



MARKSCHEME

May 1999

GEOGRAPHY

Higher and Standard Level

Paper 2

Note to examiners

Some points in this markscheme have been identified by bullets for clarification of marking. However, it is expected that in most cases the candidates will avoid this approach in favour of an extended and reasoned response.

Notes On Individual Questions

1. (a) **Describe the changes in the sizes of the populations of economically more developed countries and economically less developed countries since 1950, and the projections to 2100.**

[4 marks]

Candidates should note the increase in the population of economically more developed countries (EMDCs) from 0.8 billion in 1950 to almost 1.3 billion today, with projected growth slowing to the extent that the expected population of EMDCs in 2100 will be 1.4 billion, the same as the projected population 75 years earlier in 2025 [2 marks]. In economically less developed countries (ELDCs), population growth has been more rapid (from 1.7 billion in 1950 to almost 5.0 billion today). Growth in ELDCs is expected to remain strong until 2025 when the population will be 7.2 billion people, slowing somewhat to the year 2100 when the projected population will be 8.5 billion people [2 marks].

- (b) **Give reasons to explain the past changes and future projected changes which are shown in the diagram.**

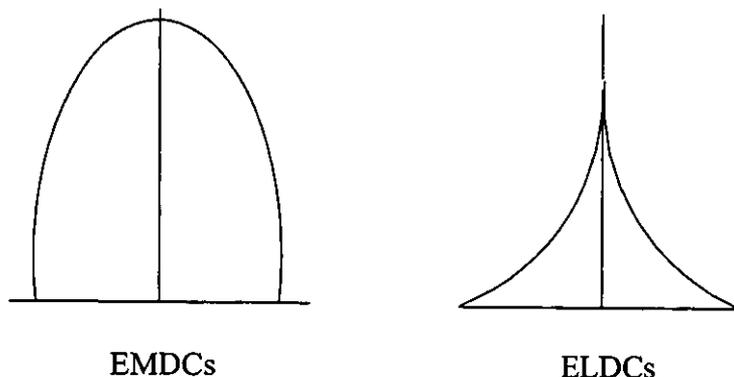
[6 marks]

Candidates could profitably refer to the demographic transition model to provide a framework in which to answer this question. Whether or not the demographic transition is introduced, candidates should note the factors which lead to high birth rates and falling death rates in ELDCs, and contrast these with the factors which encourage a slowing of population growth in EMDCs. Better candidates will note that the factors working to slow population growth in EMDCs today will also impact on ELDCs more strongly after 2025, causing the slowing of population growth shown in the diagram.

- (c) Using appropriate diagrams, compare the population structures of economically more developed countries and economically less developed countries today.

[4 marks]

Candidates are expected to contrast the wide base population pyramids typical of ELDCs with a rapidly growing population with the narrow based population pyramids typical of EMDCs. The diagrams drawn do not have to be elaborate but they must make the distinction clear, *e.g.*



Better candidates will note more subtle differences such as the larger proportion of older people in EMDCs, especially the higher proportion of older females.

- (d) Describe the possible consequences for economically more developed and economically less developed countries of the population growth projected to the year 2100.

[6 marks]

Candidates have considerable flexibility to display their insights in this open-ended question. However, it is expected most candidates will focus on the different issues facing EMDCs and ELDCs as a consequence of their contrasting trends in population growth. Consequences may be favourable or unfavourable, and for EMDCs include an increasing dependency ratio, less demand for youth-oriented services such as schools and greater demand for services for the aged such as hospitals, passive recreation and crematoria. For ELDCs, consequences might include greater demand for youth-oriented services such as schools, population pressures on scarce resources (especially in urban areas which experience rural-urban migration), *etc.*

2. (a) **Explain how accurately the diagram shows the impact of the Green Revolution.**

[4 marks]

After briefly describing the information contained in the diagram, it is expected that candidates will conclude that the diagram is an accurate representation of the causes and consequences of the Green Revolution. Some candidates may conclude that while generally accurate, the diagram is simplistic and suggest improvements that could be made to the diagram; such suggestions should be treated on their merits.

- (b) **Describe the extent to which the Green Revolution and other agricultural changes have eased global food shortages over recent decades.**

[6 marks]

Despite some social problems caused by the Green Revolution and other agricultural changes such as increasing mechanisation, increasing commercialisation and increasing spatial integration, these agricultural changes have eased food shortages over recent decades. Indeed, the world is now at the stage where the amount of food produced per capita is the highest it has ever been and there is more than enough food to feed every human being more than adequately. Better candidates will note that Africa is an exception to this trend, and food shortages there are still cause for concern. Candidates should support their arguments with specific examples and relevant statistics to receive full marks.

- (c) **Identify the current problems in world food supply, and suggest realistic solutions which might ease the situation.**

[10 marks]

Candidates are free to answer this question spatially (*i.e.* referring to specific places which are problem areas) or using an issues-based approach. If the latter approach is taken, candidates are expected to identify issues such as the uneven distribution of food, the feeding of grain crops to animals rather than people, the way in which food aid suppresses food production in ELDCs, the agricultural surpluses generated in EMDCs, the declining prices received by farmers in real terms, and the rising cost of genetically engineered seeds. Solutions suggested by candidates will vary according to the problems identified, but to be awarded full marks they must be factually accurate, supported by statistics and/or examples, and 'realistic' as the question demands.

3. (a) Describe the pattern shown in the diagram.

[5 marks]

The diagram ranks a selection of hazards according to their effect and their predictability. On the basis of predictability, the ranking of hazards from highest to lowest is “desertification, soil degradation, drought, flood, tornado/typhoon, landslide and earthquake”. ‘Predictability’ has a strong relationship with ‘effect’; the lower the predictability the more short-term (or intense) the effect, and the higher the predictability the longer term (or more diffuse) the effect.

- (b) Classify the hazards shown as

- (i) land-based,
- (ii) atmosphere-based and
- (iii) hazards which arise due to the interaction of the atmosphere and land.

[3 marks]

(i) Land-based hazards are earthquakes, landslides and soil degradation [1 mark].

(ii) Atmosphere-based hazards are tornadoes/typhoons and droughts [1 mark].

(iii) Hazards which arise due to the interaction of atmosphere and land are floods and desertification [1 mark].

- (c) Choose *three* of the hazards shown, and for each of the three hazards chosen, describe

- (i) the causes of the hazard, and
- (ii) the reasonable human response in view of its effect and predictability.

[12 marks]

As a rule of thumb, [4 marks] should be awarded for each of the three hazards selected, comprising [2 marks] for an accurate description of the causes of the hazard and [2 marks] for a realistic assessment of appropriate human responses. As a general rule, human responses to hazards can be divided into preparations, immediate responses and aftermath. Hazards with high predictability and long term effects can be addressed particularly appropriately in the preparation phase, whereas hazards with low predictability and intense effects are most appropriately addressed by adequate immediate responses and in the aftermath phase.

4. (a) **Explain why population growth tends to be most rapid in countries with lower levels of economic development.**

[10 marks]

Candidates must discuss the characteristics of ELDCs that encourage higher rates of population growth. A considerable variety of responses is allowable, but responses should focus both on causes of high birth rates and causes of a reducing death rate. Factors which would be significant in explaining high birth rates include:

- ♦ high infant mortality rates that encourage parents to have additional children;
- ♦ children are seen as productive workers who can increase family incomes;
- ♦ preference for boys encourages families with girls to have additional children;
- ♦ lack of old age pensions means parents see children as their future security.

Factors which would be significant in encouraging lowering death rates include:

- ♦ improving hygiene, and better medical and hospital care;
- ♦ greater affluence in some ELDCs.

- (b) **Identify *two* countries in different categories of population growth on the map above, and compare the population policies of the two countries.**

[10 marks]

Candidates are free to select the two countries to be discussed, but the two countries must come from different categories on the map. Candidates who select two countries from the same category may not be awarded more than *[6 marks]*, while candidates who discuss only one country may not receive more than *[5 marks]*. If candidates select countries which are not shown clearly on the map because of their small size (such as Singapore, Andorra or Macau), they should be given the benefit of the doubt in allocating such countries to a category. Given that the two countries selected have different rates of population growth, it is certain there will be differences in their population policies which can be explained at least in part by the different rates of population growth. Other factors accounting for the different policies might include ideology, religion, government priorities or stage of economic development.

5. (a) **Describe and suggest reasons for the differences in the urban morphology of the two areas shown in the photographs.**

[5 marks]

This question is an exercise in photo interpretation and relating the information gleaned from photographs to general understandings. As such, no prior knowledge of Delhi or Sydney is required or assumed. Whereas the Central Business District of Sydney is marked by a small area of high rise buildings (vertical expansion), this function in Delhi is more dispersed over a larger area of lower buildings [2 marks]. This is because the land-rent mechanism operates more strongly in developed world cities such as Sydney, causing a horizontal zonation of land uses (evident in the identifiable areas of wharves, parkland, suburban housing, etc.). In developing world cities such as Delhi, land use zonation tends to form vertically, with shops at ground level, manufacturing on upper floors and residential areas above the manufacturing or interspersed with it [3 marks]. Candidates may usefully refer to urban models in answering this question, but there is no requirement to do so. Responses which offer different explanations of the contrast in urban morphology should be judged on their merits.

- (b) **Using appropriate sketches, describe *three* models of urban morphology, and suggest briefly the extent to which each might apply to the areas shown in the photographs.**

[9 marks]

While it is expected that most candidates will sketch and describe the concentric zone model (Burgess), the sector model (Hoyt) and the multiple nuclei model (Harris and Ullman), there is no requirement that these be the models identified. Sketches should be adequate in size, neat and unambiguous while allowing some variation in specific details. If the three 'standard' models above are used, it is likely that all three would apply more strongly to Sydney than to Delhi as they are based on developed world cities - of these three models, the multiple nuclei model would be most applicable to Delhi. Candidates who have introduced a model of a developing world city may well argue that such a model applies strongly to Delhi. Whatever the argument, the main factor in awarding marks is the quality of understanding of urban morphology displayed by the candidate.

- (c) **With reference to specific cities, compare the geographical problems experienced in cities in economically less developed countries with the geographical problems experienced in cities in economically more developed countries.**

[6 marks]

Candidates have considerable freedom to display their understandings in this open-ended question. However, specific examples of cities in both ELDCs and EMDCs must be developed in more than a cursory manner for full marks to be awarded. A response which is awarded full marks should also have displayed a good understanding of the contrasting problems in cities at different levels of economic development, and offered an explanation of these differences.

6. (a) **With reference to a specific country, rank the ‘forces slowing down economic development’ in the diagram from most important to least important, and justify your ranking.**

[10 marks]

The country selected for this part of the question may be an ELDC or an EMDC. The ranking of the factors will depend upon the country selected, although most of the marks will be awarded for the justification of the ranking presented. Not all the factors need be discussed in equal detail as some will not apply meaningfully to certain countries.

- (b) **Select a country which may or may not be the same country as you used in (a). With reference to this country, rank the ‘forces speeding up economic development’ in the diagram from most important to least important, and justify your ranking.**

[10 marks]

As in part (a), the country selected for this part of the question may be an ELDC or an EMDC; it may be the same country that was used in the response to (a) or it may be a different country. Again like (a), the ranking of the factors will depend upon the country selected, although most of the marks will be awarded for the justification of the ranking presented. Not all the factors need be discussed in equal detail as some will not apply meaningfully to certain countries.