

MARKSCHEME

November 2001

GEOGRAPHY

Higher and Standard Level

Paper 1

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Notes on individual questions

Question 1: Below are pyramids representing the population of A, an economically less developed country (ELDC) and those of its citizens who have migrated and live in B an economically more developed country (EMDC). ...

This question on population draws from the sub-themes of population change and population structure. It requires candidates to interpret population pyramids.

- (a) **Explain why the pattern of males living abroad in the EMDC differs from the pattern in their home country.** *[2 marks]*

The preponderance of males among the migrants to the EMDC is an indication of their having gone there as workers. Candidates who make this basic observation should receive *[1 mark]*. The percentage of males is highest in the age cohorts 20-39, whereas in the country of origin it is highest in the earliest cohorts for male and female alike, an indication of a moderately high birth rate. Candidates who conclude that in such circumstances the males are forced to migrate in search of work, or who make further observations such as these, should receive the second mark *[1 mark]*.

- (b) **Explain why the pattern of females living abroad in the EMDC differs from the pattern of males in the same EMDC.** *[1 mark]*

The percentage of female population in the ELDC conforms to that of most countries in being somewhat larger than the male. It is clear that women have not migrated to the EMDC in the same proportion, even though their numbers there are greatest in the 20-29 age cohorts. This pattern, in fact, is characteristic of migrant workers in a number of European countries. In the upper cohorts the relatively small percentage of women is in marked contrast to the usual pattern in which females increasingly dominate the upper cohorts of a country's population. Candidates who note one of these or other features should receive *[1 mark]*.

- (c) **Why does the population pyramid for the EMDC end at the 60–64 age group?** *[1 mark]*

The observations in part (b) of the question are reinforced by the termination of the population pyramid for the EMDC at the 60-64 cohort: the migrant workers have returned to their country of origin. Reasons for this are pursued at a later stage in this question but candidates who note simply that the workers have returned should receive *[1 mark]*. Though less likely in the case of EMDCs receiving “guest workers” than those with extensive immigration programmes, the absence of older cohorts among the migrants to country B may simply be due to their not having migrated at the time the data were collected. The heavy preponderance of males migrating to country B, however, is more typical of foreign guest workers than permanent immigrants.

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Question 1 (c) continued...

Note: Some candidates might indicate that the situation is not as clear-cut as the pyramid would suggest. While inducements to return may have been offered, not all have been deported at age 65. Citizenship in the host country, though often difficult to obtain, has been adopted by some. In other cases family reunification in the EMDC has occurred – sometimes adding to internal stress. Candidates should still receive *[1 mark]* for insights of this type.

- (d) **Name *one* benefit that migrants living abroad might bring to:**
(Candidates are required to name only one benefit to the ELDC and one to the EMDC.)

- (i) **their home country.** *[1 mark]*

Benefits to the ELDC would include: reduction of pressure on jobs and local resources, possibly a lower birth rate as people of childbearing age leave; remittances as a regular form of income from abroad; and the acquisition of new skills which can be put to use in the country of origin. Any one of these benefits, or other plausible ones, merit the award of *[1 mark]*.

- (ii) **the country in which they are living.** *[1 mark]*

In the EMDC, any labour shortages would be relieved, especially in lower-paid unskilled jobs; cheaper labour would be obtained for less desirable work, (the migrants tend to be highly motivated to work); and exposure to the migrant's cultural traditions could enrich the culture of the host country. Candidates should receive *[1 mark]* for observations similar to these.

- (e) **Name *one* problem that out-migration might cause for the ELDC.** *[1 mark]*

For the ELDC, candidates should note that problems of out-migration might include: the loss of people in the younger working age groups who have skills and education; the departure of males and the fragmenting of families; a higher death rate because of a mainly elderly population; and overall a dependency upon overseas remittances. Observations along the lines of the above should receive *[1 mark]*.

- (f) **Name *one* problem that migrants might experience in the EMDC.** *[1 mark]*

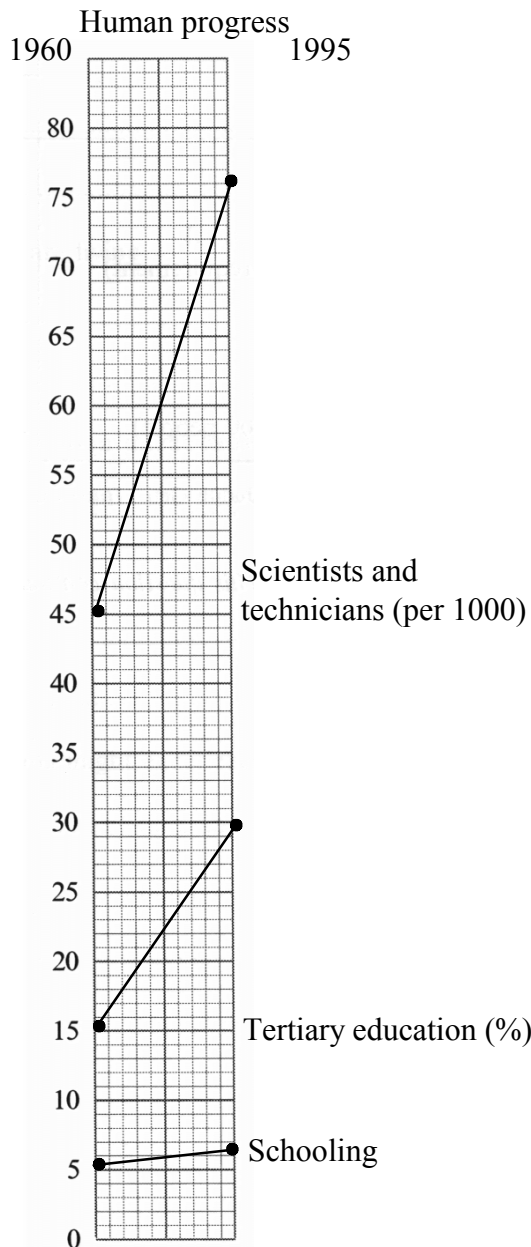
Discrimination in various forms is one problem that migrants might experience in the EMDC. Candidates might attribute this to a variety of issues, such as competition for jobs during a period of higher unemployment or social problems deriving from cultural differences. The basic point to merit the award of *[1 mark]* is that the migrants encounter some form of discrimination.

Question 2: The table below shows the size of the gap in human development between the North and the South in 1960 and 1995 using a selection of indicators. ...

This question is based on the sub-theme of indicators of development. It requires candidates to demonstrate skill in graphing and then to interpret the graph, as well as to understand the difference between survival, progress, and development.

(a) Plot the data for human progress indicators on the graph paper below. ... [4 marks]

Four marks are available for this part of the question. Accuracy of plotting merits the award of [2 marks] provided the plots are correctly labelled. Other labelling is essential: the graph should be clearly titled and have the dates on the right-hand and left-hand margins. [2 marks] may be awarded for this.



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Question 2 continued

- (b) How is the gap changing in relation to human survival and human progress? [2 marks]**

The data for human survival show that the gap is narrowing, although the gap in nutrition has narrowed slightly more than that of life expectancy. Candidates who observe that the gap is narrowing should be awarded *[1 mark]*. The data for human progress show that the gap is widening; this is least in years of schooling and most in the production of scientists and technicians per 1000 people. Candidates who observe that the gap is widening should be awarded *[1 mark]*.

- (c) Name *one* additional indicator that would be helpful in assessing the gap in human survival and another *one* for assessing the gap in human progress and justify your choices. [2 marks]**

Examiners should be ready to give credit for a variety of responses. Typical indicators of human survival, however, would include adult literacy, infant mortality, and child mortality (under age 5); for human progress, expenditure on research and development, telephones, and radios.

Question 3: World deaths and injuries caused by different types of natural hazard, 1968–1992.

This question is drawn from the sub-themes of natural hazards and human use of marginal lands. It requires candidates to define the term *natural hazard*, to interpret graphs, and to explain changes.

- (a) Define a natural hazard.** **[1 mark]**

A natural hazard may be described as a naturally occurring process or event that has the *potential* to cause loss of life or property. It is not the event itself; rather, it is a situation posed by a process or event with such potential. Candidates should receive **[1 mark]** if their response shows that they understand the difference between hazard and event. Because of the ambiguous nature of the question, candidates could also be credited if they gave a definition of any natural hazard.

- (b) Refer to the diagrams below on world deaths and injuries caused by different types of natural disasters, 1968–1992. ... Were more people killed and injured by earthquakes or by drought and famine between 1968 and 1992?** **[1 mark]**

This question does not require candidates to **compare** the two pie graphs. It requires them to add deaths and injuries from the two for the categories of earthquakes and drought/famine and to say (approximately) which category had the higher number. The question thus requires candidates to interpret the pie graphs in terms of **data provided** and not be misled by initial impressions of the proportions in each pie. While it would first appear that the greatest number of deaths and injuries had occurred from earthquakes, the total numbers at the top of the pie graphs show that more people were killed by drought and famine. Candidates who indicate this should receive **[1 mark]**.

- (c) Refer to the diagram below which shows disasters from natural hazards 1960s–1980s. ... Describe the changes that have occurred in the number of disasters from the 1960s to the 1980s.** **[3 marks]**

While there has been an increase in the number of disasters reported during the 1960s to 1980s, the increase in flooding has been noticeable as has that of wind storms. In tectonic events, earthquakes have exceeded volcanic eruptions. Candidates may receive a maximum of **[3 marks]** for observations concerning these and other disasters.

- (d) Give reasons for changes that you have identified in part (c)** **[3 marks]**

The growth in the incidence of disasters is due not to an increase in the occurrence of events but rather to more people being placed at risk from events that are potentially hazardous. This highlights the fact that natural events become human disasters through their impact on population, especially through the infrastructures we have created. Among these would be population growth itself, land pressure, urbanisation, increased vulnerability (for example, through poor planning or land use zoning), economic growth which has produced more property to be damaged, and political change which may affect a government's commitment to internal and international welfare. The growth in mass media and communications has also aided the reporting of disasters. A maximum of **[3 marks]** is available to candidates who address some of these issues.

Question 4: The map below shows the Green Revolution in Regions of Implementation. ...

This question is based on the sub-themes of food production and contemporary agricultural trends. It requires candidates to interpret a map and then combine it with a table of data in order to describe certain relationships.

(a) What is the Green Revolution?

[1 mark]

The Green Revolution refers to a complex set of seed improvement and management techniques adapted to the needs of intensive agriculture. Genetically improved stands of rice and wheat formed the basis of the Green Revolution, but irrigation, mechanisation, fertilisation, and pesticide practices were also associated with it. Not all these elements need to be given for the **[1 mark]**.

(b) Name two benefits of the Green Revolution

[2 marks]

Among the benefits was an increase in world cereal production (over 90 % in thirty years from 1965 to 1995, and three-quarters of the expansion was due to increased yield rather than expansion of crop land). Rapid growth in India, for example, meant the possibility of an extra crop each year; rice, wheat and maize offered greater variety in diet. Farmers have also been able to invest in mechanisation and have become prosperous while local industry has been generated by the need to produce fertiliser. The area of irrigated land has also increased in size. There has been some consolidation of land, and some improvement in road communication. Any two of these, or associated benefits, would merit the award of **[2 marks]**.

(c) Name two problems caused by the Green Revolution, and explain how each problem was caused.

[2 marks]

Problems have been many. Fertilisers and pesticides have increased costs, encouraged weed growth, and polluted water supplies. Irrigation can cause salinisation and the new high yield varieties have not been suited to waterlogged soils. Farmers who lack enough funds to invest in mechanisation or fertiliser have become poorer and debt has increased. Mechanisation has reduced the need for farm labour, thereby contributing to an urban drift of rural population. Some candidates will interpret cause as impact and thus focus on the consequences of fertilisers and pesticides (for example). Others may identify a problem, such as waterlogged soil, and trace it back to irrigation as its cause. Stronger candidates may also provide critical and insightful commentary on the problems associated with the Green Revolution. Examiners have discretion in awarding the **[2 marks]** available for this part of the question. To gain **[1 mark]**, however, candidates explain how cause and problem are linked. Mere listing of single words is not sufficient.

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- (d) Refer to the diagram below which shows the number of persons chronically undernourished in developing countries.

Using data from the diagram and the world map, describe the relationship between the Green Revolution and changes in undernourishment in developing countries (by regions). ...

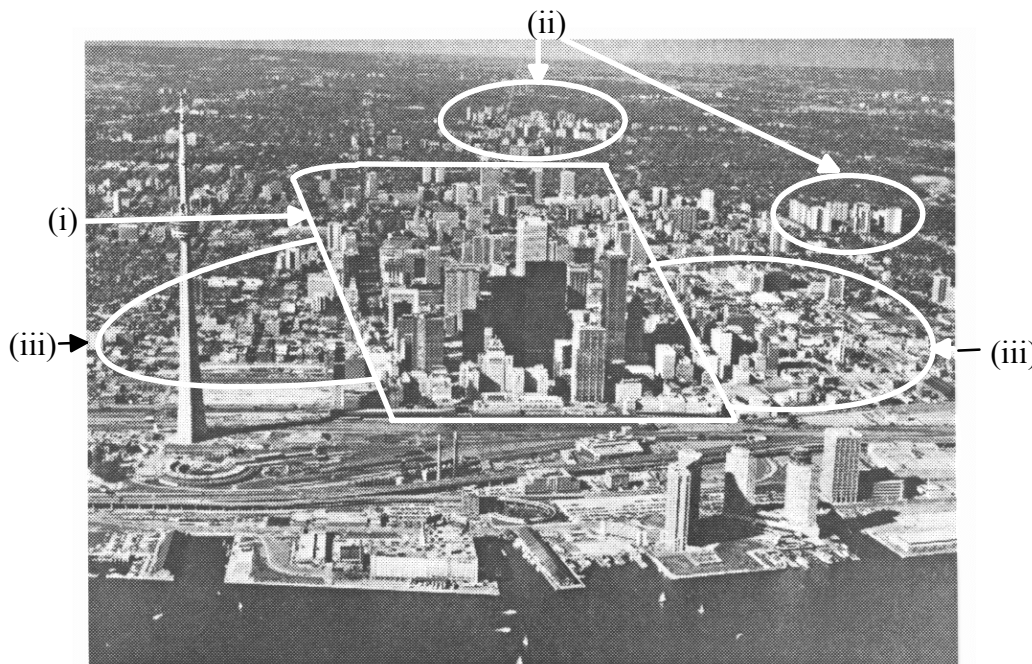
[3 marks]

There is a close correlation between the areas of the Green Revolution on the map and the data in the table on the chronically undernourished. *[1 mark]* should be allowed for candidates who make that basic observation. The scheme started in Mexico but the number of chronically undernourished in Latin America and the Caribbean changed little, while numbers rose in North Africa where the scheme had been implemented only in Morocco and Egypt. East Asia and South-East Asia, however, show significant reductions in the chronically undernourished, in spite of a continuing growth of population. Sub-Saharan Africa, where the scheme was not implemented, is prominent in the bar graph for the growth in the number of chronically undernourished. Candidates making observations of this type should receive a second mark *[1 mark]*. The third mark *[1 mark]* should be awarded to candidates who describe the relationship between the scheme and undernourishment with some insight, noting for example that reduction in the number of undernourished could conceivably be associated with lower fertility rates or internal economic changes which have spurred the production of food (both of which have happened in China). Examiners should be open to a wide range of responses and give credit for plausible ones and sound reasoning.

Question 5: Refer to the aerial photograph (A) on this page, and to the urban land-value model (B) and land-value cross-section (C) on page 16.

The urban question is drawn from the sub-themes of urban morphology and urban issues. It calls for interpretation of a photo and diagram and description of a process affecting inner cities.

- (a) On the photograph (A) draw a firm line around each of the following urban localities, label it, and *justify your choice* on the lines below: [3 marks]
- (i) the CBD.
 - (ii) a secondary PLVI (Peak Land-Value Intersection) outside the CBD.
 - (iii) buildings in an inner urban area of lower land value.



[3 marks] are available for this part of the question.

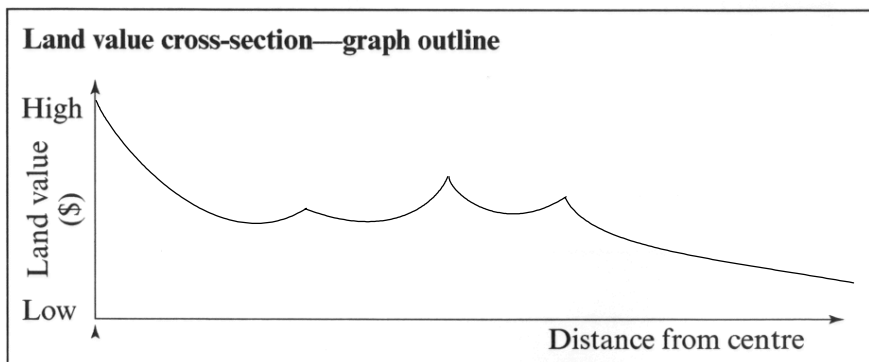
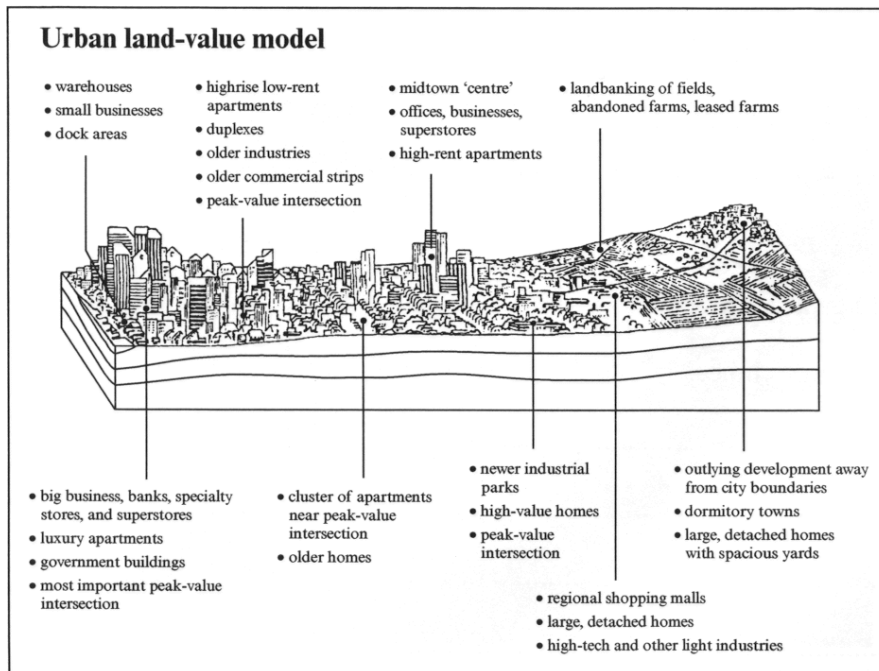
- (i) The CBD, correctly identified as (i) merits [1 mark].
- (ii) A secondary PLVI has been marked as (ii) on the photo as the preferred response but candidates might also indicate one to the east (right) of the photo as indicated. This should also be accepted for credit [1 mark] because their reasoning in making the choice is basically sound.
- (iii) The photo indicates areas of the city that would qualify as being occupied by buildings on land of (relatively) lower value, marked as (iii) – areas of run-down buildings in the zone of discard which in time become properties for gentrification. The third mark [1 mark] should be awarded for correctly identifying one of these areas. Candidates may receive the mark for identifying the older waterfront warehouses in the lower left of the photo. They are not to receive a mark if they have also circled the new waterfront high-rise buildings on the lower right. These marks are conditional upon candidates justifying in writing the choices they have made on the map.

continued...

Question 5 continued

- (b) On the land-value cross section (C) which is directly underneath features on the urban land-value model (B), plot a graph to show how land-values would vary. [1 mark]

Most candidates will show land values decreasing from left to right across the diagram. Candidates are required to plot the cross section directly on (C) underneath (B), the urban land-value model, to see whether they associate secondary peaks in land value with the secondary PLVIs as shown. This should complement their earlier recognition of a secondary PLVI on the photo. Candidates should receive [1 mark] for this part of the question only if their cross-section of land values clearly shows any understanding of the impact of secondary PLVIs.



continued...

Question 5 continued

(c) Describe how *two* of the following processes affect inner cities:

ageing *changing land uses* *changing social structure* [4 marks]

Candidates are to choose two of the three processes.

Ageing: Those candidates selecting ageing will probably discuss it in terms of the people residing in the inner city, and [1 mark] may be awarded for that response. In fact, however, the process applies widely to housing, social services, infrastructure, and industrial base, as well as the inhabitants. The result is that population becomes more dependent on social and medical services, housing needs renovation or replacement, transport systems become outmoded, and urban infrastructure needs repair. There are many possibilities for candidates to pursue in this question and examiners should allocate the second mark [1 mark] according to the depth of understanding of the process and the recognition of how broadly it operates in an urban community.

Changing land uses: The same might be said of changing land uses. [1 mark] should be awarded for responses that discuss a single process, such as the movement of large retail stores to suburban and regional shopping centres. The second mark [1 mark] should be reserved for responses which cover topics such as new construction related to the CBD and other infrastructure such as roads, hospitals; slum clearance; and gentrification, which not only leads to renovation of older buildings but changes in the social class in a particular area.

Changing social structure: Changing social structure is perhaps the most obvious of the three processes. [1 mark] should be awarded for responses that describe a single change, such as the concentration of minority and immigrant groups in the inner parts of cities in EMDCs, gentrification and population decline and push toward the suburbs. The second mark [1 mark] should be reserved from responses that show a wider understanding of the extent of changing social structure.
