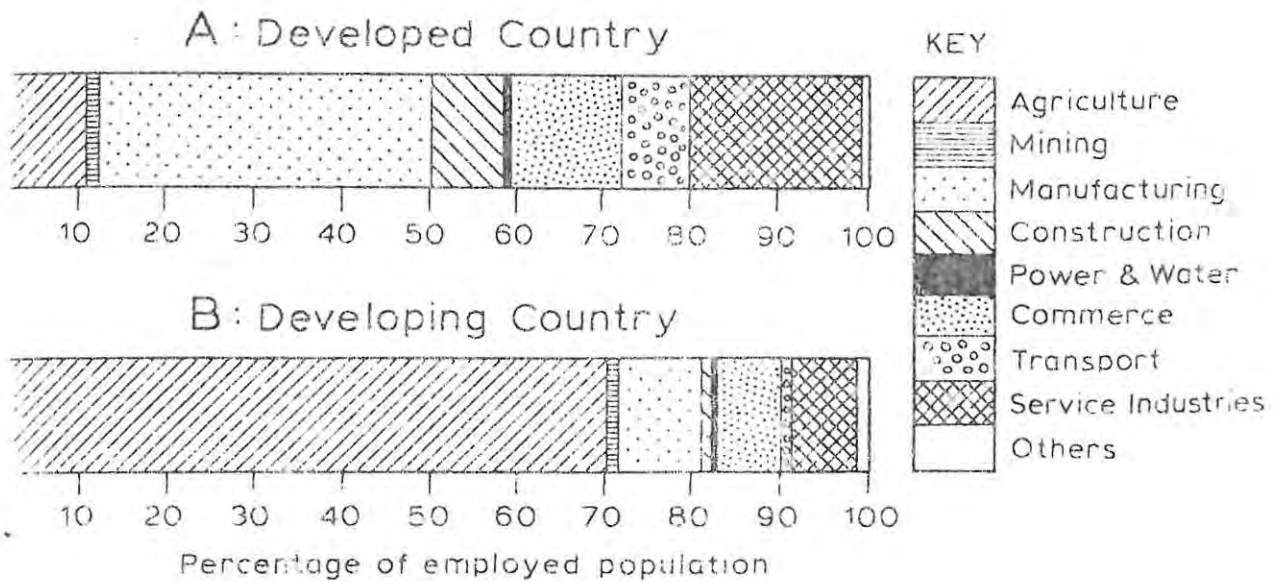
(d) For a DEVELOPED country or region you have studied (outside England, Wales and Scotland) describe and account for the importance of TWO of its towns or cities.

[Faint, illegible text for the answer area]

(7 marks)

3 (17 marks)

Study the bar graphs below which give information about a developed and a developing country.



(a) (i) What is manufacturing (secondary industry)?

(ii) Name and locate a manufacturing industry in a developed country or region. (Outside England, Wales and Scotland.)

Manufacturing industry

Location

Country or region

(iii) Name and locate a manufacturing industry in a developing country or region.

Manufacturing industry

Location

Country or region

(4 marks)

(b) Name **two** examples of service industries (sometimes called tertiary industry).

(i)

(ii)

(1 mark)

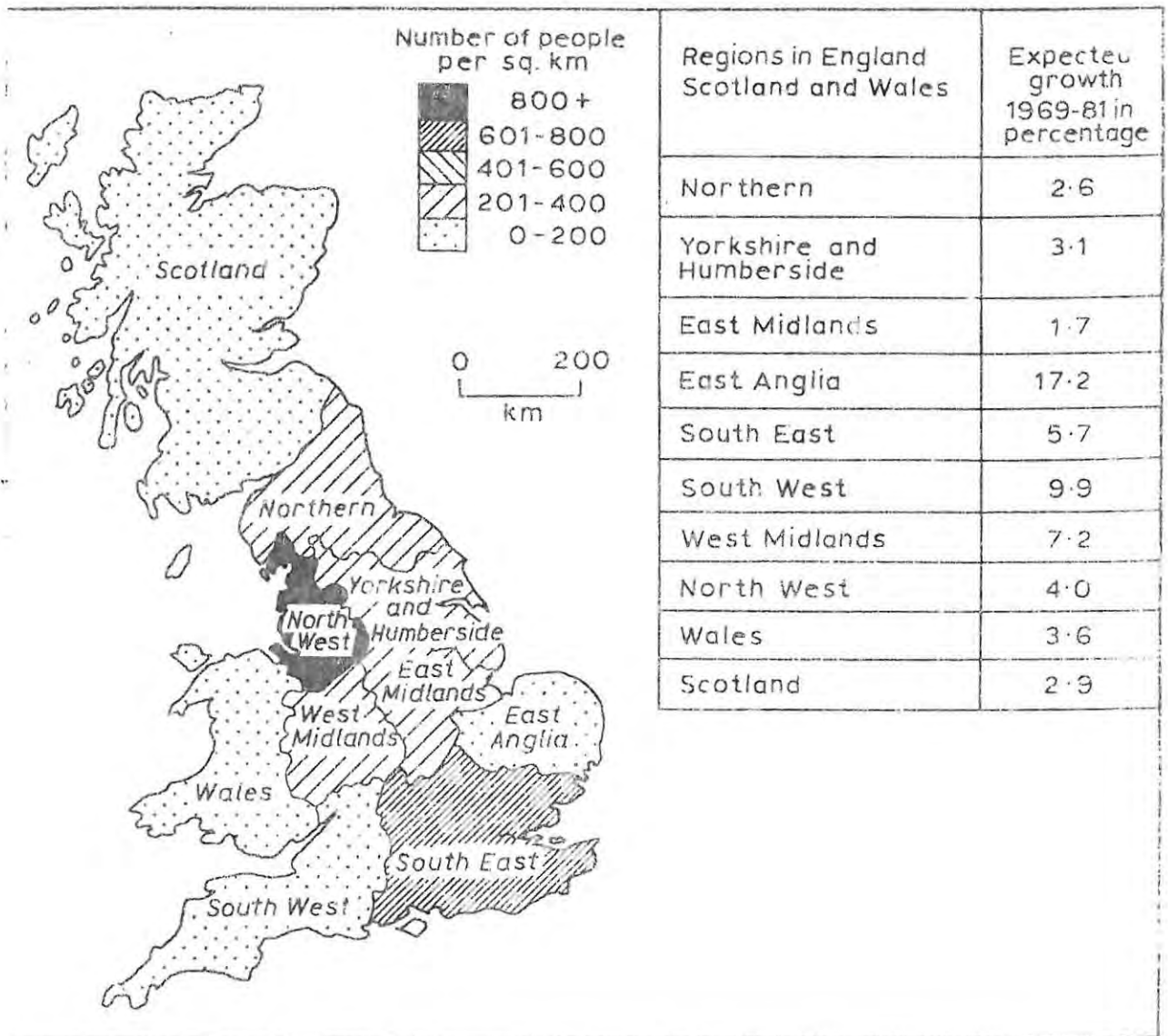
(c) Describe and suggest reasons for the differences between the two countries shown in the bar graphs on Page 6.

[Faint, illegible text from the bar graphs and student response area]

(12 marks)

4 (25 marks)

Study the map below which shows the population density of England, Wales and Scotland, together with the chart showing expected population growth.



(a) (i) Which **two** areas have the highest density of population?

(ii) For one of the areas named in (a) (i) above, state two factors which help to account for the high population density.

Area

Factor (i)

Factor (ii)

(4 marks)

(b) (i) Name an upland area with a low population density.

.....

(ii) Name a lowland area with a low population density.

.....

(iii) For one of the low density areas you have named in (b) above state two factors which help to explain such a low density.

Area

Factor (i)

.....

Factor (ii)

.....

(4 marks)

(c) (i) Name **three** areas where the population is growing rapidly.

.....

(ii) For one of the areas you have named in (c) (i) above state two factors which help to explain such a rapid growth.

Area

Factor (i)

.....

Factor (ii)

.....

(iii) Name **three** areas where the population is growing only slowly.

.....

(iv) For one of the areas named in (c) (iii) above state two factors which have hindered the growth of population.

Area

Factor (i)

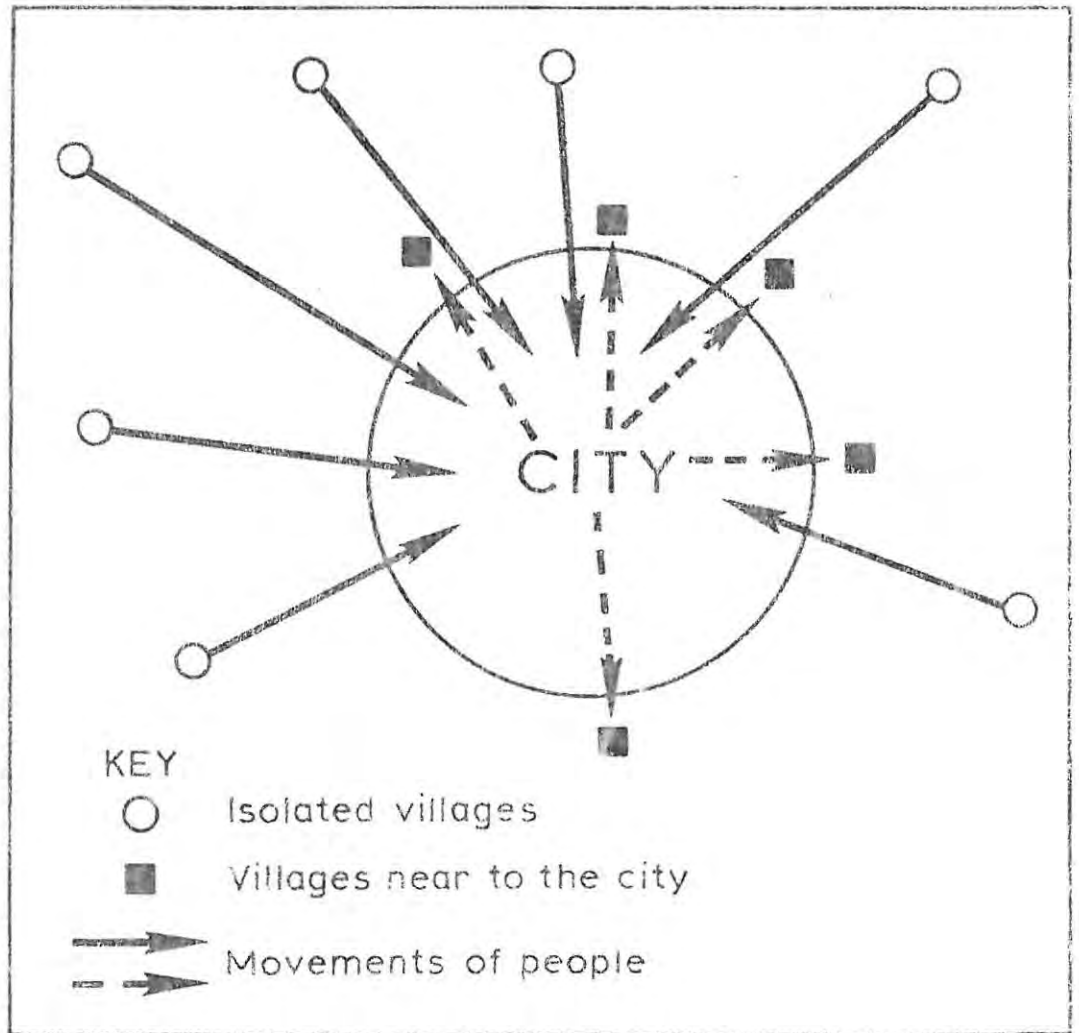
.....

Factor (ii)

.....

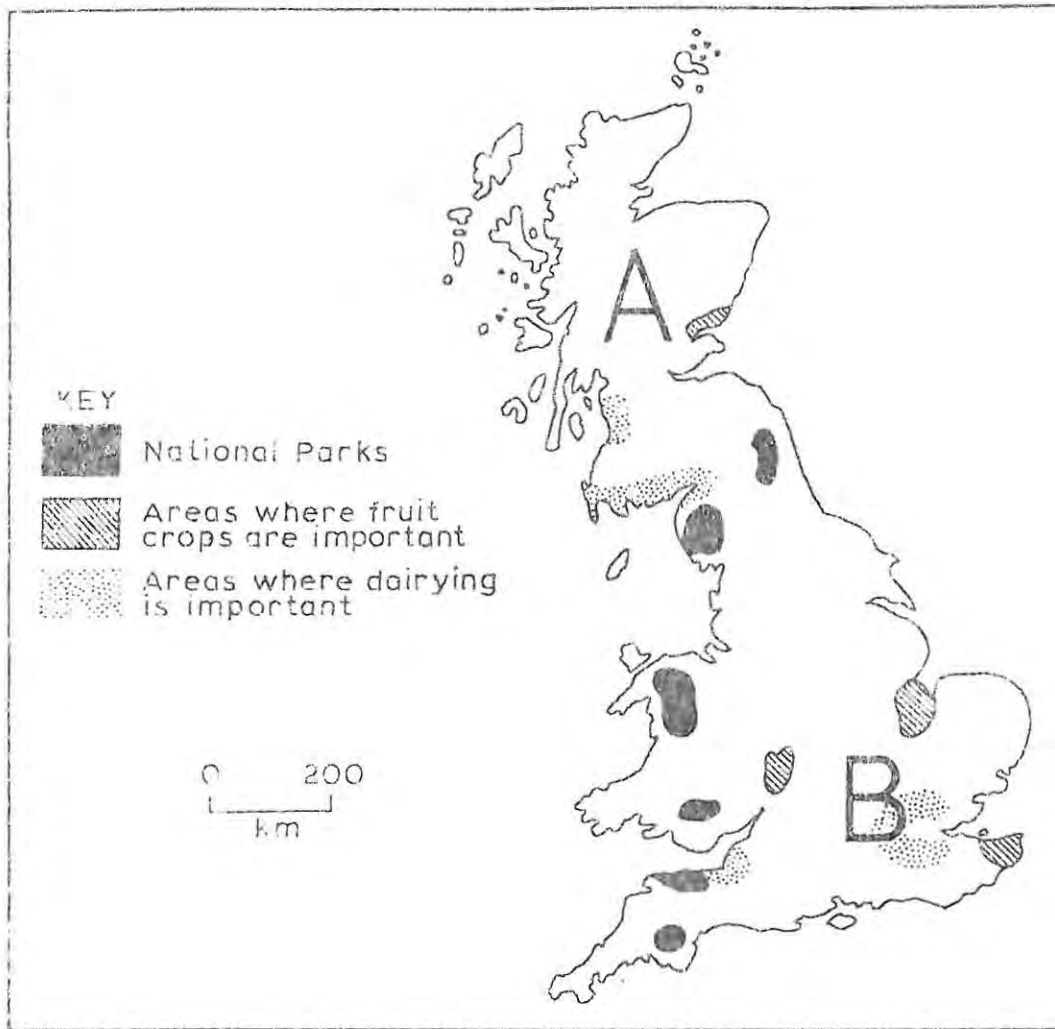
(10 marks)

(d) With the help of the diagram below describe and explain two types of population movement in Britain.



5 (17 marks)

The map below shows some aspects of farming and recreation in Britain.



(a) On the map name two of the national parks, two of the fruit growing areas and two of the areas important for dairying. (3 marks)

(b) (i) For one of the dairy farming areas shown on the map, describe two factors which favour its development.

Area

Factor (i)

Factor (ii)

(ii) For one of the fruit growing areas shown on the map, describe two factors which favour its development.

Area

Factor (i)

Factor (ii)

(4 marks)

(c) Study the figures on the chart below

YEAR	NUMBER OF FARM WORKERS IN BRITAIN
1971	245,659
1972	237,816
1973	232,958
1974	220,827
1975	210,773

(i) Describe the trend shown by these figures.

(ii) Give **three** reasons for the trend stated above.

(4 marks)

(d) There are no national parks in areas A and B on the map. Name a type of rural recreation zone that could be found in each area.

Area A

Area B

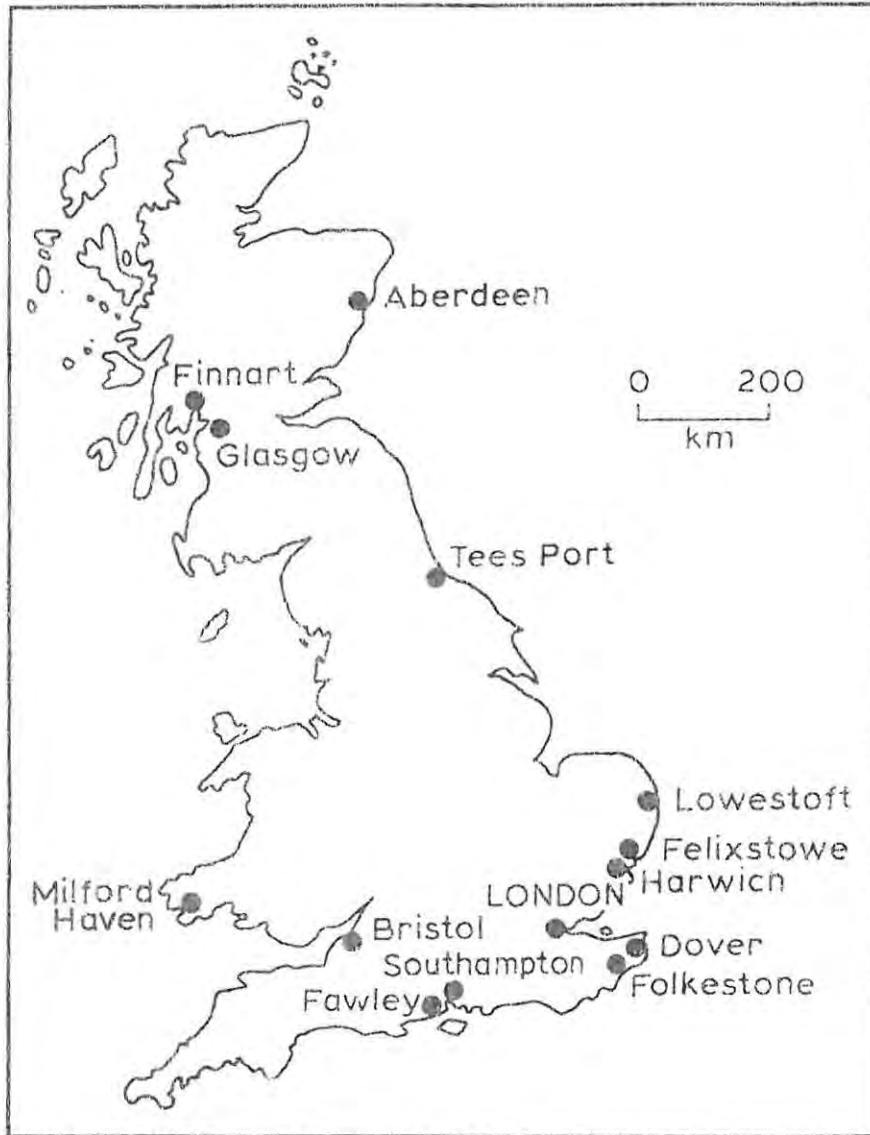
(2 marks)

- (e) With reference to examples you have studied, describe **four** problems that exist in national park areas.

(4 marks)

6 (18 marks)

The map below shows selected ports in Britain.



(a) From the ports shown on the map, name one different important example for each of the following:

(i) An oil terminal

(ii) A container port

(iii) A passenger port

(iv) A fishing port

(4 marks)

7 (15 marks)

Refer to the Ordnance Survey 1 : 50,000 map extract which shows the area around Keighley in the Pennine region of northern England.

(a) The following are types of settlement: isolated farm, hamlet, village, town and conurbation. Which of the above exists at each of the following references?

0540

021416

1240

090436

(2 marks)

(b) (i) What use has man made of the rivers in areas 0135, 0735 and 1241?

.....

(ii) State **two** advantages of this region for such a use.

.....
.....
.....
.....

(3 marks)

(c) (i) What type of industry would you expect to have been originally located in the mills at 099403 and 073413?

.....

(ii) State **two** advantages for the development of such an industry in the area.

.....
.....
.....

(iii) Give **two** reasons for the decline of the industry in recent years.

.....
.....
.....

(5 marks)

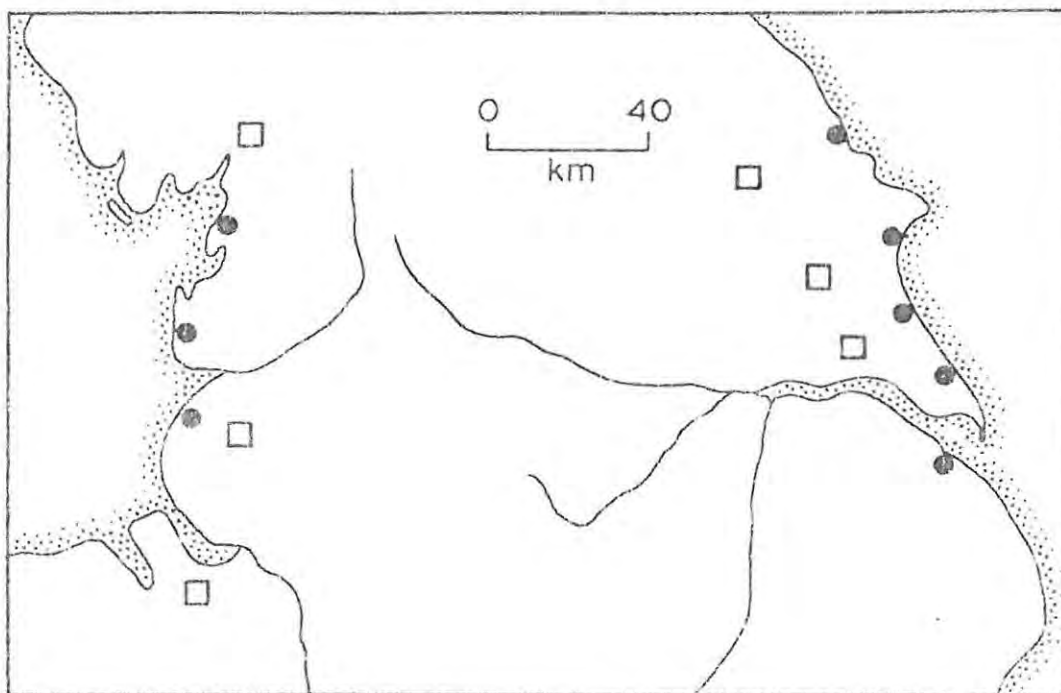
(d) Find Moorcock Farm at reference 082490. Describe and give reasons for the type of farming you would expect to find on this farm.



(5 marks)

9 (13 marks)

The map below shows some of the seaside resorts and market towns in northern England.



KEY

- Seaside Resorts
- Market Towns

(a) On the map, name three seaside resorts and three market towns shown. (3 marks)

(b) For any market town in northern England, name the area it serves and name two functions of that town.

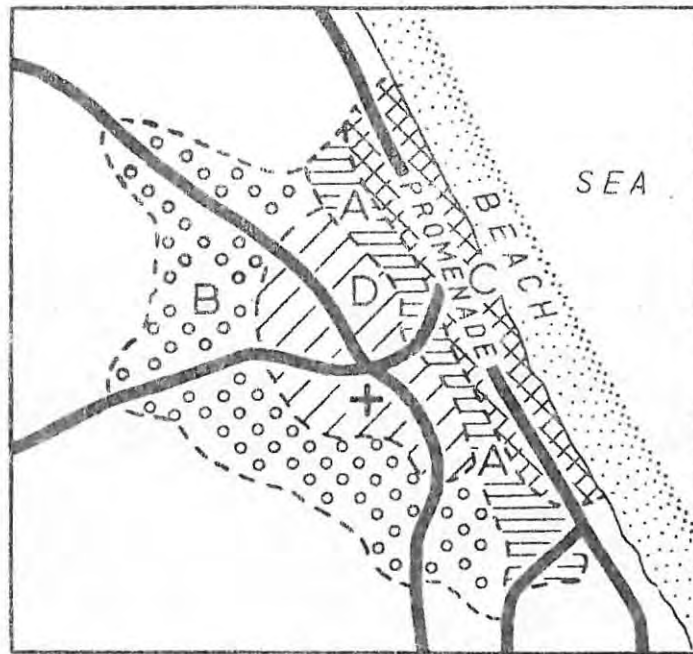
Market town _____ Area served.....

Function (i) _____

Function (ii) _____

(3 marks)

(c) Study the plan which shows the general layout of a seaside resort.



KEY
 Main roads **+** Town Hall

(i) Which zone (A, B, C or D) is the entertainment zone ?

.....

(ii) Name **two** features of the zone named in (i) above.

.....

.....

(iii) Which zone consists of the accommodation area for the tourists ?

.....

(iv) Name **two** types of accommodation you would expect to find in such a zone.

.....

.....

(v) Which zone forms the CBD of the resort ?

.....

(7 marks)

Joint 16 Examinations/1980
GEOGRAPHY/Paper 2

or use with Question 2

Photograph A



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Photograph B



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Geog. 1

209

UNIVERSITY OF LONDON

General Certificate of Education Examination

JANUARY 1980

ORDINARY LEVEL

Subject Title	Geography
Syllabus	Syllabus A
Paper No.	Paper 1
Subject Code No.	209

Two hours

Answer Question 1 and TWO other questions.

Question 1 carries 15%, the others 12½% each, of the total marks for the examination.

Questions 2 and 3 on fieldwork should be answered only by those candidates who have carried out course of field studies.

The map for Question 6, if used, must be tied inside your answer-book opposite the written part of the answer.

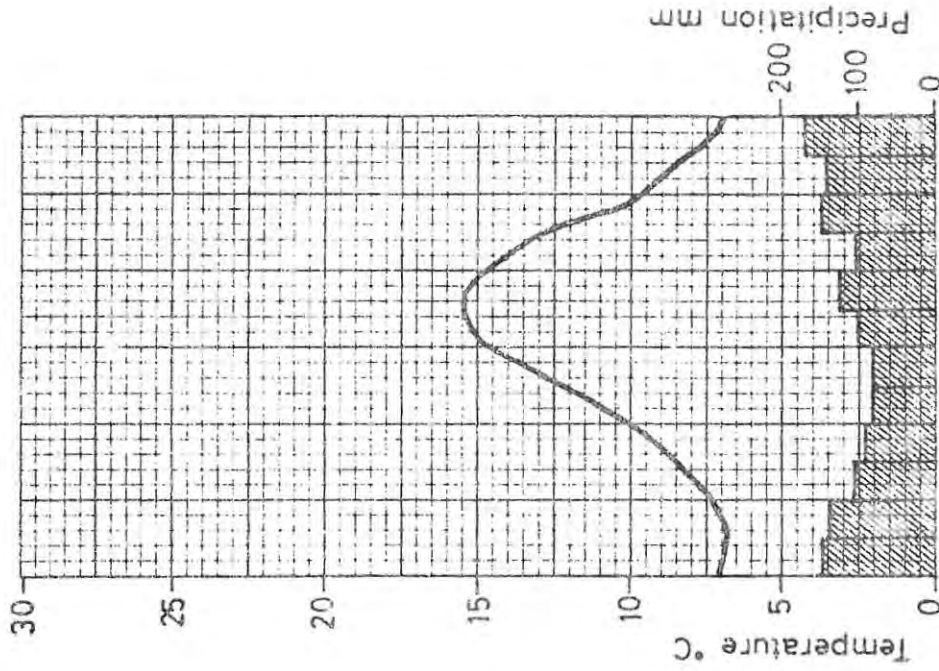
You are reminded of the necessity for good English and orderly presentation in your answers.

1. Study the 1:50 000 Ordnance Survey map extract (Consett/Stanley) provided and in your answer-book:
 - (a) Draw a sketch-map on half the original scale and on it mark:
 - (i) two named rivers;
 - (ii) two large upland areas over 152 metres, shading each area;
 - (iii) two large settlements;
 - (iv) one main road and one multiple track railway.
 Add a key to your map.
 - (b) Describe the physical features of *one* of the upland areas shaded on your map.
 - (c) Compare Consett (including Castleside, Temeletown and Leadgate) and Stanley under the headings (i) size and shape, (ii) site and situation, and (iii) functions.

2. Do not attempt this question unless you have undertaken field studies in physical geography.
 - (a) Draw a simple sketch-map to locate and name an area in which you have carried out fieldwork in connection with *one* of the following:
 - (i) the measurement of slopes;
 - (ii) river processes and associated landforms;
 - (iii) soil types;
 - (iv) natural vegetation studies;
 - (v) weather studies.
 - (b) Describe the equipment and methods used in the fieldwork exercise.
 - (c) Using maps and diagrams wherever possible, state clearly the results of your investigation and the way in which they were recorded.

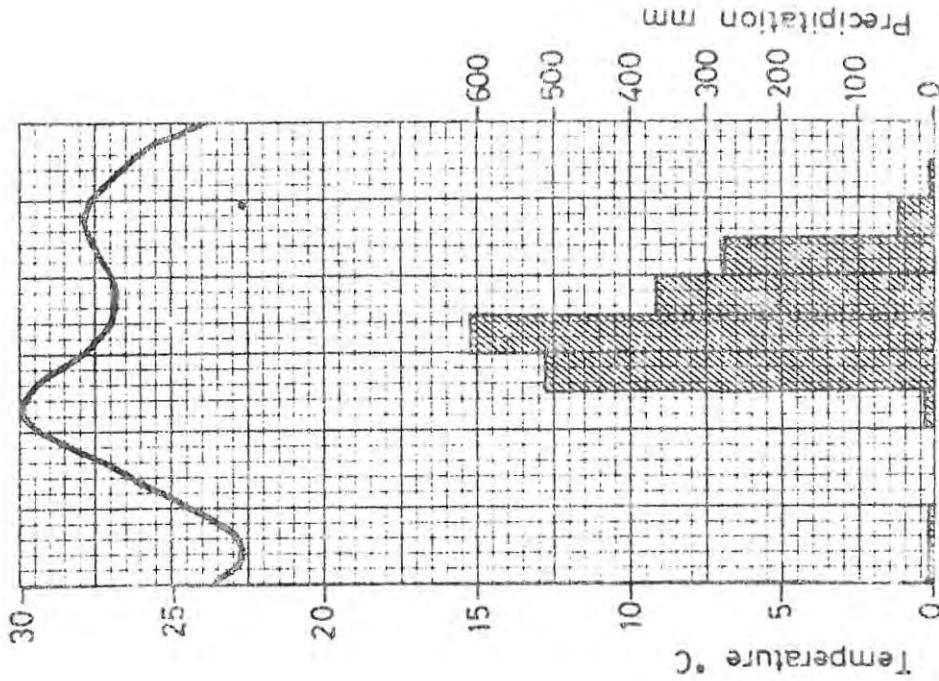
Turn over

STATION B (Altitude 10m)



Total precipitation : 1415 mm

STATION A (Altitude 10m)



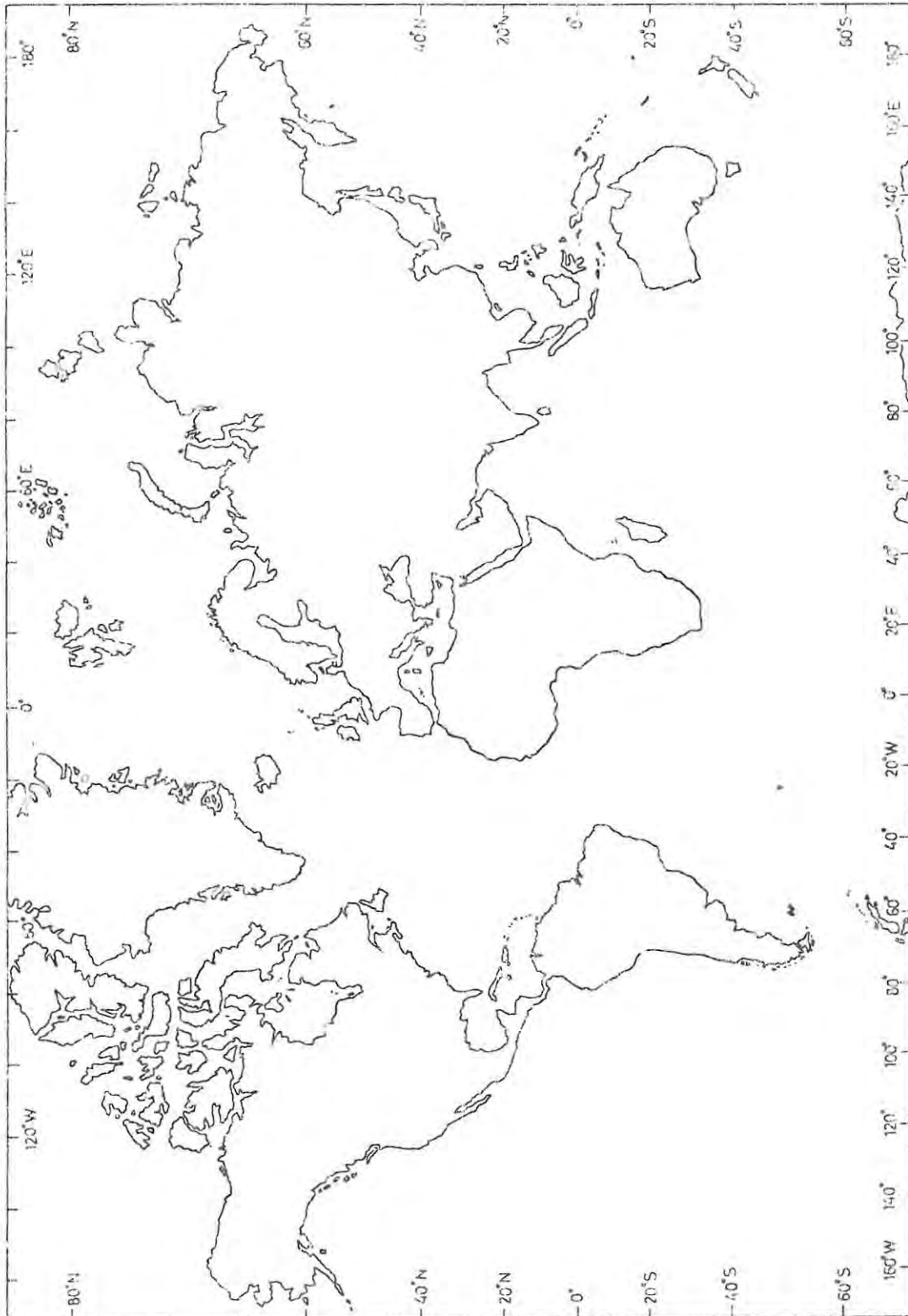
Total precipitation : 1840 mm

Graphs for Question 8

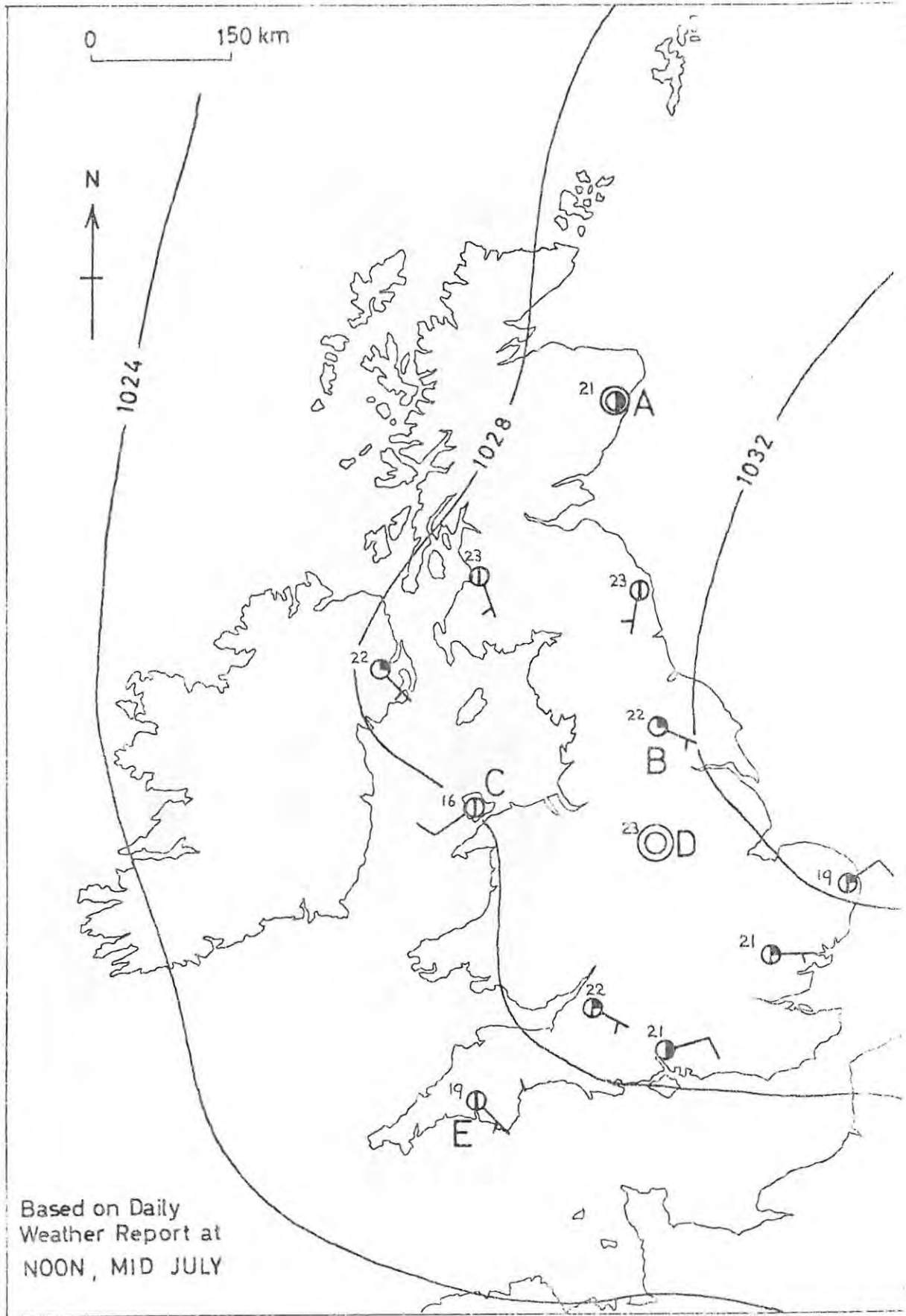
3. Do not attempt this question unless you have undertaken field studies in human geography. With the aid of maps, diagrams and sketches where possible, give a full account of any one piece of geographical fieldwork concerned with *one* of the following:
- central business district;
 - industrial estate;
 - shopping precinct;
 - types of housing;
 - traffic movements;
 - air and water pollution.
- State the conclusions you reached as a result of your fieldwork.
-
4. Explain *three* of the following, using maps and diagrams where appropriate.
- Los Angeles is approximately 33° N and 118° W and Sydney is approximately 33° S and 151° E.
 - 24 hours of darkness are experienced within the Arctic Circle at certain times of the year.
 - Some countries have time zones.
 - A day is either gained or lost when crossing the International Date Line.
 - At the Equator there is little variation in the seasons of the year or in the length of daylight.
-
5. Discuss the characteristics and formation of *two* of the following:
- a sandy beach with dunes;
 - a gorge with a waterfall;
 - a rocky headland with cliffs;
 - a dry valley in a chalk upland;
 - a group of corrie basins separated by arêtes.
- Illustrate your answer by references to actual examples.
-
6. Study the photographs A and B of two major types of natural vegetation.
- On the world map provided shade and name a large area where each type of vegetation occurs. Give a key to your map.
 - In your answer-book:
 - Using photographic evidence only, describe and account for the main features of each vegetation type.
 - For *one* of the vegetation areas, state the main characteristics of the type of soil you would expect to find associated with this vegetation.
-
7. Study the weather maps on the accompanying sheet which show conditions on two days at different times of the year. Select *three* of the weather stations A, B, C, D and E and for each of these three describe and account for the weather conditions experienced on each of the days.
-
8. Study the graphs opposite of two different climatic stations, A and B.
- State how the temperature and rainfall figures for each month are compiled.
 - Explain the distribution of precipitation at each station.
 - For each station, explain the temperature variations shown.
 - Suggest a location where each type of climate may be experienced.

Centre Number

Candidate Number



Map for Question 6

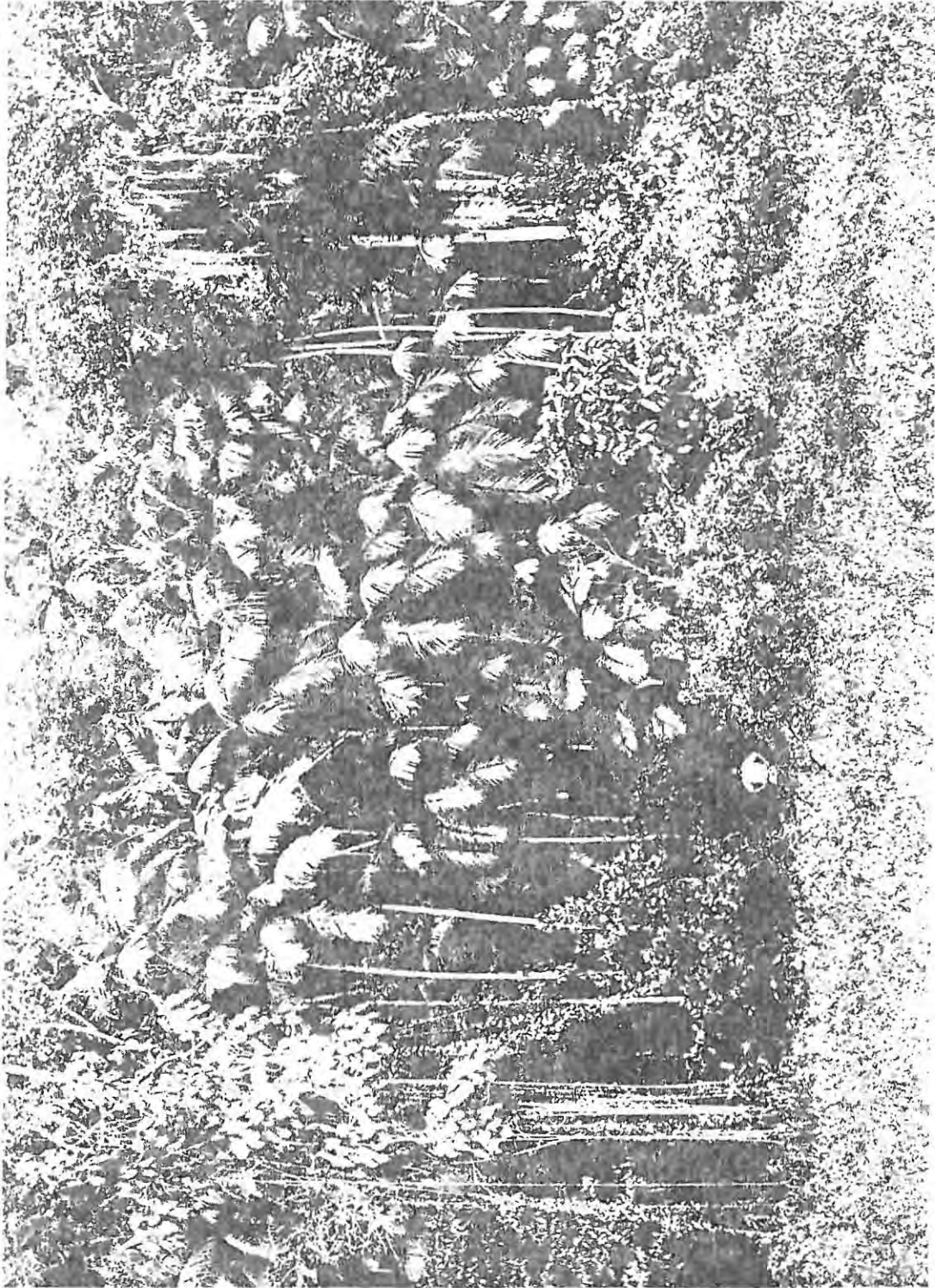


Based on Daily
Weather Report at
NOON, MID JULY



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Photograph A for Question 6



Reproduced by permission of Aerofibris Ltd.

Photograph B for Question 6

UNIVERSITY OF LONDON
General Certificate of Education Examination

JANUARY 1980

ORDINARY LEVEL

Subject Title	Geography
Syllabus	Syllabus A
Paper No.	Paper 2
Subject Code No.	209

Two and a quarter hours

Answer **FOUR** questions, choosing at least **ONE** from each Section.

Each question carries **15%** of the total marks for the examination.

If used, the accompanying maps must be tied inside your answer-book opposite the written part of the answer.

You are reminded of the necessity for good English and orderly presentation in your answers.

Section A. The Developed World

Unless otherwise stated in the questions, answers in this section must be confined to examples chosen from the following areas:

- A British Isles and Western Europe
- B North America
- C Australia, New Zealand and Japan
- D U.S.S.R. and the rest of Europe

1. EITHER:

The map on the accompanying sheet shows certain geographical features of an area in which it is proposed to construct a large integrated iron and steel plant. Six possible sites near existing towns A, B, C, D, E and F have been put forward for consideration. Study the map carefully.

- (a) State which of the proposed sites would
- (i) have local iron ore but no local coal,
 - (ii) have local coal but no local iron ore,
 - (iii) be located at almost equal distances by rail from iron ore and coal,
 - (iv) be the most likely to meet with strong objections from conservationists,
 - (v) be near a large expanse of flat and, at present, badly drained land.
- (b) Stating your reasons clearly and basing your answer on iron and steel plants in the developed world which you have studied, explain which of the six sites would provide the best location for the proposed plant. (Information may be added to the map to illustrate your answer.)

OR:

- (a) Name and locate precisely *one* example of each of the following: an integrated iron and steel plant; a petro-chemical works; an area specializing in textile manufacture; an estuary where heavy shipbuilding is carried out.
- (b) Choose *two* of the examples you have named in (a) and explain (i) how geographical conditions have favoured the locating of the industry, and (ii) the changes which have taken place in the industry over the last 25 years.

Turn over

2. A feature of the late 1970s was the energy crisis.
- What do you understand by the term 'energy crisis'?
 - For *one* area of the developed world which you have studied, locate the principal resources of fossil fuels.
 - State the arguments for and against the expansion of nuclear power production.
 - Briefly describe *two* alternatives to the use of fossil fuels and nuclear energy.
-
3. Study the map provided for Question 1.
- Which of the towns labelled A to G on the map (i) is the focus of the greatest number of land communications, (ii) is the most poorly linked to other places by road, (iii) has the deepest water harbour, and (iv) has no rail communication?
 - For any area of the developed world, describe and account for the network of *one* of the following:
motorways; railways; inland waterways; internal air routes.
-
4. (a) By reference to specific examples from the developed world, define *three* of the following: conurbation; market centre; primate city; central business district; ribbon development; new town.
- (b) Account for the characteristics of the examples you have chosen in (a).
-
5. It has been said that agriculture in the developed world is influenced more by economic factors than by the physical environment.
- Choose *three* of the following types of agricultural region:
- a mountainous area;
 - farmland on the outskirts of a large city;
 - a region where extensive arable farming is practised;
 - a region where reclamation has taken place.
- For each type of agricultural region you have chosen and using specific examples as a basis for your answers, (a) describe the characteristics of the farming, and (b) show how physical and economic factors have influenced the type of agriculture.
-

Section B. The Less Developed World

Unless otherwise stated in the questions, answers in this section must be confined to examples chosen from the following areas:

- E Africa and the Middle East
- F Central and South America
- G South and South-East Asia
- H China

6. (a) Locate and name *one* important mining area (other than for fuels) in any part of the less developed world. Name the mineral resources which are mined in this area.
- (b) With the aid of a sketch-map, describe the routes and methods used to transport the resources named in (a) to their markets.
- (c) What problems, both physical and economic, occur in the mining and transport of these resources?
-

7. (a) Define the terms 'birth rate', 'death rate' and 'natural population increase'.
- (b) Why is the population in most countries of the less developed world increasing at a greater rate than in the developed world?
- (c) For any named areas of the less developed world, outline the major problems resulting from the great increase in population.
- (d) Briefly describe *three* possible solutions to the problems caused by rapidly increasing populations.
-

8. By reference in each case to named areas of the less developed world, explain *two* of the following.
- (i) the differences between subsistence agriculture and plantation agriculture;
- (ii) the causes of soil erosion and the methods of soil conservation;
- (iii) the differences between village industries and multi-national manufacturing companies;
- (iv) the advantages and disadvantages of developing a tourist industry as one method of improving the economy of a country.
-

9. *EITHER:*

- (a) Draw a large, clearly labelled sketch-map to show the location and characteristics of *one* multi-purpose river development in the less developed world.
- (b) Describe (i) the problems that had to be overcome during the construction of the scheme and (ii) the contribution that the scheme has made to the economy of the country concerned.

OR:

- (a) Draw a large, clearly labelled sketch-map to show the location of *two* of the following in the less developed world:
- (i) an area of heavy manufacturing industry;
- (ii) a region where forestry makes a large contribution to the economy;
- (iii) an area of land where new methods of farming are being introduced.
- (b) Describe the characteristics and development of each of your chosen examples.
-

10. *EITHER:*

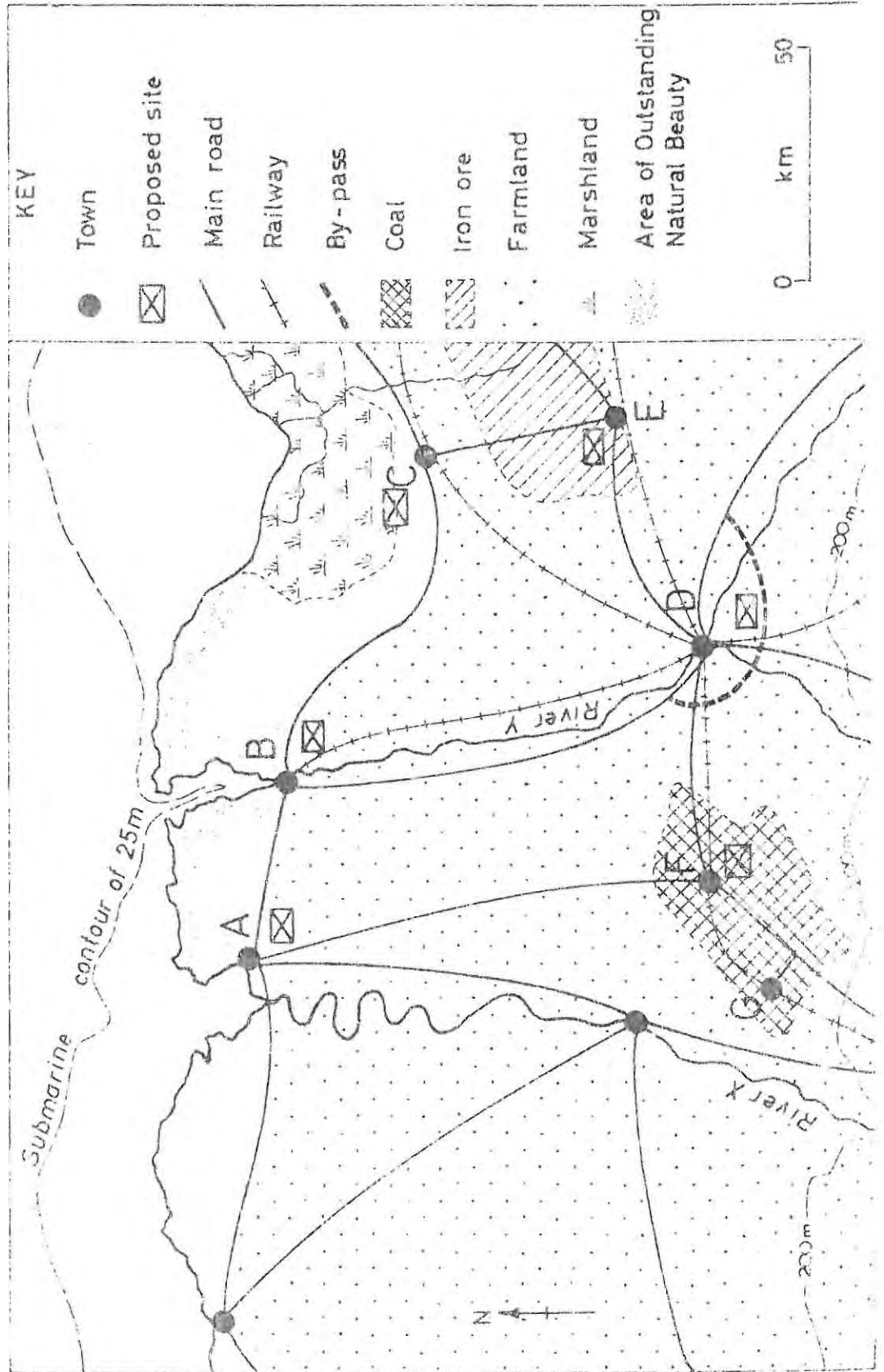
If you are a candidate living in the less developed world and had the opportunity of showing a party of school children from the developed world around your country, locate and describe *five* different places to which you would take your visitors to demonstrate the characteristics and problems of the less developed world.

OR:

If you are a candidate living in the developed world and had the opportunity of showing a party of school children from the less developed world around your country, locate and describe *five* different places to which you would take your visitors to demonstrate the characteristics and problems of the developed world.

Centre Number

Candidate Number

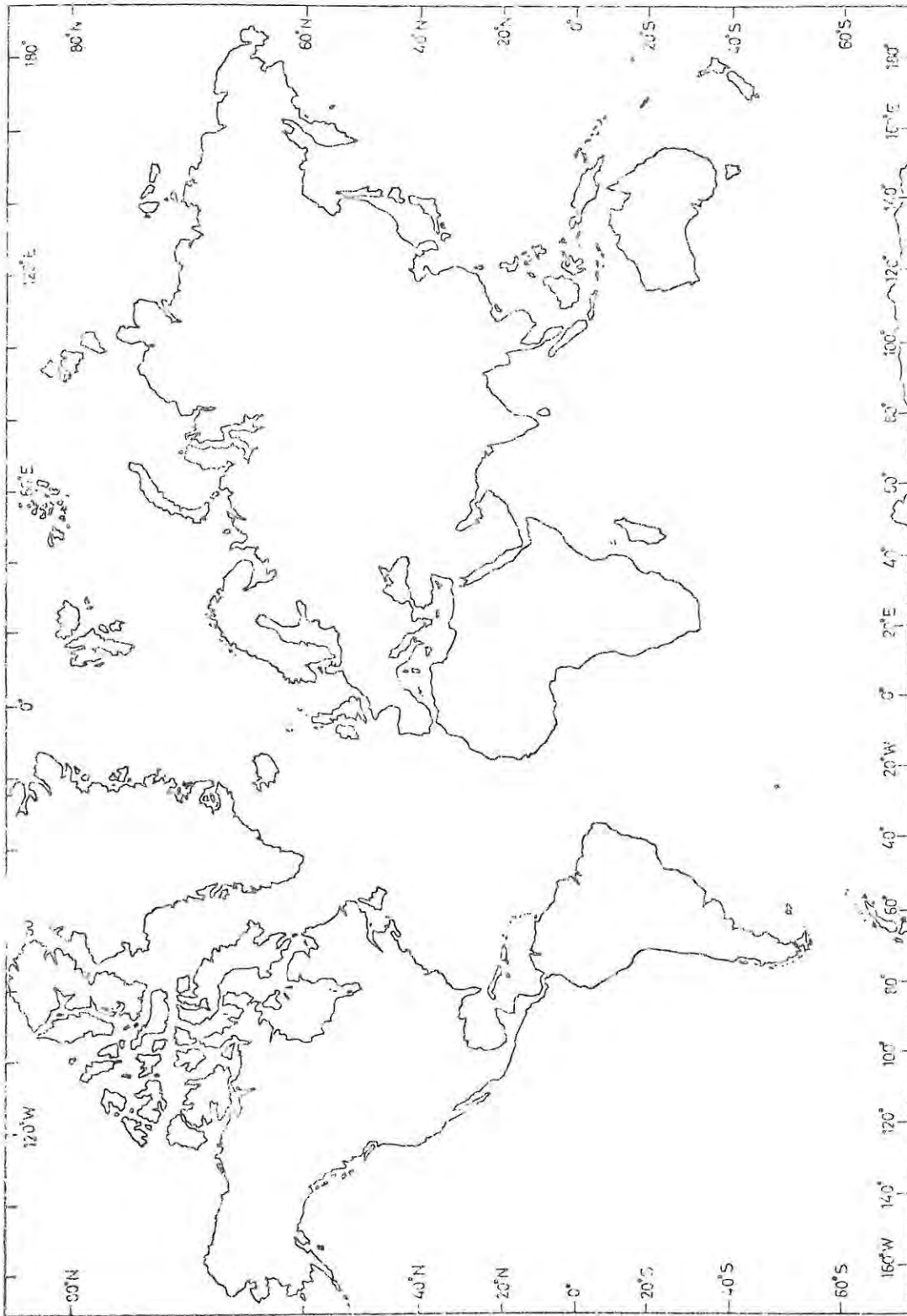


Map for Questions 1 and 3

746

Centre Number

Candidate Number



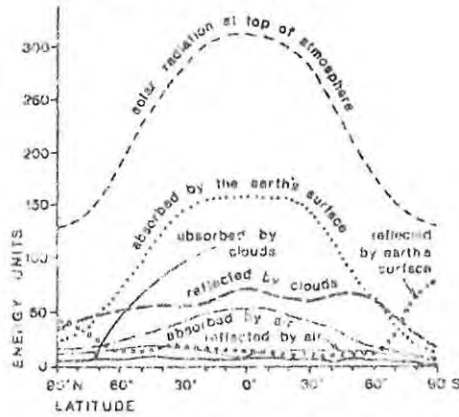
World Outline Map

SECTION A THE CORE

Part 1 Short Answers — 40 marks

Students must answer ALL questions in this part.

1.



LATITUDINAL VARIATIONS IN THE AVERAGE ANNUAL DISPOSITION OF SOLAR RADIATION

(a) The graph suggests that the albedo of the earth's surface is highest at: (tick the appropriate box)

- | | |
|---|---|
| <input type="checkbox"/> Equator. | <input type="checkbox"/> Tropic of Cancer. |
| <input type="checkbox"/> South Pole. | <input type="checkbox"/> North Pole. |
| <input type="checkbox"/> Tropic of Capricorn. | <input type="checkbox"/> Not possible to say. |

(1 mark)

(b) What are the reasons for the latitudinal variation in solar radiation *absorbed* by the earth's surface?

.....

.....

.....

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(2 marks)

(c) Indicate any *two* means by which this latitudinal imbalance of energy is equalised or reduced.

.....

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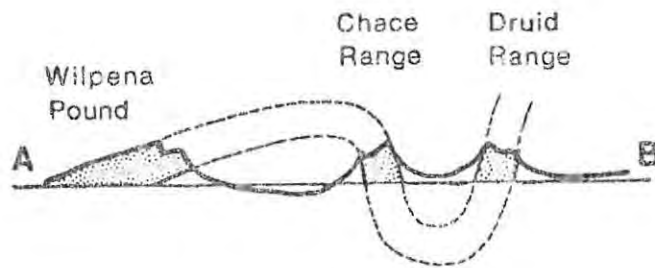
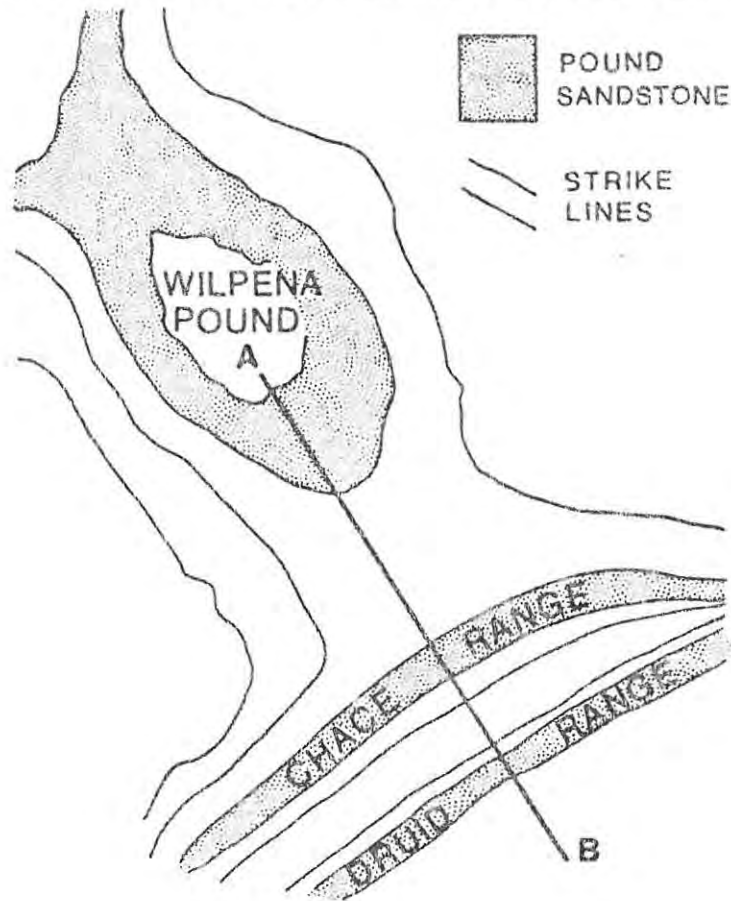
.....

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.....

(2 marks)

2. (a) The diagram below is a map and cross-section of part of the area near Wilpena Pound.



- (i) On the map place an X where relief inversion occurred. (1 mark)
- (ii) Explain why relief inversion has occurred.

.....

.....

.....

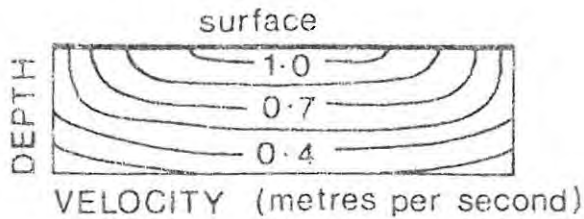
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(2 marks)

- (b) The diagram below shows the distribution of velocity in a transverse cross-section of a river channel.



- (i) Briefly describe the distribution of velocity

.....

(1 mark)

- (ii) Briefly explain the cause of this distribution.

.....

(1 mark)

- (c) The table below shows the cost structures of four firms, each cost item being expressed as a percentage of total costs.

	Firm A	Firm B	Firm C	Firm D
Raw Materials	50	25	20	48
Labour	10	42	20	12
Capital	10	11	30	15
Energy	7	10	15	10
Services	13	8	5	8
Other	10	4	10	7

- (i) Consider only the information contained within the table and assume that each firm is seeking a least-cost location. Which of the firms would most likely *not* be tied to any *particular* location factor?

(1 mark)

- (ii) However, the cost structure of a firm is not the only factor which is important. What other essential information about the six cost factors listed is required in order to determine the least-cost location?

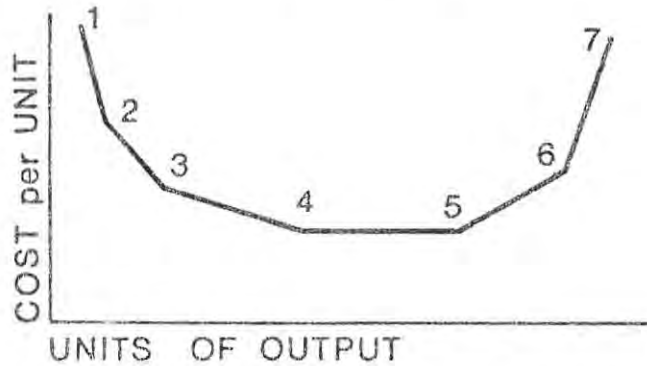
(1 mark)

(b) Define what is meant by "internal economies of scale".

.....
.....
.....

(2 marks)

(c) The graph below shows the relationship between output and costs for a firm.



(i) Indicate (by placing a tick in the appropriate box below) at which point on the graph scale economies are exhausted.

1	<input type="checkbox"/>	4	<input type="checkbox"/>
2	<input type="checkbox"/>	5	<input type="checkbox"/>
3	<input type="checkbox"/>	6	<input type="checkbox"/>
		7	<input type="checkbox"/>

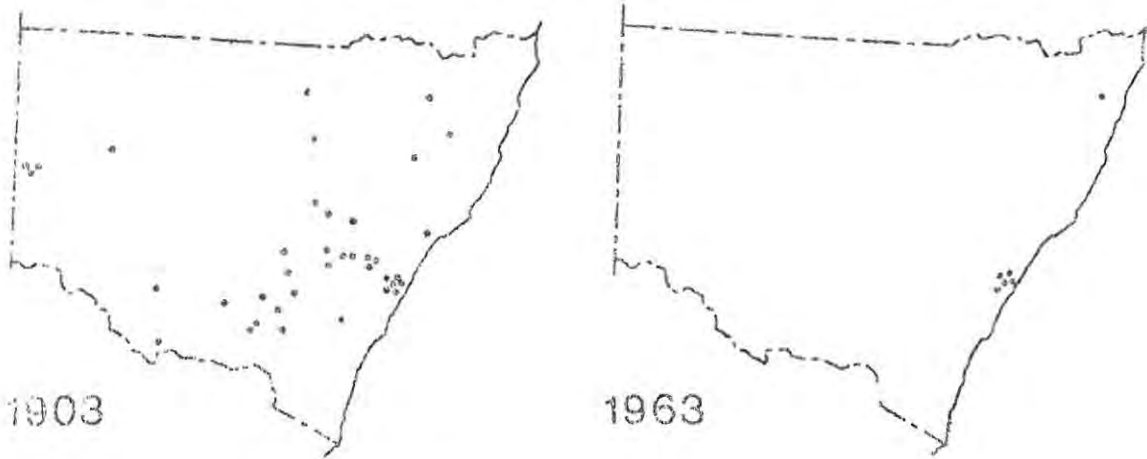
(1 mark)

(ii) Indicate (by placing a tick in the appropriate box below) at which point on the graph diseconomies of scale set in.

1	<input type="checkbox"/>	4	<input type="checkbox"/>
2	<input type="checkbox"/>	5	<input type="checkbox"/>
3	<input type="checkbox"/>	6	<input type="checkbox"/>
		7	<input type="checkbox"/>

(1 mark)

(d) The maps below show the locations of breweries in New South Wales in 1903 and 1963.



(i) Briefly compare the distributions of breweries shown on the two maps.

.....

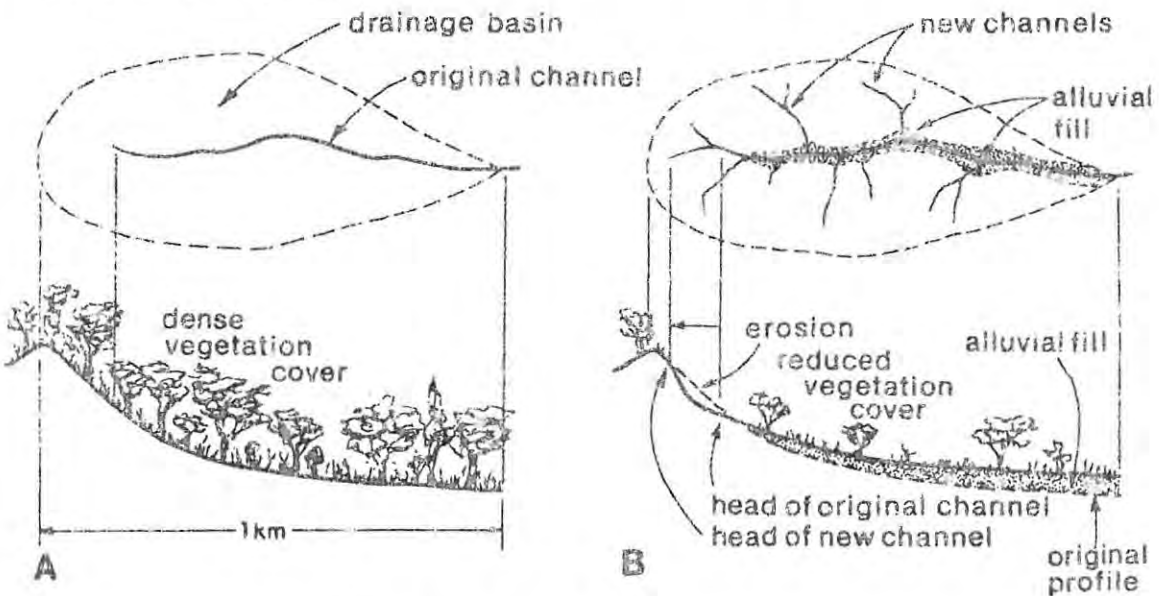
 (1 mark)

(ii) Suggest *three* reasons for the changed distribution.

.....

 (3 marks)

4. Part A of the figure below shows the plan and profile of a small densely vegetated drainage basin in the Mt. Lofty Ranges, South Australia. Part B shows the same drainage basin after partial clearance of the vegetation.



(a) Briefly explain three changes which have occurred as a result of the vegetation clearance.

- (i)
-
- (ii)
-
- (iii)
-

(3 marks)

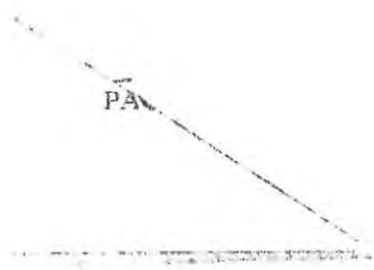
(b) The changes in stream pattern and profile developed as a result of heavy rains some time during the twelve months following clearance. There are records of two major storms during this period, one in February and one in September. It is not known definitely which of these caused the changes. State briefly the reasons why a February storm could be responsible and then the reasons favouring a September storm.

- (i) February
-
-
-
-

(2 marks)

- (ii) September
-
-
-
-

(2 marks)



5. Vegetation adapts to the various climatic conditions in the world in widely differing ways.

(a) Briefly explain the following adaptations (survival mechanisms).

(i) Sclerophyllous leaves

.....
.....
.....

(1 mark)

(ii) Deciduous habit

.....
.....
.....

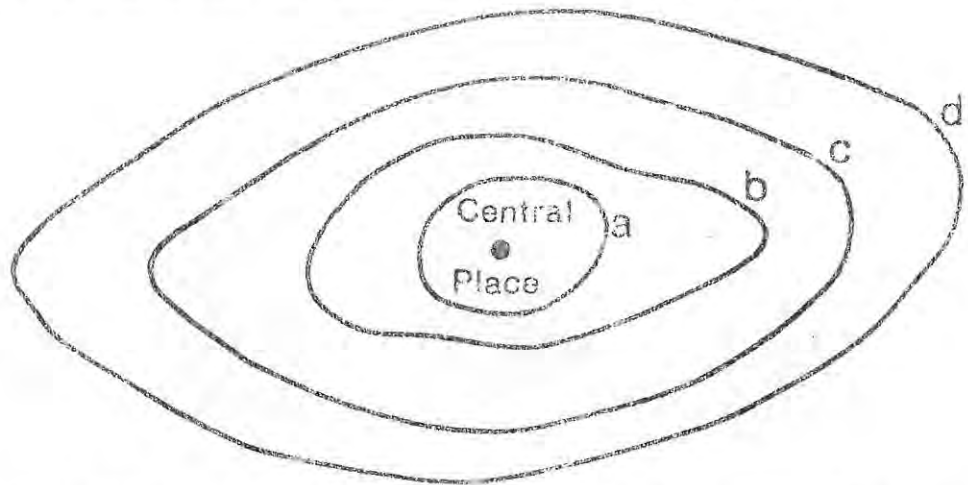
(1 mark)

(b) Give any *three* reasons for coniferous forest being the dominant vegetation association from about 45°N to 60°N in large areas of North America and Eurasia.

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.....

(3 marks)

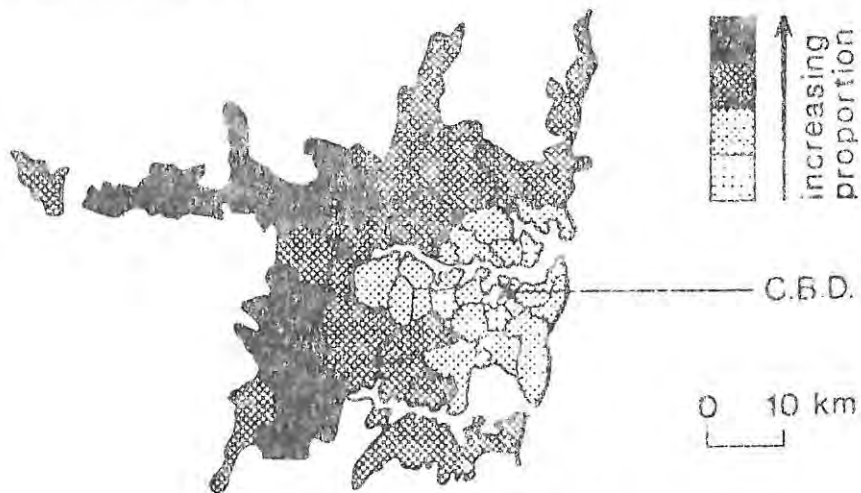
6. (a) In the diagram below the four lines represent the ranges of four goods



By entering the appropriate letter in each box indicate the most likely line or boundary for each of the four goods.

- Clothing New Cars Groceries Bread
- (2 marks)

(b) The map below shows the distribution of a particular residential demographic characteristic within an Australian City.

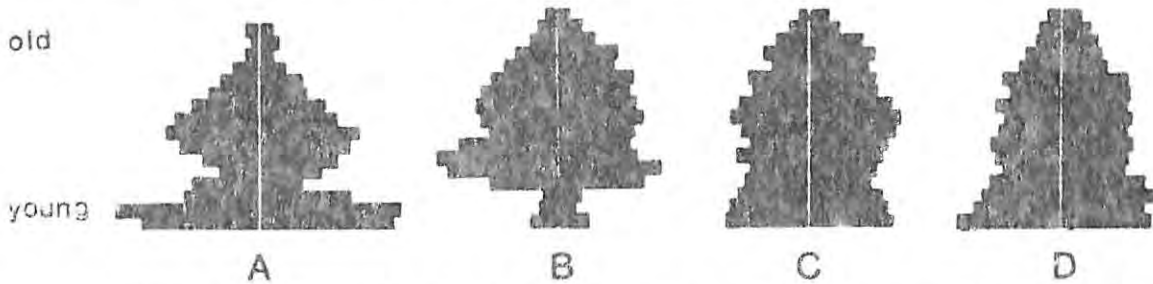


(i) Indicate with a tick which of the following demographic characteristics is most likely to be the one represented on the map.

- The proportion of the population of Greek and Italian origin
- The proportion of the population over 60 years of age
- The proportion of the population which is female
- The proportion of the population under 15 years of age

(ii) To which model of urban structure does this distribution most closely approximate? (1 mark)

(c) The four generalised age-sex pyramids (A, B, C, & D) below represent the residential population structure of different areas within a typical western city.

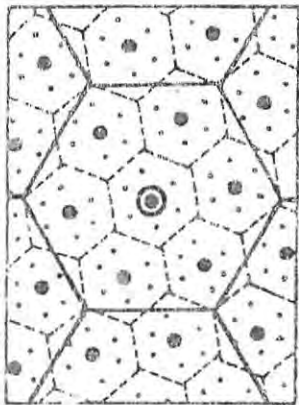


Indicate with a tick which pair of pyramids best represents the population structure of the Central Business District and an outer suburban area respectively.

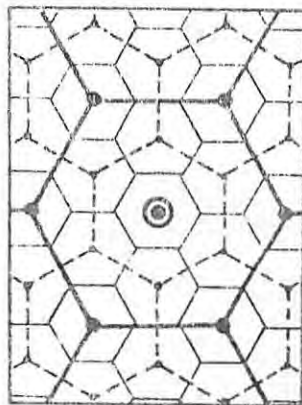
- D and B B and C C and A B and A

(1 mark)

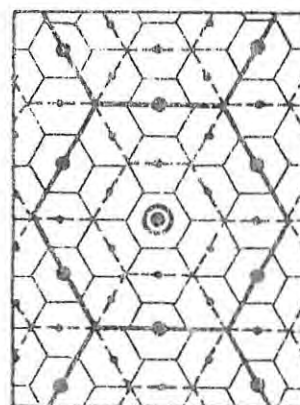
(d) Study the following diagrams. Each map portrays a system of central places and market areas. The graph shows, for one of these systems, the numbers of central places with various numbers of functions.



MAP 1

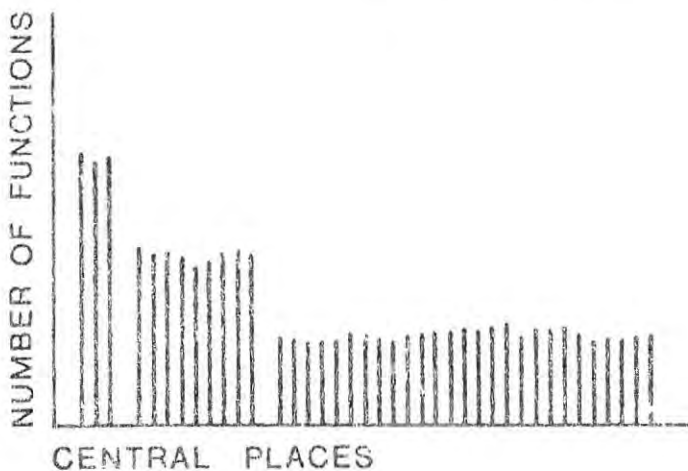


MAP 2



MAP 3

- ⊙ A LEVEL CENTRE — A LEVEL MARKET AREA
- B LEVEL CENTRE - - - B LEVEL MARKET AREA
- C LEVEL CENTRE — C LEVEL MARKET AREA



PLEASE TURN OVER

(i) To which of the systems of central places portrayed in the maps does the graph most probably refer? (tick the appropriate box).

Map 1

Map 2

Map 3

(1 mark)

(ii) Explain your answer.

.....

.....

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.....

.....

.....

(2 marks)

Part II Short Essays — 20 marks

Students must answer any *two* questions from this part. It is expected that answers will each occupy approximately one whole page and must be written in the space provided at the end of this part.

7. Briefly explain what you think will be the long term impact of an increasing shortage of oil, and thus rising costs of petrol, on city size, structure and organisation. (10 marks)
8. *Either* (a) Explain the ways in which soil characteristics affect agricultural production and thus the spatial patterns of agriculture.
- Or* (b) An obvious yet important characteristic of quarrying and mining is that the locations of these activities are tied absolutely to the points in the landscape where the desired materials (minerals, fossil fuels, rocks etc.) occur. Briefly explain some of the problems and difficulties which this characteristic causes for this kind of economic activity.
- Or* (c) Using the lumbering (forestry) industry as an example, explain the difference between an extractive (mining) approach to the exploitation of the biosphere on the one hand, and a farming or developmental approach on the other. (10 marks)
9. Using diagrams where appropriate describe and explain *one* of the following:
- (a) River meanders and associated valley forms.
- (b) Karst landforms.
- (c) The influence of faults and joints on drainage patterns. (10 marks)
10. Discuss the influence of altitude and aspect upon the natural vegetation of the mid-latitudes. (10 marks)
11. To what extent do you agree with the statement that "transport costs are a function of distance"? (10 marks)
12. Explain carefully what is meant by the "urban land rent model" as it applies to Western cities. (10 marks)



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Telegrams Education Bangor Telephone Bangor 66311

A J Van Der Merwe
PO Box 968
Kathu
8446
Republic of South Africa

Your reference

Our reference

Date 17th July 1980

Dear Mr Van Der Merwe

Thank you for your letter. I regret that it has not been possible to reply to your enquiry more promptly and I trust that the delay will not have had adverse effects on the schedule for your thesis.

In order to answer your questions I feel it would be best if I summarised the way in which school curricula and examination syllabuses are determined in Northern Ireland. This region, in common with other parts of the United Kingdom, does not have a centrally determined curriculum for schools and colleges. The major curriculum decisions are taken by individual school principals in relation to the perceived needs of the pupils and the school as a part of the community. Appropriate heads of department of the various subjects or subject groupings in the school determine the syllabus and its change for their given subject(s). Again depending on the school, such change may or may not be made in consultation with the other assistant teachers in any department. Although there is a large measure of common ground in the content and methods adopted in the range of subjects taught in our schools, there is, therefore, a significant element of individuality in approach, and syllabus change and its associated implications are handled in different ways in different schools.

External or public examinations (for pupils in the fifth year of secondary education or subsequent years) are administered by the Northern Ireland Schools Examinations Council through its General Certificate of Education Board or its Certificate of Secondary Education Board. The syllabuses for these examinations are determined by Board-appointed subject panels composed of nominated representatives of teachers and institutions of higher education. Change of examination syllabus is in the hands of these panels. I enclose copies of the rules and schemes of examination for both Boards in which you will find the relevant geography syllabuses as well as information about the various modes of examination which are available.

Autonomous decisions taken in schools to change curriculum and public examination determined change - although the dominant reasons for curriculum modification - are not the only influences operating in our educational system. The Northern Ireland Schools Curriculum Committee, now replaced by the NI Council of Educational Development has been initiating and supporting curriculum change as well as facilitating implementation of Schools Council Curriculum Projects in Northern Ireland. I enclose a paper which gives the terms of reference and remit for the NI Council for Educational Development and I also enclose specific information about three major Schools Council Geography Projects operating here as in other parts of Great Britain.

You ask for samples of pupils' work. This I am not in a position to supply - inevitably children are anxious to retain their own books at the end of each session and in many of our schools there is an element of continuous assessment involved which necessitates retention of the pupils books for one or more years. I suggest, however,



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Telegrams Education Bangor Telephone Bangor 66311

Your reference

Our reference

Date July 1980

that you ask the teacher whose name I quote later. He is the head of a social studies department in a large, girls secondary school near Belfast in which curriculum development and refinement is continuous and he is also Northern Ireland regional co-ordinator for a curriculum development project in geography for fourth and fifth year secondary pupils. You can contact him by writing to:

Mr S Reilly
Regional Moderator
Schools Council Geography for the Young Leaver Project
Seacourt Teachers' Centre
Maxwell Road
BANGOR
Co Down
Northern Ireland

I have assumed that your interest is in the secondary sector - ie 11-18 year olds in schools and colleges. Geography is also taught in our primary schools but the pattern, approach and content is subject to much greater variation than is the case in secondary schools.

In conclusion I should add that other major encouragement and support for curriculum change is provided by the Department of Education's Inspectorate and the advisers of the five local education authorities. The Inspectorate, which includes specialists in geography as well as all other subject areas has as one of its major responsibilities the identification of need for change in school curricula, the initiation and support for development and the monitoring of progress in curriculum change. Additional specialist support or consultancy for schools is available from the staff of the institutions of higher education and the major public resource institutions - the museums, public record office, the ordnance survey and the geological survey.

I hope that this information will go some way to answering your questions and I wish you well in your research.

Yours sincerely

T J SHAW
Senior Inspector & former Secretary of the
Northern Ireland Schools Curriculum Committee

adviescommissie voor de leerplanontwikkeling
aardrijkskunde

aclo A

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KATHU
8446
Rep. v. Zuid-Afrika.

ons kenmerk: 80-170
uw kenmerk:
onderwerp:

enschede, 11 augustus 1980

Zeer geachte heer Van de Merwe,

Gaarne wil ik aan uw verzoek om inlichtingen over het Aardrijkskunde-leerplan in Nederland voldoen. Alvorens ik uw vragen puntsgewijs zal beantwoorden moet ik eerst enige algemene opmerkingen maken.

Zowel naam als taakstelling van de Commissie Modernisering Leerplan Aardrijkskunde zijn veranderd. Wij staan nu bekend onder de naam Adviescommissie voor de Leerplanontwikkeling Aardrijkskunde. Voor meer informatie verwijs ik u naar het bijgevoegde jaarverslag over 1979 (Bijlage A).

Het is mij niet geheel duidelijk voor welk onderwijsniveau u de aardrijkskunde-leerplannen bestudeert. Ik neem aan dat de leerplannen voor onderwijs aan 12-18 jarigen uw belangstelling hebben. Op dat niveau wordt in Nederland het meest uitgesproken aardrijkskunde-onderwijs gegeven. Universitaire ontwikkelingen vallen buiten mijn aandachtsgebied.

Bij de beantwoording van uw vragen ga ik uit van de veronderstelling dat de structuur van het Nederlandse onderwijs u bekend is. Zo niet, dan is informatie daarover eenvoudig te verkrijgen bij de afdeling Voorlichting van het Ministerie van Onderwijs en Wetenschappen (Postbus 20551, 2500 EN Den Haag).

Vraag 1

In Nederland wordt zeer grote waarde toegekend aan de "vrijheid van onderwijs". Dat houdt in dat de Overheid de openbare of bijzondere scholen niet kan verplichten bepaalde leerplannen te volgen. Slechts voor de rechtstreeks onder haar bestuur staande Rijkscholen - dat zijn er betrekkelijk weinig - kan de Overheid een leerplan voorschrijven. In de praktijk echter zullen ook de andere scholen vrijwillig in grote lijnen het "Leerplan Rijkscholen" volgen. Het Rijks-Leerplan voor aardrijkskunde treft u aan in bijlage B. Komend jaar zal een commissie worden ingesteld die dat leerplan zal gaan herschrijven.

752

De Overheid stelt wél voor het hele land de eindexameneisen vast. Deze eindexamens worden jaarlijks schriftelijk afgenomen. De examens voor de verschillende schooltypen, zoals die het afgelopen cursusjaar zijn afgenomen, treft u, met de correctiemodellen, aan onder bijlage C. Tevens is een bespreking van deze examens toegevoegd zoals deze in de Nieuwe Geografenkrant, een blad van aardrijkskunde-docenten, is verschenen (bijlage D). De in het programma onder 2 (Mavo-3) of 2a (Mavo-4, Havo en VWO) genoemde onderwerpen worden jaarlijks door het Ministerie van Onderwijs voorgeschreven. Per jaar wisselen, doorgaans één of twee van de onderwerpen (bijlage E).

Bijlage F is een copie van de eindexameneisen/-programma's zoals die op dit moment gelden. Voor de hoogste vorm van voortgezet onderwijs (het V.W.O.) zal binnenkort een nieuw concept-eindexamenprogramma ter bespreking aan de aardrijkskunde-docenten worden voorgelegd. Zodra dit concept programma is gepubliceerd (één dezer weken) zal ik u een exemplaar toezenden.

Vraag 2

Voor de Rijksscholen worden de leerplannen opgesteld door speciaal daarvoor ingestelde inspectorale commissies. Deze commissies staan doorgaans onder leiding van een (vak-)inspecteur voor het voortgezet onderwijs. Het Ministerie van Onderwijs neemt het initiatief tot vernieuwing of wijziging van Leerplannen voor Rijksscholen. De overige scholen zijn vrij om hun eigen leerplannen op te stellen. Zij kunnen daarbij hulp krijgen van de Stichting voor de Leerplanontwikkeling te Enschede (adres: Postbus 2041, 6500 CA Enschede). De 5 jaar geleden opgerichte SLO heeft voor het vak aardrijkskunde nog niet veel initiatieven kunnen ontplooiën (bijlage G). De ACLO-A zal bij de begeleiding van de ontwikkeling van nieuwe leerplannen een belangrijke advies-rol gaan vervullen.

Vraag 3

Er is in Nederland, ook bij Rijksscholen, geen enkele methode voorgeschreven. In de keuze van tekstboeken is men volledig vrij. De veranderingen in het denken over aardrijkskunde-onderwijs zullen het beste kunnen beoordelen als u bijlage E vergelijkt met het u binnenkort toe te zenden concept-eindexamenprogramma VWO.

Vraag 4

Hoewel het secretariaat van de ACLO-A goed is voorzien van de vele in Nederland gebruikte aardrijkskunde-schoelboeken zijn wij niet in het bezit van "dubbele" exemplaren. Wellicht kunt u voor uw studie presentexemplaren aanvragen bij schoolboekuitgevers. Een adreslijst is bijgesloten (bijlage H).

Veel gebruikte of nieuwe methoden zijn:

Uitg. Meulenhoff	De Geo geordend	van H. Dragt en W. Hofland
Uitg. Gottmer	Wereld in delen	van P. Beukenkamp c.s.
Uitg. Wolters-Noordhoff	Geografisch perspectief	van W.H. Stokroos c.s.

Vraag 5

Voor de beantwoording van uw vraag naar inlichtingen betreffende het Aardrijkskunde-onderwijs in Nederland lijkt het mij het beste u weer naar het jaarverslag te verwijzen. In deze vage vorm is uw vraag wat moeilijk te beantwoorden.

Indien u in contact wenst te treden met aardrijkskunde-docenten kunt u zich het beste richten tot de secretaresse van de Afdeling Onderwijs van het Koninklijk Nederland Aardrijkskundig Genootschap, mevr. M. Kok, E. v. Bronckhorststraat 11, 7512 DL Deventer. De meeste aardrijkskunde-docenten zijn bij deze afdeling van het KNAG aangesloten.


Ik hoop met deze brief uw vragen in eerste instantie naar genoegen te hebben beantwoord. Schrijf gerust als u nog meer vragen heeft of wanneer u denkt dat wij u anderszins bij uw onderzoekingen van dienst kunnen zijn.

Indien uw thesis op ruime schaal verspreid gaat worden zouden wij het op prijs stellen een exemplaar daarvan te mogen ontvangen.

Met vriendelijke groet,

Hoogachtend,

J.A. Koppen,
secretaris ACLO-A.



MODULAR UNIT 1 - LOCAL AND CANADA STUDIES

Theme One: The Change in Settlement Patterns in the Local Area, is based on the area in which the school is located and provides a vehicle for the development of map, air photo, and field survey skills and understandings. It should be heavily field-oriented. Although its organization assumes an urban location, the order of the topics may be changed to suit the environment in which the school is located.

Theme Two: Settlement Patterns in Western Canada, moves the focus of study from the local setting to the still familiar but much more diversified regions of Western Canada. The emphasis is on human occupation and the factors which have led to the development of certain patterns. The concept of the region is emphasized through case studies of physical and human distributions.

Theme Three: Settlement Patterns in Eastern Canada, is designed to show man's dynamism in developing and utilizing the natural resources within a given area. The locales suggested for study should be approached from a "process" viewpoint. By studying these processes (e.g. transportation, manufacturing, exploitation of natural resources) and determining their inter-relationships, the student should be able to discern the settlement patterns of the people who live in Eastern Canada, both from a depth viewpoint, as in the case study, and from a general or broad viewpoint.

Alberta, Canada: Geography 10, 20, 30.

SVIACUS extract

Appendix G1

- 704

Modular Unit 1 has emphasized the use of intensive case studies of the local area, Western Canada and Eastern Canada with a heavy emphasis on the development of skills and concepts basic to an understanding of geography. The student should have developed a basic repertoire of map, air photograph, photograph and graph reading skills, as he works from the concrete to the abstract; from the specific to the general; from the local to the distant. At the same time the student has been encouraged to make limited generalizations related to geographic concepts.

(Curriculum Guide for Geography, 1974, p. 9)

Syllabus Extract

Saskatchewan, Canada: Tentative course outline
in Geography Grade XII.

GRADE XII GEOGRAPHY COURSE OUTLINE

UNIT I

The Geography of Population

1. Definition of Population Geography
 - (i) - ideas of Human Ecology
 - (ii) - relationships between regional differences and densities, growths, etc.
2. Relationships of elements and population
 - A. Physical Elements
 - (i) - empty vs. populated areas
 - (ii) - the physical realm as a populated determinant
 - B. Cultural Elements
 - (i) - Nature of culture
 - (ii) - Effects of culture
 - (iii) - Similar environments are used differently by different cultures
 - (iv) - Environmental limitation on the development of culture
3. Race, Nationality and Culture
 - A. Differences and Correlations
 - (i) - Classification
 - (ii) - Physical traits
 - (iii) - Isolated peoples
 - (iv) - Distribution and main racial stocks
 - B. Ideas of Race Diffusion - See Elements of Geography, Smythe and B.
(Macmillan) Section VI - Population
 - C. Cultural Diversity
 - (i) - Environmentalism
 - (ii) - The nature of culture
 - (iii) - The concept of culture in Geography
 - (iv) - The cultural landscape
4. Population Densities
 - A. Overpopulation
 - (i) - Define and examine
 - (ii) - Controversial views; Malthus, Marx
 - (iii) - Population pressures
 - (iv) - Nutrition and disease
 - (v) - Food supplies

B. Natural increase

- (i) - History of population growth
- (ii) - Birth and death rates

C. Concept of Population Control

- (i) - Cultural resistance and economic necessity
- (ii) - International migration
- (iii) - Internal migration

5. Comparative Studies

Western Europe or North America
 South or S.E. Asia

The physical environment is to be stressed; relationships, racial and cultural differences; the concepts of development and under-development are to be examined. Commonly held beliefs should be criticized. The use of maps and atlases should be widespread and thorough.

Teacher References:

Bresler - Ch. 5, 6, 20, 21, 22 - Human Ecology, Addison-Wesley (Canada)
 Broek & Webb - Ch. 2, 4, 18, 19, 20 - A Geography of Mankind,
 McGraw-Hill

Student References:

Indonesia, Van Nostrand Searchlight # 10
India, Van Nostrand Searchlight # 24
The Lower Mekong, Van Nostrand Searchlight # 12
 Smith, P. J., Population and Production, Ch. I and II
 Swatridge et al, Regional Geography, Ch. 15, South Asia; Ch. 16, India
 Young, Louise B. (ed.) Population in Perspective, See pp. 30,
 61 - 106, 170 - 186, 303 - 321.

(Province of Saskatchewan, Program of studies for the High School, 1969)

Newfoundland, Canada: Social Studies Gr. VII-XI

SOCIAL STUDIES

The Social Studies Programme encompasses History, Geography, Economics and Current, Canadian and World Issues. Its overall goal is to foster personal and civic development by exposing students to selected knowledge of the world and its peoples and by helping them develop attitudes and abilities necessary for informed decision-making as citizens.

GEOGRAPHY — Introducing Earth, Parts 1 and 11

This is a two year programme designed to introduce students to the main physical regions of the world and the peoples who live there, where and how they live and their changing relationships with the environment.

Grade VII Introducing Earth, Part 1 (Revised Edition, 1979)

Teacher's Manual for **Introducing Earth, Part 1**

Units to be covered:—

1. The Round World
2. Mediterranean Europe and North America
3. Coniferous Forests and Temperate Grasslands of Europe
4. Coniferous Forests and Temperate Grasslands of North America

Grade VIII Introducing Earth, Part 11 (Revised Edition, 1979)

Teacher's Manual for **Introducing Earth, Part 11**

Units to be covered:—

1. The U.S.A. — The Warm South
2. Monsoon Lands of Asia
3. South of Capricorn
4. Deserts and Savannas of the World

Grade IX Canada: A New Geography

Teacher's Manual for **Canada:
A New Geography**

Grade X Elements of Geography

Reading Topographic Maps

Units to be covered:

1. The Earth as a Planet — Chapters 1-3 — **Elements of Geography**
2. The Form of the Earth — Chapters 4-14 — **Elements of Geography**
3. Map Studies — Chapters 1-5 — **Reading Topographic Maps**

Grade XI Elements of Geography

Units to be covered:

1. Review, if necessary, Section 1, Chapter 1-3 in Grade X, entitled **The Earth As a Planet** before beginning the Grade XI Course.
2. Climate, Chapters 15-23
3. Climatic Regions and Their Effects upon Man, Chapters 24-30
4. Economic Geography, Chapters 31-36
5. Population, Chapters 37-39

The **Grade X** Geography course can be characterized as primarily Physical Geography, while in **Grade XI** it is primarily human geography. Because a study of physical features is believed to facilitate understanding of human geography, it is suggested that students taking **Grade XI** geography should have already done the **Grade X** Course.

(Department of Education, Programme of studies,
Division of Instruction, 1980-1981)

New Brunswick, Canada: Geography 122

Unit 1 Canadian Identity

Films

Picture Canada Kodak NFB2848
Helicopter Canada NFB0166028
Here is Canada NFB0172568

Unit 2 Urban Canada

Reference Books

Urban Landscapes - Winter, Bellhaven House
The Agrarian Myth in Canada - Chapter 4 - C.S.S. Series
Cities of Canada Vol. 1 & 2, Nader - MacMillan
Perspectives Canada II
Population Information Kit - Health and Welfare Canada

Film

City Limits NFB0171092

Unit 3 The Atlantic Provinces

Reference Books

Regional Development in N. E. New Brunswick
C.S. Series
Point Lance in Transition - C.S. Series
Atlantic Canada Today - A.P.E.C.

Maps and Photographs

Topographic Maps, Air Photographs - Natural Resources
Department, Fredericton
Geology Maps, Mining Statistics, Mineral Maps -
Department of Agriculture, Fredericton
Soil Survey Maps, Department of Agriculture, Fredericton

Filmstrips

Series - Atlantic Provinces - N.F.B.

Films

Trawler Fisherman NFB0166117
Fisherman NFB0159036
From the Middle of Nowhere NFB0174566
Power in Perpetuity NFB0167216
Offshore NFB0173530
The Winds of Fogo Kodak B2687

Map Exercises

Wolfville Canadian Landscape
Lunenburg

Bonavista Topographical Map and Air Photo
Lake Melville Interpretation
Charlottetown

Exercises from Canadian Landscape

Unit 4 Quebec: Province or State?

Reference Books

Two Societies: Life in Mid 19th Century, Quebec, S.C. Series

Films

Why I sing NFB0172111
Le Quebec as Seen by Chartier Bressan NFB0369031
The Magic Circle NFB0176018

Unit 5 Canadian Heartland

N.F.B. Toronto Kit - City in Transition

Films

The Everchanging Lowlands NFB0166060
Story of the Saint Lawrence Seaway NFB0159008
Freeze In NFB0170051
The Backbreaking Leaf NFB0159001
Canadian Shield Saguenay Region NFB0164155
The First Village of Importance NFB2137
Where Have all the Farms Gone? NFB 0169128

Filmstrip/Cassette

The Niagara Peninsula Kodak S166

Unit 6 Prairie Profiles

Reference Books

The Agrarian Myth in Canada, Canada Studies Series
Social Change in the Alberta Foothills, C.S. Series
(Department of Education, Program Development Branch,
Fredericton, 1979)

Nova Scotia, Canada, Geography Gr. 11 (Conceptual approach)

Content

The following schedule is suggested:

- A - General Introduction - 3 weeks
- B - The Local Community - 6 weeks
- C - Regional Background - 27 weeks

Students should be exposed to all sections (A-C) of the course although the depth and treatment will vary according to teacher-student interests, background and future needs of the students.

General Introduction

(1) *Overview of Canada - A Canadian Identity*

Spatial extent. Comparison of Canada's physical and human geography with other areas of the globe. Canadian political and economic links with other nation states. Future problems.

(2) *Population*

Population growth, distribution and ethnic origins. Prewar and postwar immigration trends. Urbanization in Canada. Factors that lead to the growth and development of urban sites, Canada's major urban environments. Concept of primate or regional cities, hierarchy of urban centers. Planned communities. Community issues and methods of analyzing city growth.

The Local Community

Use of topographic maps, aerial photographs, field research, historical documents, interview and questionnaires to discover and analyze the geography of the home region. This should be based on a detailed approach which includes site and situation, history of settlement, resource base, population trends, past and present land uses, present pattern of settlement, future growth and/or decline and future needs.

Regional Background [All regions should be taught]

(1) *The Atlantic Region*

Statistical comparison with the rest of Canada (schooling, wages, industries, unemployment, poverty). Past achievements and growth, present decline. Size and extent, weather and climate. Physical structure, distribution of population, soils, forests and minerals. Effects of glaciation. Atlantic fisheries, manufacturing industries and land uses. Major ports with special reference to Halifax and Saint John.

Government intervention in the Atlantic Region, future development and the possibility of Maritime Union.

(2) *The Great Lakes - St. Lawrence Lowlands*

Concept of an industrial heartland. Comparison of heartland Census Metropolitan Areas with non-heartland cities in terms of population, manufacturing, employment, financial resources, etc. Topographic map studies, population distribution, physical regions within the heartland.

The Windsor-Quebec Axis. Sample studies: dairying, mixed farming, tender fruits, manufacturing, mining, and quarrying. The dominance of Canada's two primate cities - Montreal and Toronto. The Golden Horseshoe, Canada's megalopolis. Metropolitan regional development plans.

(3) *The Canadian Shield*

Another type of heartland. Contrasts between the superior economic and living environment of the Great Lakes-St. Lawrence Lowlands with the huge wilderness area of the Canadian Shield. Shield landscape, severity of climate, boreal forest zone.

Early historical development and the importance of the fur trade.

Contemporary trends - hydro electric power development, forestry resources, mineral development, recreation and the decline of agriculture.

(4) *The Continental Interior*

Transects across the Prairies, correlation between geology, soils, climate, population distribution and economic activities. Presentation and interpretation of climate data. Prairie landscape, cadastral (original land surveys) and settlement patterns.

Farming and multi-purpose dam projects.

Historical evolution. Agricultural diversification and growth in the Prairie Provinces. Non-agricultural economic activities, oil and natural gas production. Future outlook and trends.

(5) *Western Mountains and Coasts*

Resource inventory and primary economic development in British Columbia. Dependence on foreign markets. Pioneer frontier developments and planned resource-oriented communities. Regional resource planning as opposed to haphazard individual company growth.

(6) *The Far North*

The Arctic frontier, permafrost, tundra environment. Problems of transportation and development, natural resources, small population. Inuit-European contacts, native land claims, role in defence. Ecological considerations and the fragile environment.

(Department of Education, Teaching Guide No. 39, 1979)

Appendix D2

PROVINCE OF BRITISH COLUMBIA

DEPARTMENT OF EDUCATION

DIVISION OF INSTRUCTIONAL SERVICES

CURRICULUM DEVELOPMENT BRANCH

SECONDARY SCHOOL CURRICULUM GUIDE

SOCIAL STUDIES - 1974

Geography 12

(Revision and Reprint
of Interim Edition - 1970)

Issued by Authority of the Minister of Education

Victoria, British Columbia

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Note: The outline which follows is a description of content and is not intended to suggest any particular organization.

GEOGRAPHY 12

PART I - Systematic Geography

In each of the units that comprise this programme there are certain specialized skills and concepts. The development of the skills of measurement, the understanding of motions and forces, and the analysis of maps and air photos should be developed throughout the programme. In the understanding of motions and forces a brief review of rotation and revolution, coriolis force, centrifugal force, and gravity may be necessary. In the analysis of maps and air photos opportunities may be provided to introduce (or review) principles of map making, field methods and techniques, and statistical representation.

The elements of mathematical geography are not to be taught in isolation. Rather it is more realistic for a particular example to form the basis of the unit. For instance, in the study of a hurricane it is possible to interweave an understanding of rotation, revolution, seasons and inclination, coriolis force, centrifugal force, latitude and longitude. Through the choice of the example and through the number of elements selected and the manner in which the elements are combined the teacher and the students will have a maximum degree of flexibility.

Unit A. Geomorphology

Geomorphology is the study of the forces which create the landscape upon which man makes his home. It "has far-reaching effects on individuals, on groups, and on the destiny of nations, yet it is generally little understood even by many well-educated people. Geologic processes control the terrain of the earth on which we live; mineral resources provide the basis for our expanding industrialized civilization and are a dominant factor in world politics; and a knowledge of geology and the earth sciences provides rich cultural rewards in appreciation of the development of the world's natural scenic wonders".¹

¹page iii - Heller: Geology and Earth Sciences Sourcebook
(Holt, Rinehart and Winston)

Geomorphology offers the opportunity to understand the development of the earth's surface through the study of selected particular forms. In the planning of this unit consideration should be given to the interrelationship of a number of geomorphological concepts within a particular study in depth. Such in-depth studies could, for example, be centered on a river delta (e.g. the Ganges Delta), a particular local or distant mountain peak, or a canyon (e.g. the Grand Canyon), wherein there is opportunity to do actual or simulated field studies.

1. Structure and Composition of the Earth
2. Forces at Work
 - a. tectonic forces
 - b. weathering (mechanical and chemical)
 - c. erosion and deposition
 - d. mass wasting
3. Modern theories regarding formation of continents and ocean basins.¹

Unit B. Climatology

Climatology, a branch of geophysics, requires a knowledge of many physical principles and involves a use of advanced mathematics. A broader treatment of the subject to suit the purpose of geographers entails a selection and simplification of both the principles and the mathematics involved. Extreme care must be exerted to guard against the inevitable dangers of over-simplification, however. Descriptions of rigid patterns of "wind belts" and the over-emphasis of purely convectional processes when dealing with atmospheric circulation are examples which only tend to confuse perceptive students because there are so many apparent anomalies.

Inasmuch as weather and climate have been an integral part of the whole school geography programme, only a brief review of atmospheric characteristics, elements of weather, and climatic controls should be necessary. The purpose of this unit is the application of concepts rather than encyclopaedic knowledge. The concepts can be developed through the use of a problem approach. Such an approach will contain a greater sophistication of climate theory than in previous years.

¹Students should be made aware of various conflicting theories concerning these topics.

1. Review of Weather Elements
and
Climatic Controls
2. Microclimatology (a local climate pattern)
3. Climate Classifications¹
- *4. Physiological Climatology

Unit C. Biogeography

"For purposes of general definition the landscape can be thought of as that zone at or near the surface of the earth that is perceived, used or affected by man. This zone obviously includes surface phenomena such as vegetation, animals, and soils. The zone changes, however, with changes in knowledge and technology, so that more and more contemporary geographers are becoming concerned about human penetration into the oceans and into space."²

"The biosphere is the contact zone of atmosphere with the combined surface of lithosphere and hydrosphere. Outward and inward from that contact surface lies the narrow band within which life exists. The biosphere is delimited vertically by the distribution of life. Life is a force which carries with it innumerable agents for its application in the form of an almost infinite variety of plants and animals."³

1. The Waters

- a. hydrologic cycle
- b. water budget
- c. surface water --- run-off, evaporation, transportatio
- d. subsurface water --- porosity, percolation,
permeability, water table,
storage, artesian wells, springs
thermal geysers.
- *e. measuring water --- precipitation, groundwater,
surface run-off, infiltration,
evaporation and transpiration.

¹ Students should learn that geographers have used various systems for classifying the climates of the earth.

² Nelson & Chambers: Vegetation, Soils, and Wildlife (Methuen)

³ pp. 70-71 - Allen K. Philbrick: This Human World (Wiley)

* Optional

2. The Lands

a. Soils

- (1) agents of soil formations - water, air, plants and animals.
- (2) controls of soil formation - parent material, climate, vegetation, topography, time.
- (3) processes of soil formation - podzolization, laterization, calcification.
- (4) great soil groups

b. Vegetation

- (1) factors controlling natural vegetation
- soil nutrients, sunlight (heat and light), precipitation, exposure, altitude.
- (2) plant communities

*Unit D. Oceanography

GEOGRAPHY 12

PART II - Man And His Environment

This part of the course should deal with the interrelationships between man and his environment, and should focus on specific problems to be analyzed by the application of geographic skills and concepts.

There should be a major focus on the following environmental concerns:

1. The use of environment with emphasis on the development and management of resources.
2. The conservation and control of environment.
3. The quality of the environment.
4. The perception of the environment.

*Optional

In selecting specific cases or examples to illuminate each of these concerns, such criteria as contemporary relevance, global significance, student interest, and scale should be taken into account. The following questions, adapted from A.K. Philbrick: This Human World (Wiley) may be useful in guiding classroom inquiry:

1. What resources are available to supply the food that sustains life?
2. What materials are available from which men build or manufacture useful articles?
3. What resources of non-animal energy enable men to supplement the force of their own muscles in the performance of the work?
4. What ideas and values (including economic, social and political policies) influence the use of resources?
5. What characteristic ways of doing things, including customs and technologies, influence the use of resources?

Problems of resource depletion, multiple land use, pollution, climatic controls, natural hazards, social, economic and political implications should be considered in relation to agriculture, mining, fisheries, forestry, power and energy and recreation. Teachers should feel free to draw on the fields of physical and human geography.

It is clear that in the study of such problems it will be essential to the student to utilize and integrate material drawn from both parts of this course. Where it is considered appropriate to put the greater, if not exclusive emphasis on Part II, the necessary material from Part I can be interpolated as the need arises.

GEOGRAPHY 12

Suggested Unified Outline

The outline which follows presents another suggested way, in addition to those already outlined in this Curriculum Guide, of developing the Geography 12 course. The outline presents a unified organization that integrates the two parts of the course.

It utilizes the theme Environment and Man and is developed around the idea of environmental concerns as stated in Part II of the outline in this Guide. Significant areas from Part I have been related to these concerns. Interwoven are the problems mentioned in Part II (above).

I. Man's Organization and Use of the Environment

- A. Case study of the historic occupance of a particular area, - e.g. British Columbia or some part of it by the Indians and by early European settlers.
1. Population size, density and distribution of these groups.
 2. The natural environment in terms of:
 - (a) its characteristics in the given area;
 - (b) resources provided by it;
 - (c) uses and perception of it by these groups.
 3. Culture:
 - (a) Social organization
 - (b) Pattern of settlement
 - (c) Modes of economic activity and technology (resource use).
 4. External Relations
- B. Case study of the current occupance of the same area, using the above outline.
- C. Case study of the historic and current occupance of a contrasting area, - e.g. the Middle East.

The purpose of the case studies is to focus on environmental concerns related to the use, conservation, quality, control and perception of the environment as these may be studied in the particular areas chosen. They should serve the purpose of introducing students to the complexity of studying environment and man which involves a knowledge of the interactions between both, of the elements of the natural environment itself and the role played by social, political, cultural and economic factors in such interactions.

II. The Natural Environment of the Human Race

This section can be broadly organized under the traditional headings of the hydrosphere, lithosphere, the atmosphere and the biosphere. The purpose should be to examine a few critical organizing and analytical ideas necessary to understanding the human natural habitat. The world's climatic characteristics, for example, can be treated as innumerable local variations of the flux of energy through the atmosphere and hydrosphere, understanding of which requires a few basic ideas about the physical behaviour of gases and liquids. Physical geographic patterns should be reviewed in a broad and simplified way on a global scale and their significance to human affairs and to the above noted environmental concerns should be stressed by means of contrasting examples drawn as far as possible from the realm of contemporary events. Where appropriate, local and regional examples should also be used in the study of this topic.

III. The Political Organization of the Global Environment

International relations between peoples and between peoples and resources are regulated by the sovereign political states. Within each state, many aspects of life, including resource use and development are shaped and directed by the prevailing political system. Most information we receive about society, resources and human activities around the world is classified and organized in terms of national states or parts of them. Through case studies, students should examine the general nature of political organization, the current dominance of the sovereign state, international organization and similar topics all in the context of environment and man and resource use. Examples of topics that might be considered include:

- A. Pollution as a world wide phenomenon, despite different types of political organization, - e.g. the U.S.A. and U.S.S.R. are both afflicted with this problem.
- B. International aspects of pollution, particularly in the seas, - e.g. the transportation of Alaskan oil.
- C. International organizations to deal with resources, - e.g. the F.A.O. of the United States.
- D. The multi-national corporation and its role in resource management and use.
- E. Fisheries as an international resource.

- F. Resource use conflicts within a state, - e.g. Federal Government policies within Canada and their relation to Provincial policies, interprovincial conflicts.

NOTE: Many other examples of topics will occur to the teacher. Whether he dwells on two or three topics or a broader range is a matter of judgment depending on interest and abilities of the class.

IV. Basic Economic Activities and Resource Use

Through case studies, at a local, national and global level, environment -- man and resource use patterns and problems should be examined in relation to agriculture, mining, fisheries, forestry, energy and recreation.