CAMBRIDGE INTERNATIONAL EXAMINATIONS

GCE Advanced Subsidiary/Advanced Level

MARK SCHEME FOR the November 2002 question papers

9696 GEOGRAPHY

9696/1 Paper 1 (Core Geography)
maximum raw mark 100

9696/2 Paper 2 (Advanced Physical Geography Options)
maximum raw mark 50

9696/3 Paper 3 (Advanced Human Geography Options)
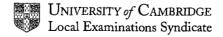maximum raw mark 50

These mark schemes are published as an aid to teachers and students, to indicate the requirements of the examination. They show the basis on which Examiners were initially instructed to award marks. They do not indicate the details of the discussions that took place at an Examiners' meeting before marking began. Any substantial changes to the mark scheme that arose from these discussions will be recorded in the published *Report on the Examination*.

All Examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes must be read in conjunction with the question papers and the *Report on the Examination*.

- CIE will not enter into discussions or correspondence in connection with these mark schemes.

Q.1. (a) The similarities are :- the enforced ascent of air, production of cloud, same cloud base (ie dew point level). Differences are :-nature of air (stable, unstable) type of cloud, descent/ascent of air after original uplift ceases,· (any two of each).

(4)

(b) 2A is likely to produce most rainfall as the air is unstable to start with,hence will be always warmer than environmental air,and thus continue to rise after dew point producing large scale cumulus clouds, which are likely to be rain bearing. The stable air in 2B is forced to rise although colder than environment. Although dew point is reached,the air begins to sink once the impetus is removed and is thus warmed adiabatically. The resultant stratiform cloud is unlikely to produce much rainfall

(6)

Q.2. (a) A = convex , B= rectilinear C = concave

(3 marks)

(b) On the relatively flat summital convexity the main movement is downslope with only limited movement into the slope . In B the movement is of material under gravity entirely downslope. In C ,the direction and intensities are roughly equal and hence the balance between material movement is similarly balanced.

(2)

(c) Summital convex slopes can be structurally determined eg curving sheet joints of exfoliation) but are more commonly the result of transportation processes. Weathered material is moved downslope by rainwash and soil creep. Characterised by relatively slow mass movement. Rectilinear slopes are straight in profile and can be characterised by debris which is controlled by the shape and size of the debris but are more likely to be repose slopes where bedrock is covered by a thin layer of debris being transported downwards. It is thus an erosional slope often undergoing parallel retreat. Basal concavity are slopes of transportation over which the products of weathering from steeper slopes above are evacuated.

(5)

3   Fig. 3 shows age/sex pyramids for four countries in 1995.

   (a)   Identify,

          (i) the country with disproportionate numbers in the age groups 30-34
          and 35-39 years,
               United States 1

          (ii) the country with a youthful or progressive age structure,
               Iran   1

(iii)   the country with the largest numbers of people over 60 years.
United States 1 (horizontal axis is absolute numbers not %)

(b) Briefly describe Mexico's age/sex pyramid.

Mexico has a triangular or pyramidal age/sex structure with quite even sides and 'steps' between the age cohorts. It is sometimes called an intermediate pyramid and is associated with Stage 3 of the demographic transition model. For any two points   **2**

(c) For either Iran or France, describe the dependency pattern and outline its likely social and economic consequences. (Calculations of dependency ratio should not be attempted).

Iran has a pattern of high youth dependency, where a great number of people aged 0-14 (or 0-19) are dependent on the working age group, but relatively small numbers of those over 60 years are.   2

The likely social consequences are that as family sizes are large overcrowding may be common, nutrition levels depressed, and families - whether rural or urban - experience the associated strains of survival.

The likely economic consequences are,

at household scale are financial strain on parents (especially father) as breadwinner/provider; indebtedness; high tax burden; long working hours,

at local/national government scale, financial challenges in the provision, building, staffing and resourcing of medical institutions such as maternity hospitals, children's wards and immunisation clinics; and in education, nurseries, schools and colleges.

For either social or economic consequences, reserve 1

or   France has a balanced pattern of a moderate dependent population in both he young and the aged groups, compared to a large working age group, but it is the aged group which is likely to be the more significant.   2

The likely social consequences are small family sizes, of one , two or no children, supposed spoiling of children and the growth of selfishness and anti-social behaviour, high standards of living, many families caring for elderly relatives and an ageing society which may be orientated to the past and suffer from ageism.

The likely economic consequences are,

at household scale a high tax burden; high financial commitments to the education of youth and the care of the elderly; much investment in pension schemes and financial provision for retirement;

at local/national government scale, financial challenges in the provision,

building, staffing and resourcing of medical institutions for the care of the elderly and in meeting pension burdens; in the operation of the labour market as workforce dwindles whilst meeting the ongoing needs of the 0-19 age group.

For either social or economic consequences, reserve 1   5

Total: 10

4   **Fig. 4 shows changes in China's birth rate from 1962 to 1990 and Table 1 gives some information about that country's population campaigns.**

(a) What relationships between China's population campaigns and changes in the birth rate are suggested by the information in Fig. 4 and Table 1?

There is a clear relationship between campaigns and falls in the birth rate when the line drops steeply after the introduction of win xi shao in 1971 1 and the one child policy in 1979 1

However, there was already a strong downward trend from 1963 (or from 1967) so it could be argued that the campaigns simply accelerated existing trends or that there are other contributory factors to take into account 1

There were significant BR increases in the 1980s during the one child campaign after the prohibition on early marriage was relaxed 1   4

(b) Suggest some of the problems that governments may need to overcome for the successful reduction of the birth rate.

There are many problems that may be suggested, including,

        -lack of financial resources for sustained national campaigns
        -lack of human resources eg educators, trainers, doctors, nurses
        -language and literacy problems
        -cultural resistance eg traditional beliefs, suspicion, religion, male attitudes
        -high infant mortality rates and 'security' in child numbers
        -remoteness and inaccessibility of peripheral areas/peoples
        -barriers to the import or manufacture of contraceptives
        -other ideas

Credit single ideas 1 or developed ideas 2.   6

Total: 10

5   **Figs 5A and 5B show different models of land-uses in and around an urban area.**

(a) (i) Using Fig. 5A, identify the land-use in each of the zones A, B, C and D.

A   high threshold retail (CBD or commercial)
B   manufacturing industry (zone in transition or twilight zone)

C   high density housing (high density suburbs)   *or low income/class*

D   low density housing (low density suburbs)   *or high income/class*

For 1 correct 0, 2 or 3 correct, credit 1, for 4 correct credit **2**

(ii) Use the concept of bid-rent to explain the land-use in zone A.

Bid-rent theory expects that as competition for land-use and bid-rent values are highest in zone A,   *1*

only the most profitable and most competitive users can afford the high prices ∴ eg chain stores, department stores   *2*

and all lower bidders are outbid or forced out of the area.   **1**   **4**

(b) Describe the distribution of economic activities in Fig. 5B and suggest reasons why it is different from the distribution in Fig. 5A.

The distribution of economic activities is seen,
      in the CBD   **1**
      where road arteries join, meet or intersect   **1** *or junctions*
      along the railway line   **1**
      subcentres of retail located outside of CBD   *1*
Valid reasons for the differences from Fig. 5A include;

      -the significance of transport routes, which are not on Fig.5A
      -the significance of urban land-use planning
      -negative factors in the CBD eg high land costs, lack of room for expansion, lack of parking, congestion etc. (reserve 1)
      -positive factors (reserve 1) for greenfield or peripheral/arterial sites eg growth of road transport; new roadbuilding; space; cheaper land costs; incentives such as industrial estates or a better working environment etc.   **6**

Total: 10

Section B

Q.6 (a) (i) Water balance is the theoretical balance between inputs and outputs in hydrological system. It can be demonstrated by equation :-
Precipitation = Evapotranspiration + Run off +/- Storage.

(4)

(ii) Because of the seasonal nature of precipitation (ie input) and seasonal requirements of plants ,man etc through uptake and abstraction ,which can affect stores etc (outputs in equation).

(3)

(b) A simple catchment diagram could be used, either in the form of a flow diagram showing stores and flows, or in the form of a cross section in which the flows and stores are indicated. In either case, the progress of water from ppt input through interception to surface and sub

surface stores and flows should be shown. For full marks this should be related to a catchment and not merely the global hydrological cycle.

(8)

(c)
Level 3
The problems will be seen as a result of human activities such as land use changes leading to changes in run off, infiltration etc that can produce changes in water supply to lower parts of the catchment system. Similarly, abstraction can affect water tables and groundwater flow and affect irrigation supplies. water quality can also be affected . This level of answer will show awareness of the catchment as a system and will not be entirely dependent upon flooding.

(8 –10)

Level 2
A more descriptive account of those activities that lead to problems such as flooding and loss of water supplies for drinking, irrigation etc. There will be some relationship to catchment systems but this may be mainly expressed through exemplification.

(5 –7)

Level 1
Simple description of activities that produce problems such as flooding with relatively little explanation of the connections in terms of the system i.e. deforestation automatically produces flooding through run off .

(1- 4)

Q. 7 (a) (i) Long wave radiation is outgoing terrestrial radiation, short wave is incoming solar radiation

(4)

(ii) Sub tropical areas because of overhead sun plus relatively cloud free areas.

(3)

(b) Latitude affects temperatures because of inequalities in the amounts of insolation received. Land and sea affect temperatures because land heats quicker and cools faster than the oceans (water has higher specific heat). Ocean currents are a means of redistributing the heat by northward flowing warm currents returned by southward flowing cold currents. There should be some explanation for good marks although it need not be expressed at a sophisticated level.

(8)

(c) Level 3.
The nature of global warming will be described through the natural processes of heat retention within the atmosphere that have become exacerbated by the increases of greenhouse gases (Carbon Dioxide and Methane). This can be explained in terms of the increased uses of fossil fuels and intensification of agriculture. ⟶ ⸻ ⸻ ⸻

Level 2
Some understanding of the nature of global warming described in vague terms as the greenhouse effect. it will be associated with CO2 and burning of fossil fuels and rain forests.

(7-5)

Level 1
Descriptive of global warming with little understanding of the process . Able to associate global warming with greenhouse gases (not ozone layer holes) for a passing mark

(4 –1)

Q.8 (a) (i) Rock joints are narrow but often extensive cracks in rocks which can be vertical or/and horizontal. Bedding planes are the lines of junction separating individual layers of sedimentary rocks and tend to be horizontal.

(4)

(ii) Rock joints are the result of the cooling and contraction of igneous rocks, the contraction upon drying of sedimentary rocks or tensional forces resulting from earth movements.

(3)

(b) Choice of two from :-

Freeze –thaw – expansion upon freezing of water in jointed rock where there is diurnal temperature range above and below freezing.
Insolation weathering – Large temperature range resulting in expansion and contraction which is most effective in crystalline rocks of different mineral coloration..
Salt weathering – presence of salt solutions within a rock allowing crystal growth a consequent upon evaporation . This leads to stress within the rock
Wetting and drying - expansion and contraction in appropriate rocks
Biological weathering -exploitation by plants and animals of joints and bedding planes

(8)

(c) Level 3
The process of carbonation will be accurately explained and the importance of joints and bedding planes that are developed in limestones will be described. The ingress of acidulated water and its impact will be fully described. The faster reaction associated with tropical climates can be illustrated by reference to large dolines or tower karst. Others may show the influence through the development of cave systems , swallow holes etc in temperate circumstances. Both are not required but there should be some linkage between process, joints and landforms.

(10-8)

Level 2
Description of carbonation as a weathering process but this will not be well developed .
There will be an appreciation of the role of jointing etc although this may only be associated
with both weathering and landforms in a general manner.

(5 –7)

Level 1.
Outline of the process of carbonation with some association with jointing although this will not
be described in any detail in terms of its nature in limestone rocks. Resultant landforms will
be only vaguely described and poorly linked to process and jointing.

(4 – 1)

9   (a) **Give the meaning of the term *international migration* and describe two
       contrasting examples of international migration flows.**

              international migration means the movement of people **1**
              across national boundaries **1**
              involving a change of residence which is permanent/lasts at least one year **1**

              For each of two contrasting examples **2**. The contrasts may be in
              scale, distance, numbers of migrants, reasons for the move etc.   **7**

       **(b) Fig. 6 shows net sending and receiving countries for international
       migrants between 1990 and 1995.**

              **(i) Describe the main features of the distribution of net receiving
              countries (countries with a positive migration balance of over 20,000
              people).**

              The main features of the distribution of net receiving countries are, in terms of
              location,

              - a band in high latitudes or the north of the northern
                 hemisphere **1** including North America, much of Europe
                 and the former USSR

                 Australia as the only country south of the equator **1**

              - isolated countries (names cannot be expected):
                 Africa (Senegal, Gambia and Ivory Coast);
                 the Middle East (Jordan, Saudi Arabia, Yemen, Oman)
                 and South America (Venezuela).   **1 + 1**

              One other valid main feature eg they are principally MEDCs;
              the isolates are LEDCs where local factors are operative;
              none in Asia; Portugal as an exception in Europe; they vary in geographical
              extent. **1**

              (ii) Suggest some of the limitations of the information given in Fig. 6.

              Credit **1** each of three limitations, from at least two of the following issues,

issues about summary data: silent about locations, age, gender; aggregates figures over a five year period (loss of detail); puts together all reasons for movement including political refugees and voluntary betterment migrants etc

issue about nature of data: absolute not relative, cf significance of 20 000 migrants in US population and in a small state; arbitrary choice of 20 000 threshold etc

issue about accuracy of data collection and recording: eg illegal immigrants, reliability of government data, international comparability of records etc 3

8

(c) With reference to one or more countries, assess the extent to which its policy on population migration is a barrier to potential international immigration.

Consideration of population policy on migration of the chosen country or countries is likely to focus on how 'open' or 'closed' the 'door' is to immigrants of all sorts (eg economic, refugees). It may include knowledge of visa restrictions, entry requirements and features like the green card.

Assessment of the barrier may be of how solid it is, how liable to change, how discriminatory, how effective etc.

Candidates will probably:

L3   Produce a convincing answer, based on a detailed case knowledge which is developed in its evaluation and shows real awareness of the issues involved.   **[8-10]**

L2   Present a thoughtful and sound answer which is lacking in overall development, balance or detailed exemplification and where the evaluation is limited.   **[5-7]**

L1   Either mention general issues or provide a descriptive and poorly developed answer which lacks both the detail and the evaluation needed.   **[0-4]**

Total: 25

10   **(a) For a named rural settlement or rural area you have studied in detail,**

(i) draw a labelled sketch map to show its location and layout,

For the sketch map, credit,

name 1; physical location or setting 2; roads/railway/route system 2; layout (either features within one rural settlement or relationship of different settlements within an area) 2.

7

(ii) describe, and suggest reasons for, the economic growth (or decline) that it has experienced since 1960.

Description of economic growth (or decline) in terms of physical expansion/closures; innovation or increase/decrease in income. **4**

Suggestion of reasons for the above changes **4**

8

(b) Settled rural areas of more economically developed countries (MEDCs) often have particular problems. To what extent do these problems arise from the desire for an urban lifestyle in a rural setting?

The answer is based on counterurbanisation as basic to MEDCs' rural areas although counter-argument which recognises the trend to re-urbanisation in some areas is highly creditable. Discussion of what 'an urban lifestyle in a rural setting' means is relevant eg size of houses and gardens; quality of services; commuting; and the problems thus caused eg pollution, traffic congestion, increase in land prices and exclusion of locals etc.

Candidates will probably:

L3 Provide a perceptive assessment of the question's urban and rural aspects based on good and detailed knowledge of problems in MEDCs' rural areas. **[8-10]**

L2 Develop a sound answer which shows reasonable awareness of the character of rural areas in MEDCs but which lacks either detailed material or overall evaluation. **[5-7]**

L1 Make a number of simple points without a suitable evaluative framework and/or a grasp of the realities of rural life in MEDCs. **[0-4]**

Total: 25

11 **(a) Using examples, explain the meaning of the terms *urbanisation* and *counterurbanisation*.**

The term *urbanisation* means the process where the proportion of people living in towns and cities/urban areas increases (or of concentration of population into urban areas) **2** an example **1**

counterurbanisation is the process of population decentralisation/ moving out from urban areas **1** into small towns or villages **1** physically separate/at some distance from the urban areas **1** an example (needs source and destination) **1**

7

(b) How may governments attempt to reduce the rate of urbanisation in less economically developed countries (LEDCs)? Illustrate your answer with examples from one or more countries you have studied.

Two broad areas of attempts to reduce the rate of urbanisation exist:

development of rural areas to dissuade potential migrants or encourage returnees eg through land reform, electrification, building schools.

Making the urban areas less attractive or welcoming eg forced removal of shanty towns, heavy policing measures.

Whilst the control of the birth rate is of some contributory relevance it cannot be the focus of the answer.

Other factors may be included eg use of the media.

Candidates should describe the attempts in their chosen country or countries and may consider their effectiveness although this is not expressly required.

8

(c) To what extent is it true that spontaneous settlements (shanty towns and squatter settlements) are a sign of the failure of the urban system?

An opportunity to assess the place that spontaneous settlements have, and the role they play in the urban system. Credit is for the argument and use of material and not for the overall perspective as it is possible to argue in a number of directions, although wholly negative or positive answers are unrealistic.

Candidates will probably:

L3   Develop an evaluative answer which recognises both elements of the urban system's failure and other factors or elements of relative ' success', drawing on detailed exemplification for support.   **[8-10]**

L2   Make a sound but not fully developed answer, majoring on spontaneous settlements as a sign of the failure of the urban system and offering limited assessment of extent.   **[5-7]**

L1   Produce an answer which is descriptive in character and which may remain either generalised or narrow so that little or no overall assessment is made.   **[0-4]**