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GEOGRAPHY

Higher and Standard Level

Paper 1

13 pages

Notes on individual questions

Question 1:   The table below shows percentages of population grouped by age and gender.

This question requires understanding of a population pyramid, skill in constructing and labelling it, and an ability to interpret the data as displayed. It ranges in content across the sub-themes of population change and population structure.

(a)   Using data in the table below, draw a population pyramid on the graph paper and label it.   *[4 marks]*

Four marks are available for this part of the question. *[1 mark]* should be awarded for correct labelling of the *x* and *y* axes. A second mark *[1 mark]* should be awarded for other appropriate labelling – at the very least, the labels of Age group, Male and Female, and Percent. Two further marks *[2 marks]* may be awarded for accuracy of plotting on both sides of the *y* axis. Answers ending in decimal values should be given credit if plotted within the appropriate small square on the graph paper. There are 18 plots to be made for the pyramid. Award *[1 mark]* for 10-14 correct plots and a second *[1 mark]* for 15-18 correct plots. Where untidiness impairs the overall effectiveness of the population pyramid, *[1 mark]* should be withheld.

(b)   What variables would be used to calculate a *dependency ratio* for a population group?   *[1 mark]*

[1 mark] should be awarded for identification of dependent and working populations, using the customary break points of 15 and 65. Both names of population sectors and "age breaks" are required. A variation of 5 years should be allowed without penalty in light of comments in a previous Subject Report which highlighted the fluid nature today of the 15-65 boundaries in both ELDCs and EMDCs. Allow a larger evaluation if a candidate provides a plausible reason.

(c)   Describe the birth rate and death rate of the population shown on the pyramid.   *[2 marks]*

The data shows the population structure of the USA in 1990. The birth rate is declining and characteristic of an EMDC. A large proportion of the population is surviving till later life and so the death rate is quite low, particularly among females. Reference must at least be made to both DR and BR: high life expectancy without reference to "low" DR does not merit a mark. However, better answers should be those mentioning the dynamic – "declining BR", "contracting base", "dropping birthrate", or similar wording.

Question 1 continued

(d) **Identify and describe *two* age groupings where there are imbalances between males and females.**   *[1 mark]*

Until the age of 19 the population is predominantly male (14.8% to 14% for females). In the age groups 20-39 males and females are equally represented at 16%. Thereafter, however, females become increasingly predominant, consistent with the pattern in most countries that women live longer than men. It would be equally valid for candidates to note that males are predominant in all age groups up to the age of 29; beyond this age the pattern is reversed. *[1 mark]* should be awarded to candidates who note any two instances of imbalance between males and females. It is sufficient that candidates mention whether males or females predominate in certain age groups (or are balanced with the other); it is not necessary for them to cite the percentages in order to gain the mark.

Question 2:   **The diagrams below show changing factors of industrial location in economically more developed countries (EMDCS) and economically less developed countries (ELDCs).**

This question examines candidates' understanding of the sub-themes of differential levels of development and problems and strategies of development by focussing on the location of industry in EMDCs and ELDCs.

(a)   **Describe what the diagrams show about the change in the choice of location of industries in both EMDCs and ELDCs.**

[3 marks]

Although this section calls for description, some candidates may offer an explanation as well. A third mark *[1 mark]* has been allowed for such instances. In EMDCs transnational corporations (or multinationals) are likely to locate their operations where financial inducements are greatest, land values low, transport well developed, and levels of skill and unemployment high. Large cities and conurbations are increasingly unattractive and since the 1960s there has been a marked shift of manufacturing activity and employment to small towns and rural areas. Industrial estates (greenfield sites), in or close to the rural-urban fringe and multiple nuclei, are characteristic of these sites.

In ELDCs, however, the corporations are more likely to locate the operations in the primate city, especially if it is a port for the export of manufactured goods, or a capital with airport facilities allowing better communication with the corporations' overseas headquarters. Rural-urban migration has been the main factor in the rapid growth of urbanisation in ELDCs and large cities have become pools of cheap labour.

Candidates should receive *[1 mark]* each for describing the dispersal of industries in EMDCs and their concentration in ELDCs *[total 2 marks]*. A third mark *[1 mark]* may be awarded for answers that clearly demonstrate a deeper understanding of this dispersal by citing factors involved such as those above. Alternatively, examiners may award *[3 marks]* for two valid descriptions accompanied by evidence of a deeper understanding.

Question 2 continued

> **(b)** **What are the *reasons* for changes in industrial location which you have described in 2(a).** *[3 marks]*
>
> This part of the question seeks **reasons** for the dispersal described in 2(a). Examiners should recognise items in 2(a) of the markscheme which have validity in 2(b) but explanations awarded credit in 2(a) may not receive credit again in 2(b).
>
> In EMDCs there has been the abandonment of inner cities as areas for industry and their replacement by newer plants in industrial parks on the periphery and often close to multiple nuclei. Candidates who make this basic point may be awarded *[1 mark]*.
>
> In ELDCs, there has been a concentration of industry in the city core, especially near dock and warehouse facilities, and close to sources of cheap labour among the unemployed who migrate to the urban areas to escape rural poverty. Candidates should receive *[1 mark]* for making this point.
>
> A third mark *[1 mark]* is available at the examiner's discretion for answers that go beyond the basic points, pointing out, for example, that the relocation of industries (especially high technology ones) on the outskirts of EMDC cities allows them easier access to regional and long distance transportation, cheaper land, and a local source of employees, many of them professionals, who prefer living in small towns in the rural-urban fringe. These people are also the consumers and this further promotes the development of regional shopping centres. These are also oriented toward the use of cars or automobiles and thus are located close to major highways, giving rise eventually to new multiple nuclei. Unlike the EMDCs, land use planning is often not well developed in the ELDCs, with the result that industrial and residential areas may be in close proximity.

Question 2 continued

(c) Outline the social effects of rapid industrialisation in *either* rural areas *or* urban areas of an ELDC.   *[2 marks]*

Social effects in rural areas might include: a social imbalance between an affluent industrial minority, or commercial workers, and the rest of the population; age-selective migration to urban areas which leaves the older generations to produce food; a decline of traditional values and lifestyles; an increased dependence on remittances from urban workers (as well as those who have migrated to work in other countries); and poor welfare systems especially following disruption of traditional values and lifestyles.

In urban areas, in-migration can lead to the rapid development of shanty towns, increased birth rates, and population growth; a concentration of the unskilled, unemployed, and poor in the shanty towns; high rates of crime, illiteracy, disease and other social ills in areas of impoverishment; unsatisfactory working conditions, such as the use of cheap labour in sweat shops; and at certain times political and social unrest.

Two valid points merit the award of *[1 mark]*. Candidates who mention social effects specifically with regard to rural or urban areas may be awarded *[2 marks]*. They may receive the two marks provided examiners are satisfied that the points made are sound ones that reflect some understanding of the widespread impact of rapid industrialisation. Candidates who mention both urban areas and rural ones have misread the question and should not receive more than *[1 mark]*. Even then, the mark may be awarded only if examiners are satisfied that the answer reflects some understanding of one of the areas.

Question 3:   **Hazard management involves attempts to modify or control a hazardous event and to make people less vulnerable to it.**

This question is concerned with neither the range of natural hazards nor simply human response after they have occurred: it is concerned with attempts at management of hazards and is based on the sub-theme of natural hazards. By offering a choice of consequences in an urban area of an EMDC or a rural area of an ELDC the question also touches on the sub-theme of problems and strategies of development. Examiners should be alert to the candidate who misreads the question and simply lists a number of things commonly done by people in the aftermath of an event such as evacuation, migration, re-building.

(a)   **Why are most hazards not entirely "natural"?**   *[1 mark]*

To gain the mark for this question *[1 mark]* candidates must demonstrate an understanding that the event giving rise to a hazard is a natural process. They may note that its hazardous nature comes from the impact it has on the lives of people and the infrastructure of their societies or that human interference can intensify natural events to the point where they become hazardous. Either interpretation is valid.

(b)   **Select *one* of the following impacts of flooding: *physical impact, economic impact, social impact.* Describe steps that can be taken to control that impact in *either* an urban area of EMDC *or* a rural area of an ELDC.**   *[2 marks]*

Candidates should have examined the two photographs carefully before responding to this question. Answers will vary, not only among the issues they choose to answer but also, in many cases, according to candidates' own experiences. In EMDCs a great deal of engineering has been devoted to reducing physical impact; social impact has been largely left to relief agencies and government following an event. In ELDCs, economic and social impact are likely to be very high. Physical and economic impacts are difficult to control in the absence of investment and infrastructure. The control of social impact is usually in the form of emergency relief food, shelter, medicine, re-location.

(c)   **Explain how *one* attempt to control a river may actually make flooding worse.**   *[1 mark]*

Reduction of meandering and straightening of channels, artificial levees, and dams have in some instances made flooding worse. Candidates are not obliged to name a specific river.

Question 3 continued

(d) **Describe *four* ways in which flooding can be a benefit in rural areas.** *[2 marks]*

Flooding may be beneficial although this is essentially in rural areas. Deposition of silt, creation of adjacent lakes and ponds in which fish breed (thereby producing a source of protein), moist soils which sustain crops in dry seasons, pasture for animals, and wetlands that support abundant wildlife, the re-charging of water tables and the raising of well levels: these and others ultimately prove beneficial. Credit may be given either for four different ways or for three different ways plus additional detail for at least one of those ways - provided the detail is not simply repetitive. Answers stating only two ways, or three without additional detail, merit only *[1 mark]*. Examiners should feel free to award a maximum of *[2 marks]* for plausible answers that show a good understanding of the connections that exist among these aspects and especially in the context of an ecosystem which reveals the interaction between atmosphere and land.

(e) **Outline *two* major effects of urbanisation on the character and behaviour of a river.** *[2 marks]*

There are five major effects of urbanisation on the character and behaviour of a river. Any two of the major effects, or sub-categories of them, would merit the award of *[2 marks]*. Credit should be given, however, for plausible answers which might not conform precisely to the following categories (environmental factors, *e.g.* pollution and water quality, would clearly be a case in point if linked to urbanisation and not just industrialisation):

(1) replacement of soil and vegetation with paving, resulting in reduced storage on the surface and in the soil, increased overland flow, and decreased percolation;

(2) replacement of small networks of natural streams by large networks of artificial streams;

(3) building, leading to possible erosion of bare soils and increased sedimentation of streams;

(4) roads and bridges leading to possible faster flow and rise in levels, both upstream and downstream; and

(5) an urban microclimate, being dustier and warmer than surrounding areas, possibly encouraging more rainfall (especially in summer) and thunderstorms.

Question 4: **The table below shows types of farming, GDP and agricultural production in selected countries.**

This question covers the sub-themes of food production and contemporary agricultural trends. It tests candidates' ability to draw a scattergraph and to interpret its pattern.

(a) **Using the data in the table for percentage of population in agriculture and percentage of GDP derived from agriculture, draw a scattergram below. Insert a best-fit line.** *[3 marks]*

[3 marks] are available for this part of the question. Candidates may receive *[1 mark]* for each of the following: accurate plotting, labelling (which must include the axes and countries), and correct positioning of a best-fit line. Provided the axes are correctly labelled, candidates are not to be penalised for omitting a title. Ideally all countries should be labelled on the scattergraph. However, the question does not specifically require it, the scripts suggest that some schools do not teach it, and no part of Question 4 is specific to a particular country. Credit should therefore be given for accuracy of plot, whether labelled or unlabelled. Some students will have set the best-fit line so that it divides the plots equally or almost so: that is close enough to the general trend to merit credit being given.

(b) **Describe the relationship between the two variables.** *[1 mark]*

Candidates who describe the relationship between the two variables as positive, either explicitly or implicitly, should receive *[1 mark]*.

Question 4 continued

(c) **Examine the table on page 8. What are the main factors determining the amount of fertiliser used and is there a relationship with the level of a country's economic development?**   *[4 marks]*

This question requires candidates to view the table more critically. While it is true that the less developed a country, the greater the percentage of its population involved in agriculture, and often true that the less developed a country the less fertiliser it will use, candidates should recognise that the amount of fertiliser used is in large measure related to the type of agriculture practised. Ethiopia, an ELDC, uses less fertiliser, as does Uruguay where the major farming type is also grazing, (although in the latter for commercial ranching purposes). To the extent that the percentage of population in agriculture (and the percentage GDP derived) is related to a country's level of development, there is a relationship between that level and the amount of fertiliser used. However, Canada, an EMDC, uses a small amount and only slightly less than India while the United Kingdom has the second highest use of fertiliser after Egypt. Note, therefore, that it is also valid to say little, if any, relationship exists between fertiliser use and economic development. Candidates who simply establish a link between fertiliser and the type of agriculture should receive *[1 mark]*. A second mark *[1 mark]* may be awarded for a simple link between fertiliser and level of development. The remaining two marks *[2 marks]*, however, should be reserved for those answers that offer observations along the lines of those above – or others that are plausible. Examiners may still award the full *[4 marks]* even to those candidates who have not provided figures supporting the link to farming type, provided that the candidates have made other plausible observations and backed them up with some details.

Question 5: **The diagram below illustrates three trends which are affecting cities in economically more developed countries today: suburbanisation, counter-urbanisation, and urban renewal (re-urbanisation).**

This question is wide-ranging, drawing from the sub-themes of urbanisation, urban morphology, and urban issues.

(a) **Describe** *two* **'push' factors that would cause people to move to the outer fringe of a city.** *[2 marks]*

A wide variety of economic and social factors serve to 'push' people to the urban fringe. Among these would be rising cost of land and housing, inner city crime, environmental problems such as noise and pollution, and social problems. Any two plausible factors merit the award of *[2 marks]*, but a total of *[1 mark]* should be awarded for closely-related ideas, *e.g.* land and housing, noise and pollution.

(b) **Describe** *two* **'pull' factors that would draw people back to the inner city area.** *[2 marks]*

A similarly wide range of factors 'pull' people back to the inner city area. Among them would be employment opportunities, education facilities, social and cultural attributes, infrastructure (such as transportation), and medical facilities. Again, any two plausible answers merit the award of *[2 marks]*.

Examiners might note in (a) and (b) that the push and pull factors are not wholly site-specific: depending upon people's circumstances, a factor may push or pull; for example, social and cultural attributes might lead one family to seek the social milieu of a growing dormitory community with young children, but they might also pull others back to the inner part of the city for symphony concerts, museums. Stronger candidates might well offer observations of this type. If in doing so they have mentioned only one of the two factors sought by the question, they should still be given mark credit for the insight that they have shown in their answer.

Credit should be given for valid description of renovation or regeneration of urban areas, for example, docklands/warehouse districts.

(c) **Explain why gentrification occurs.** *[2 marks]*

Candidates should receive *[1 mark]* if they indicate that gentrification involves people, (typically middle class and with greater financial resources), moving into older run-down housing or warehouse districts and renovating them. Better answers may also refer to the changes that occur in taste and fashion that accompany such in-migration and lead to a new style of retailing and service functions. These answers, and others revealing insight, should receive a second mark *[1 mark]*.

Question 5 continued

(d) **What causes industries in EMDCs to move from inner city locations to the rural-urban fringe?** *[2 marks]*

There is a growing tendency for industries in EMDCs to be drawn to the rural-urban fringe of cities by cheaper land, access to transportation, and potential workforce of professionally-trained people. These in turn create a market whose needs are met by the development of regional shopping malls which later grow into multiple-nuclei with a full range of service occupations available. As the stimulus material suggests, this question is not about industrialisation but about three processes which affect where people live and work.

Examiners may use their discretion in determining the award of marks for this question but the maximum is to be *[2 marks]*. Depth of understanding, rather than simply citing factors, should be the base for awarding maximum marks.