

GEOGRAPHY

Paper 9696/11
Core Geography

General Comments.

Many candidates found this examination accessible and took the opportunities provided in the paper to demonstrate a sound grasp of the principles of both physical and human geography. There were a number of ways in which candidates could have gained more marks. Most common was the need to support their answers, when requested, with data provided in **Section A** questions. Thus in **Question 5(b)**, for example, most candidates successfully compared the general changes in the rural and urban populations, but many did not gain all of the marks as they did not support their descriptions with data drawn from fig. 4. Similar loss of marks was also experienced in **Questions 2(b)** and **4(b)**.

Rubric infringements were also common in **Section A** and led to candidates wasting time on unnecessary answers. By far the most common was to attempt answers to all 6 of the questions rather than the 5 that is required. Clearly any marks awarded to the additional question are discounted and the candidates wasted time that could have been more productively employed in answers to the more discursive and higher scoring questions in **Sections B** and **C**. Whilst many candidates responded to the demands of the questions set, some wrote answers which were not relevant in **Section A**. Most commonly this was experienced when candidates added explanation to data patterns they were only required to describe. Thus in **Question 2(b)**, for example, explanation for the pattern of temperatures was often attempted, which then had to be repeated in part **(c)** of the question. In general, most candidates are well prepared for the type of questions in **Section A**. They realize that the first parts of the questions are descriptive of the data and test skills in recognition of patterns and trends in a variety of spatial data and diagrams. The second and usually higher scoring demands of the questions are found in the requirement for explanation and exploration of the wider geographical significance of the subject material. Most apportion their time and efforts appropriately between the two elements, but there are some candidates who confuse the two requirements and thus waste time in repetition.

Apart from those candidates committing rubric infringements, most appear to have dedicated an adequate amount of time to **Sections B** and **C** of the paper, which between them constitute 50 percent of the marks. Many candidates, however, do not apportion their time within the questions to their best advantage. Each of the questions is divided into three main sections worth respectively **(a)** 7, **(b)** 8 and **(c)** 10 marks. In this examination there were a number of instances in which candidates devoted two thirds of their answer to **(b)** worth 8 marks and one third to **(a)** and **(c)** which were together worth 17 marks.

Candidates need to be precise in their definitions. Simple attention to detail such as migration having to occur over **1 year** in duration or that life expectancy was the **average** number of years or that discharge referred to the **volume** of water would have ensured the award of more of the marks.

Overall the legibility of the scripts was good and the use of English, often amongst candidates whose first language may not be English, remains very impressive. It is similarly very encouraging to note the use by many candidates of well constructed local exemplification and case studies.

Comments on individual questions

Section A

Question 1

- (a)** The elements of the hydrograph were successfully identified by most candidates, though some incorrectly indicated lag time or base flow.

- (b) The better answers related impermeability of both soils and geology to more run off and hence shorter lag times and steeper rising limbs and greater peak discharge. Very few, however, were able to exemplify soils or geology even at the simple level of sandy soils in contrast to clay or permeable limestone as against granite. Although some candidates mentioned the impact of slopes within a catchment area, very few related this to geology in terms of more and less resistant rocks. More could have been made of the balance between baseflow and quickflow on the hydrograph.

Drainage density was poorly understood by many candidates, who often confused it with drainage basin shape. Those that did define it as the average length of stream channel per square kilometre were able to relate higher density to shorter lag times and higher peak discharges.

Question 2

- (a) Most gained both marks by identifying the city centre and the urban fringe with correct temperature readings. Candidates needed to identify the locations for full marks.
- (b) Very few adequately described the pattern of temperatures as most simply described the decline from centre to periphery. The impact of the river and the relatively slower decline over the inner urban area were rarely mentioned.
- (c) Most answers ascribed the variance in temperatures quite correctly to the urban heat island effect. The level of success in explaining this phenomenon was very mixed. Better answers identified the storing of shortwave radiation by the darker urban surfaces during the day and its slow release at night giving rise to increased temperatures. Some answers also referred to the impact of anthropogenic heat sources and their concentration within the central urban area. Very few answers made any mention of contrasting radiation conditions that pertain in the rural fringes and the river valley.

Question 3

- (a) Most candidates gained both marks by a correct identification of the plate boundaries.
- (b) The diagram was expected to identify sea floor spreading through the divergence of oceanic plates, the upwelling of magma to form a mid-ocean ridge and convection currents in the mantle. Despite often rather crude diagrams, many successfully identified all elements. Marks were most commonly lost by omitting the convection currents or the mid-ocean ridge.
- (c) Virtually all candidates correctly identified this as a convergent margin where an oceanic plate was subducted beneath a continental plate. The explanation of the formation of volcanoes was less successful. Many were confused with the production of island arcs or concentrated on ocean trenches and fold mountains. Better answers explained the melting that occurs in the Benioff zone and the subsequent rise of molten magma through faults in the surface of the continental plate to form volcanoes. At times this was well illustrated by accurate labelled diagrams.

Question 4

- (a) Whilst the figure of 33 was correctly calculated by most candidates, a considerable number did not give this as a rate i.e. **33 per 1000**.
- (b) The term replacement level fertility caused problems for many candidates. Some assumed it was the same as net national increase and many simply ignored it. Thus many answers merely compared Mali's total fertility rate with that of Italy. Very few answers stated that the replacement level is assumed to be 2.1 and then compared the TFR of Mali and Italy with that figure.
- (c) Probably more chose to explain Mali's youthful age structure than Italy's ageing population, but both exhibited similar strengths and weaknesses. Candidates were successful in indicating the social, economic and cultural circumstances that produce high birth rates in Mali and longevity in Italy. The better answers were those that realized the significance of high death rates in Mali and low birth rates in Italy.



Question 5

- (a) Successfully identified as 2015 by all answers.
- (b) Most candidates gained all of the marks with a well supported comparison of the data trends of the rural and urban populations of China. Some marks were lost by:
- not making a true comparison and merely listing the rural and urban changes separately,
 - describing trends without data support,
 - describing the wrong time period.
- (c) No specific knowledge of China was required for this question and most candidates described in some detail the possible attractions of urban areas which would encourage rural to urban migration. Better answers framed this in terms of the push-pull causes of such migration and framed their answers within the context of the progress of urbanisation fuelled by natural increase in population.

Question 6

This produced the weakest responses of all questions in **Section A**.

- (a) Descriptions of the location of areas of decline were often vague and inaccurate. Many did not even identify the fact that there were two such areas and most gained credit only for mentioning the proximity to the Loop.
- (b) This too was poorly accomplished with little to indicate the different locations of the two areas other than vague references to north and south of the Loop. Better answers contrasted the diverse nature of the areas of slow growth beyond the areas of decline and in a broad peripheral ring to the west and south of the city boundary with the more compact wedge shape of the expansion sector to the west and north west and extending far beyond the city boundary to include O'Hare.
- (c) Many answers speculated on the attractions of the lakeside location in terms of water supplies and leisure. In questions such as this candidates are invited to utilise their knowledge of urban geography to provide possible reasons for areas of growth. Knowledge of the specific circumstances of Chicago was not required but there should be some link to Fig. 5. Good answers discussed some of the following; the possible availability of land and its cost (bid rent), the role of planning decisions, the development of transport networks, environmental quality and attractiveness for development, avoidance of less attractive parts of the city in decline.

Section B

Question 7

- (a) (i) The definitions of discharge and velocity were surprisingly poor, with most candidates at best achieving only half of the marks available. Many answers progressed little further than suggesting discharge was the amount of water and velocity the speed of water. Better answers used the simple equation of $Q = AV$ for discharge emphasising the volume of water passing a given point and defined velocity as the average speed over a measured distance.
- (ii) Many answers correctly suggested recurrence intervals were associated with the frequency of floods, but could add nothing more. Better answers stated that these intervals represented the calculation of the frequency of discharges of particular magnitudes which could be expressed in terms of, for example, 5, 10 or 100 year floods.
- (b) Many answers concentrated solely on methods of transportation in rivers accompanied by diagrams to show solution, suspension and traction. These needed to be accompanied by any explanation as to how they occurred or of the role of velocity in entraining transporting or depositing of sediment. Better answers used the Hjulstrom's curve as a model for the explanation of these processes.
- (c) Most candidates described or drew diagrammatically the two different types of channel, but were far less successful in accounting for the differences between them. The better answers explained how variations in discharge led to the production of eyots in braided channels as against pool and riffle sequences producing helicoidal flow and thus increasing sinuosity in meandering channels.



Question 8

- (a) (i) The definitions were generally accurate with sublimation being often better defined than water vapour
- (ii) Relative humidity was poorly explained. Most realised it represented the amount of moisture in the atmosphere but were unable to express it as a measurement. Better answers described relative humidity as a ratio of the amount of water vapour present to the maximum amount that could be held at a given temperature. Relative humidity is thus expressed as a percentage.
- (b) The best answers were those employing well labelled diagrams to illustrate the circulation patterns of day and night or summer and winter. The diagrams indicated the differential heating of land and sea and thus explained the ameliorating effects upon weather conditions. Weaker answers produced diagrams with inaccurate or partial circulation patterns, lacked adequate labelling of the processes and made no mention of effects upon weather.
- (c) The atmospheric conditions of stability, instability and conditional instability continue to cause considerable confusion amongst many candidates who get very tangled up in their descriptions and diagrammatic representation of lapse rates. Often simple explanations by candidates proved to be the best. Stability occurs where a rising parcel of air (DALR) is always cooler than its surroundings (ELR) and thus will not rise or cool to dew point temperatures. The result is thus a lack of precipitation and often clear skies. Instability occurs where the parcel of air is warmer than its surroundings and will thus rise, cool adiabatically and reach dew point temperature after which it will continue to rise at the SALR producing clouds and possibly precipitation. Conditional instability occurs when stable air is forced to rise (e.g. over hills or along a front) until it is cooled to dewpoint temperature after which the SALR will ensure continued uplift with the same weather impacts as instability.

Question 9

- (a) (i) The definitions of pressure release and crystal growth were generally well done. Some marks were occasionally lost by not referring to curvilinear cracking or sheet jointing as a result of pressure release.
- (ii) Spheroidal weathering was less accurately described. Very few mentions were made of the operation of chemical weathering at depth in rounding blocks of stone and most accounts dealt solely with exfoliation.
- (b) There was a lot of confusion over what constituted a slide and a flow. Many employed rock falls as an example of slides and soil creep (heave) as an example of a flow. Better answers drew well annotated diagrams of rotational landslides and of mud or earth flows. By this means they were able to demonstrate the main processes at work such as slides along geological unconformities and flows where saturated conditions increase pore pressure.
- (c) Many candidates produced very creditable responses to this part of the question. They dealt effectively with all three parts of the question, explaining the role of both temperature and precipitation in enhancing chemical weathering activities. Rock type was illustrated by reference to limestones and granite and explanation given as to how their mineral composition made them vulnerable to different types of chemical weathering, namely carbonation and hydrolysis. The influence of rock structure was illustrated by reference to the role of jointing and bedding planes in allowing the ingress of precipitation.

Section C

Question 10

- (a) (i) Life expectancy was usually defined accurately with only the occasional loss of a mark through the omission of the average number of years.
- (ii) Most gained full credit with two developed explanations of the role of education in improving nutrition, child care and thus reducing infant mortality. Similarly, candidates described the roles of education about diet and smoking, as well as HIV awareness, in extending life expectancy. More

marks would have been gained by the development of the role of education in reducing fertility rates.

- (b) Better answers produced a range of factors influencing life expectancy that are more common in urban areas than rural ones. These were supported by good generic and local exemplification. Thus social factors such as literacy rates, access to health care, higher income levels and better sanitation were commonly described and their link with life expectancy explained. Weaker responses were those that mentioned education (repeated from (a)), health facilities and sanitation without any link to life expectancy.
- (c) Better answers concentrated on the social, economic and political factors that could inhibit attempts to raise living standards through health education, nutrition and sanitation. The best answers supported these with well chosen examples. Weaker candidates needed to address attempts to increase life expectancy rather than write in very general terms about those factors that could bring about increased death rates. Such things as starvation, drought, natural disasters warfare featured strongly in such answers without any indication how they might be linked to increases in life expectancy.

Question 11

- (a) (i) Most definitions were accurate although some marks were lost through omitting to describe migration as occurring over one year or more.
- (ii) The best answers identified the improvements in international travel and its costs, globalisation of economic activity, better information sources for destination countries and the increasing incidence of permitted refugee movements. Some candidates did not address the question. In these instances answers centred on general reasons for international migration, such as a desire to improve living conditions or gain a more highly paid job. These answers did not address the reasons why international migration is **increasing**.
- (b) There were many examples of well worked case studies of international migration. Particularly effective were studies of Polish migration to the UK and Zimbabwean migration to South Africa. The more text book studies such as post-war Turkish migration to Germany were far more variable in the level of detail and accuracy. The better answers were those that concentrated on the three aspects given in the question, namely, causes, character and scale. The weakest of these was scale, as some responses gave little indication of the numbers of migrants involved or the time period over which the migration occurred.
- (c) This was generally well answered as most candidates described the types of impacts on both source and receiving areas. Clearly the better answers were able to select these impacts in line with the case studies chosen and able to support each effect by examples. Weaker answers were those only loosely based upon an actual migration and were thus limited to generic points.

Question 12

- (a) This produced surprisingly varied levels of response. All candidates gave at least one example of a shanty town and its general location (i.e. on the edge of an urban area). Many then proceeded to give detailed descriptions of the nature of the settlement and its construction. Better answers concentrated on location and the reasons for the development of shanty towns in such locations. Thus examples were given of vacant land, undesirable for other development due to topography, polluting environments, proximity to workplaces, transport lines such as railway lines, marshy river banks, etc.
- (b) (i) Many candidates gave a long account of general conditions that might be encountered in shanty towns paying little or no attention to the photograph nor addressing the **risks** that residents may face. The better answers combined observation from the photograph with wider knowledge of shanty towns.
- (ii) Most gave two reasonable improvements, but many were too vague for example 'improve housing' or 'cure diseases'. Better answers developed specific schemes of improvement.

- (c) Many candidates produced rambling responses that displayed little connection to urban geography. The better answers were those that took bid rent theory as their starting point, illustrating how urban areas could be seen to reflect the ability to pay. They then sought to develop exceptions both in economic terms (such as the need for a lower paid labour force) social, cultural historical and government intervention in producing variations within the urban settlement structure. Even so answers rarely reached Level 3.

GEOGRAPHY

Paper 9696/12
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Rubric infringements were also common in **Section A** and led to candidates wasting time on unnecessary answers. By far the most common was to attempt answers to all 6 of the questions rather than the 5 that is required. Clearly any marks awarded to the additional question are discounted and the candidates wasted time that could have been more productively employed in answers to the more discursive and higher scoring questions in **Sections B** and **C**. Whilst many candidates responded to the demands of the questions set, some wrote answers which were not relevant in **Section A**. Most commonly this was experienced when candidates added explanation to data patterns they were only required to describe. Thus in **Question 2(b)**, for example, explanation for the pattern of temperatures was often attempted, which then had to be repeated in part **(c)** of the question. In general, most candidates are well prepared for the type of questions in **Section A**. They realize that the first parts of the questions are descriptive of the data and test skills in recognition of patterns and trends in a variety of spatial data and diagrams. The second and usually higher scoring demands of the questions are found in the requirement for explanation and exploration of the wider geographical significance of the subject material. Most apportion their time and efforts appropriately between the two elements, but there are some candidates who confuse the two requirements and thus waste time in repetition.

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Section B

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Section C

Question 10

- (a) (i) Life expectancy was usually defined accurately with only the occasional loss of a mark through the omission of the average number of years.
- (ii) Most gained full credit with two developed explanations of the role of education in improving nutrition, child care and thus reducing infant mortality. Similarly, candidates described the roles of education about diet and smoking, as well as HIV awareness, in extending life expectancy. More marks would have been gained by the development of the role of education in reducing fertility rates.
- (b) Better answers produced a range of factors influencing life expectancy that are more common in urban areas than rural ones. These were supported by good generic and local exemplification. Thus social factors such as literacy rates, access to health care, higher income levels and better sanitation were commonly described and their link with life expectancy explained. Weaker responses were those that mentioned education (repeated from (a)), health facilities and sanitation without any link to life expectancy.
- (c) Better answers concentrated on the social, economic and political factors that could inhibit attempts to raise living standards through health education, nutrition and sanitation. The best answers supported these with well chosen examples. Weaker candidates needed to address attempts to increase life expectancy rather than write in very general terms about those factors that could bring about increased death rates. Such things as starvation, drought, natural disasters warfare featured strongly in such answers without any indication how they might be linked to increases in life expectancy.

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- (b) There were many examples of well worked case studies of international migration. Particularly effective were studies of Polish migration to the UK and Zimbabwean migration to South Africa. The more text book studies such as post-war Turkish migration to Germany were far more variable in the level of detail and accuracy. The better answers were those that concentrated on the three aspects given in the question, namely, causes, character and scale. The weakest of these was scale, as some responses gave little indication of the numbers of migrants involved or the time period over which the migration occurred.
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Question 12

- (a) This produced surprisingly varied levels of response. All candidates gave at least one example of a shanty town and its general location (i.e. on the edge of an urban area). Many then proceeded to give detailed descriptions of the nature of the settlement and its construction. Better answers concentrated on location and the reasons for the development of shanty towns in such locations. Thus examples were given of vacant land, undesirable for other development due to topography, polluting environments, proximity to workplaces, transport lines such as railway lines, marshy river banks, etc.

- (b)(i) Many candidates gave a long account of general conditions that might be encountered in shanty towns paying little or no attention to the photograph nor addressing the **risks** that residents may face. The better answers combined observation from the photograph with wider knowledge of shanty towns.
- (ii) Most gave two reasonable improvements, but many were too vague for example 'improve housing' or 'cure diseases'. Better answers developed specific schemes of improvement.
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General comments

Excellent marks were achieved by a significant number of candidates from across the geographical range of centres. One of the most encouraging aspects was the increased use of accurate local examples in answers to both Physical Geography and Human Geography questions; however it was most notable in the Human Geography questions. Past reports have stressed that teaching, using good local examples, is the best reinforcing mechanism and it was good to see this advice being acted upon.

As in previous years, the Physical Geography questions caused more problems than the Human Geography questions. Some of this stems from a lack of accuracy in the use of terms such as weathering, erosion, entrainment and many others. However, there were signs of a slight improvement in the understanding of Atmosphere and Weather issues. Even so, the Atmosphere and Weather section was still the least popular option.

Some candidates still do not follow important words in the questions such as 'overall', 'relationships', 'trend' and many more. Also, data support is needed for questions that provided a visual resource.

As a general comment to teachers, the easiest way for candidates to raise marks from Level 2 to Level 3 is to concentrate more on the evaluative aspects of the question. In many cases, the differentiator between Level 2 and Level 3 is the degree of assessment, evaluation and a balanced argument.

Overall the paper was completed by most candidates and time did not seem to be an issue, though there are a few candidates who need to apportion their time better, especially on **Section B** or **Section C** questions. Sometimes the answers to part **(a)**, worth 7 marks, were much longer than answers to part **(c)** which were worth 10 marks.

Comments on specific questions

Section A

Question 1

This was the most popular of the **Section A** questions

- (a)** Pools and riffles were generally correctly identified though few candidates were able to draw a correct thalweg line. Most connected the pools but not the riffles and many drew a straight line through the middle of the channel. Thalweg seems to be one of those Physical Geography concepts that are imperfectly understood. Curiously, candidates who did not draw the correct line, sometimes demonstrated that they understood the basic concept when answering **(b)**.
- (b)** Most candidates possessed sufficient knowledge and understanding to gain reasonable marks, though many answers would have been improved by referring to helicoidal flow and being able to relate it to the development of the meanders. Most candidates mentioned the higher velocity at the eroded outside bend and deposition where there is lower velocity and more friction on the inside bend. However, most were descriptive and not explanatory. The fact that material eroded from the outside bend is then deposited at the next bend downstream was rarely mentioned. The role of riffles in the initiation of meandering was rarely mentioned.



Question 2

This appeared to be a relatively straightforward question but it caused problems for many candidates and was not answered well.

- (a) The majority of candidates achieved a few marks by laboriously describing the locations shown on the map. Very few provided a synthesis or drew linkages between the consequences or commented on their nature. The geographical relationships, such as that between snow and ice melt and river flooding (such as the Columbia and Amazon rivers) were often confused.
- (b) The phrase 'changes in the composition of the earth's atmosphere' caused confusion. Considering the emphasis being placed on global warming worldwide it was surprising that only the better candidates had heard of greenhouse gases and could explain how their increase contributed to global warming. Of the gases, carbon dioxide had been heard of, but rarely any of the other gases. The significance of short and long wave radiation was generally omitted and far too many still believe that the depletion of the ozone layer is the main mechanism for global warming.

Question 3

This was probably the least popular of the questions in **Section A** and was not answered well.

- (a) Very few candidates answered (i) and (ii) correctly. Flow and slide were often interchanged or alternatives suggested. The mud or earth flow was variously interpreted as landslide or surface runoff. Instead of landslide, rotational slide or slump, soil creep and rock falls were often mentioned. The inability to identify the features correctly suggests that the relationship between process and landforms is incompletely understood. More thorough use of visual aids would probably help, even though these were textbook diagrams.
- (b) Even if the mass movements were incorrectly identified in (a), there was still scope for obtaining marks in this part. The explanations for the flow were generally better than for the slide/slump. Most recognised the importance of water and the contrast in permeability of the materials. However, few could articulate the processes involved. Most relied on the increased weight of saturated sediments and the force of gravity to initiate movement. This was only a way of increasing the stress on slopes. The role of water in reducing strength was generally unknown although there were a few statements about decreased cohesion. Few understood how this reduced cohesion is created.

Very few candidates were able to explain the slide or slump. Most did not recognise the failure surfaces or slip planes or the need for a trigger mechanism. The shaking of ground by earthquakes was often mentioned with little explanation of the mode of failure. However, the more knowledgeable candidates did explain that undercutting by a river or coastal erosion might initiate failure.

Question 4

This question was answered well.

- (a) The only issue with this question was that some candidates spent too much time simply describing what was shown in the poster and did not provide an assessment or evaluation. They tended to provide a list rather than an interpretation. However, this would still have provided reasonable marks.
- (b) The only issue in this question was the interpretation of availability. Most candidates mentioned physical barriers such as remoteness and distance and cost of provision. Many wrote about the need for large families to work on the land, which was not really about availability. Many, quite rightly, wrote about religious issues of the providers and those of the receivers, though weaker candidates made no distinction between the two. However, even though there were some deficiencies in the answers, most candidates scored well.

Question 5

This question was also straightforward and caused few problems.

- (a) Almost every candidate answered (i) and (ii) correctly.
- (b) Answers that used percentages to underline the relationships, usually achieved full marks. Each year there are questions of this nature and there is little doubt that practice answering such questions will reap the benefits. Lack of data support was the main reason why full marks could not be awarded, although some candidates wasted time by doing a detailed comparison of the differences between the sexes.
- (c) The question asked for two reasons, but some candidates provided more than two. It was not clear whether this was to hide the fact that they could provide little explanation or a simple misinterpretation of the questions. Perhaps they were relying on the Examiner to choose the best two. The question could have been interpreted in two main ways, both of which were valid. Some candidates interpreted it as a need to explain why some did migrate. The majority, however, interpreted it as the need to explain why so few migrated. Candidates need to remember that not all people over 60 are too weak, infirm and unable to migrate because of physical disabilities.

Question 6

This was a question that needed the ability to interpret the detail on the map. The better candidates coped well, whereas weaker candidates needed to be more precise and detailed.

- (a) The better candidates understood the term location and used road names and geographical position with some precision. Weaker answers were basically too vague; this was especially the case with the shape of the CBD core. The better candidates mentioned linear shape and combined it with location.
- (b) This was another question only requiring two reasons, whereas many candidates gave three or more very brief reasons and ended up with only about half marks. Bid rent considerations, noise, pollution and congestion north of Broadway were reasons for not developing, and access to shops, work and services were popular positive reasons. With so many reasons provided, answers tended to be descriptive rather than explanatory. However, the more disciplined answers did score highly.
- (c) This was answered quite well with most answers identifying the Burrard Inlet and docks and the parks on the Pacific Coast. The presence of False Creek caused some confusion and many candidates thought it was a good place to dump rubbish.

Section B

Question 7

This was the most popular question in **Section B**

- (a) (i) The main problem with Physical Geography definitions, is that they are either known and understood or completely misinterpreted. This was the case here. A small number of candidates were clear about both terms. The remainder found water table more difficult than groundwater recharge. Many equated water table with groundwater in general. Groundwater recharge was understood in general terms, but the detail in the definition was sometimes lacking.
- (ii) There were some very good accounts of evapotranspiration with most candidates recognising the two processes. Most mentioned the necessity for heat to drive the process, the conversion to water vapour and losses via the stomata in leaves. The weaker candidates omitted the need for heat and were unclear about the transpiration process. Some regarded transpiration as simply the evaporation of water that had been intercepted by the leaves. A minority of weaker candidates simply separated the two processes with no explanation.
- (b) Most candidates wrote good descriptions of floods although some overlooked the important role of precipitation. Drought was treated in lesser detail. Candidates needed to explain how floods and drought would contribute to channel features and landforms. For the latter there were some brief



references to increased or decreased erosive power and deposition with a mention of levees and floodplains but without elaboration. The better candidates did appreciate that some braiding might be the result of decreased flow conditions in rivers.

- (c) Although there were some excellent answers in which activities such as deforestation/afforestation and urban development were linked to the components of the hydrograph, many did not state this link. These were poorly balanced answers which were dominated by human activity with no links being made with hydrographs. Many simply answered in terms of river flow. Also, if hydrographs were mentioned it was often in terms of time lag to peak discharge. The effects on peak discharge were largely ignored and this is vital with respect to flooding. There was also a tendency to provide a diagram of a hydrograph with no relation to the text. Many candidates chose to discuss dams and reservoirs but without the ability to relate them to the regulation of discharge and the effects on the hydrograph.

Question 8

Although not very popular, there were some good answers and the general response was better than for similar questions in previous years.

- (a) (i) Most candidates seemed to have learnt the definitions quite well. The definition of latent heat transfer was better known than that for sensible heat transfer.
- (ii) Although most candidates understood that condensation into water droplets close to the Earth's surface was needed for fog formation, few could explain precisely the processes involved. Radiation cooling was explained more thoroughly than advection cooling. The better candidates mentioned both processes.
- (b) Most candidates tackled this question with reasonable understanding. Most opted to describe the six factor model, usually with quite informative diagrams. However, candidates need to learn not to waste time repeating in written form information already shown on the annotated diagram(s). The most common error was to confuse the wavelengths of the radiation and to confuse reflection at the surface with re-radiation. Most attempted to quantify the percentage absorbed or reflected, though accuracy needs improving. However, the response in general was encouraging.
- (c) There were some excellent answers to this question. To achieve the highest marks it was necessary to explain seasonal changes. Most candidates were able to outline the three cells and most accounts of the atmospheric pressures were correct. However, only a small number connected the differences in pressure to differences in temperature and ascending and descending air. Very few mentioned the pressure effects produced by continentality.

Question 9

- (a) (i) There were some candidates with the correct definitions, though transverse faults were less well understood than expected. Ocean ridges received better analysis but there was some confusion with trenches and many were unspecific about magmatic upwelling. However there was much good information on plate margin divergence and the creation of new crust,
- (ii) This question posed no problems; the topic seems to have been learnt thoroughly.
- (b) Most candidates produced diagrams but, in many cases, they were uninformative and added little to the answer. There were some impressive but inaccurate diagrams of continental plates colliding and splintering to produce impressive mountains, with the Himalayas being the common example. Unfortunately this is not how the process works. The mountains are formed by the crushing of sediments that had been deposited between the two plates. If the example of the Andes Mountains was chosen, then there was some confusion between volcanoes and fold mountains.

The accounts of island arcs also contained inaccuracies. Most knew that subduction was involved but many described the meeting of a continental and an oceanic plate, rather than the meeting of two oceanic plates. The volcanoes were often placed on the wrong side of the subduction zone. A significant minority confused island arcs with volcanic hot spots. Thus, the Hawaiian Islands were often quoted as island arcs.

- (c) Candidates seem to find it difficult to relate human activities and natural processes, maybe through a lack of understanding of the processes involved. If the processes of weathering and the development of slopes are not understood then it is going to be extremely difficult to relate them to human activities. The consequences of this were very general statements lacking in detail. Candidates needed to achieve a balance between the two components of the question. There were good accounts of the weathering effects of acid rain but with an emphasis on carbon dioxide rather than the other gaseous pollutants. The exposure of rocks leading to increased insolation weathering was also frequently described.

The relation of slope development with human activities received better treatment. Many candidates used the examples of Aberfan and the Vaiont Dam disaster, usually quite accurately. The better candidates transferred knowledge from the Human Geography options and wrote about the destabilising of slopes in Brazil and Venezuela by inappropriate urban development.

Section C

Question 10

- (a) (i) Most candidates were able to state the definition, although some omitted the 'per year'
- (ii) The response was generally sound though they could have included the possibility that death rates may rise in an ageing population because of the changing age structure, even though people are long-living. The majority of candidates accounted for the increase by mentioning an event such as famine, epidemic, war and a natural hazard and many gave more than two circumstances. Examples were generally relevant and accurate.
- (b) This question posed more problems than it should have, largely as a result of choosing inappropriate comparisons and a lack of knowledge of countries at different stages. Many candidates chose Stages 1 and 2 but were unable to relate them to specific countries. Many countries would be dismayed to learn that they were still in Stage 1! Stage 1 was frequently confused with Stages 2 or 3 and few mentioned high fluctuating death rates in the early stages. The weaker candidates simply produced a mirror image of the accounts for the different stages. Thus everything was poor about LEDCs, such as hygiene, medical care, sanitation, water supply, and everything was the opposite and good about MEDCs. Candidates are advised to avoid such sweeping generalisations.
- (c) This was a good discriminator question which enabled the better candidates to demonstrate their knowledge and understanding while the weaker candidates needed to produce a coherent argument. Many candidates did not understand why such a projection might be useful. Good answers were concerned with planning for the future and produced good balanced evaluations. Weaker candidates praised the UK for having such a high life expectancy and ignored the usefulness of the projection.

Question 11

- (a) (i) Most candidates achieved both marks.
- (ii) This question elicited a similar response to **Question 10 (a)(ii)**. Two situations were required and many briefly produced three or four. Elaborations were inevitably brief and repetitive. War and famine were often quoted but the longer term implications were forgotten. However, there were some very good answers that reviewed the conditions in which the death rate exceeded the birth rate.
- (b) The response to this question was generally excellent. Most selected their situation from **(a) (ii)** and there were good, informative references to birth rate incentives and the encouragement of immigration. Discussion of the difficulties faced by governments was also very well informed. Many candidates were able to use information from their own countries to underpin their answers. Many emphasised the difficulties in changing lifestyle choices.
- (c) This question was also a good discriminator. The better candidates were able to produce thoughtful balanced arguments. Most stressed the inappropriateness to most MEDCs, mentioning the possibility of a Stage 5, and the fact that many LEDCs have rushed through some of the stages. The weaker candidates simply described laboriously the respective stages in the model

and regarded the model as explanatory rather than descriptive. Few candidates dwelt in detail on birth and death rates.

Question 12

This was the least popular question, yet was answered quite well. There were some interesting examples for Examiners to read and assess.

- (a) (i) Most candidates had some understanding that shops in the CBD tended to be higher order outlets with larger ranges and thresholds. The physical character of the shops was often described but few mentioned high rise, multi-floor shops and stores.
- (ii) As with previous questions of this nature, many candidates gave more than two reasons with a consequent loss of detail. In general the answers were good with bid-rent, noise and congestion being the most popular reasons.
- (b) London Docklands was frequently chosen for the development to be described. Unfortunately, the level of knowledge of the local geography was often weak and details of the development were often inaccurate. Candidates should be encouraged to use examples closer to home, with which they may be familiar. Local exemplars are always to be preferred. Text books do not always provide the local flavour need to answer such questions thoroughly.
- (c) Although many answered this question with good examples and detail many simply produced generic answers which could have applied to any large city. Also, quite a few candidates strayed beyond infrastructure even though it was identified in the question. Assessment of the success of the attempts was often ignored. As noted earlier, it is the ability to assess and evaluate which lifts marks from Level 2 to Level 3.



GEOGRAPHY

Paper 9696/21
Advanced Physical Options

General Comments

The overall standard was in line with that of last year's examination but with the usual wide range in the quality of answers within it. Many candidates demonstrated evidence of sound knowledge and understanding of the basic physical elements of geography appropriate at 'A' level. In that better half of the cohort, candidates used appropriate terminology in their answers and were more precise in their descriptions and explanations. Lack of such accurate and fine detail was typical of the weaker half of the candidates. As has so often been the case in past examinations, the better answers were those that addressed the specific demands of the question. There are many candidates who need to pay greater attention to the command words such 'describe', 'explain', 'evaluate', 'outline' etc. Examiners setting questions never require candidates to simply 'write what they know about a topic'. Unfortunately too many weaker candidates were keen to do just that. In some questions the subject topic was the same for both parts, (**Questions 5 and 6**), and many candidates included irrelevant matter in one part which would have been appropriate to the other half of the question. Credit could not be given as each part of the question had specific demands to be met. In other cases, candidates repeated material which meant it was probably only relevant to one of the two parts.

The division of the questions into parts did seem to pose a problem for some candidates. Parts (**a**) tested basic knowledge requiring candidates to offer identification, descriptions and or explanations of some part of the syllabus content. Too many candidates expanded their answers beyond what was required for what was two fifths of the total question marks. This often led in such cases to limited responses to parts (**b**). Also the parts (**b**) demanded some evaluative element in answers; too often this aspect of the questions was brief or ignored with the inevitable impact on the marks awarded.

The use of appropriate and well documented examples, or case studies, were again a feature in many of the more successful answers. Well executed and accurate diagrams also marked out many of the better answers. Two of the questions demanded diagrams but some candidates did not give sufficient attention to their importance as part of their answers. Apart from such specific demands to include diagrams, their inclusion in other answers often demonstrated, or confirmed, a candidate's breadth of knowledge and understanding.

Examiners continue to be impressed by the general standard of written English achieved by so many of the candidates as well as the legibility of their writing.

Comments on specific questions

Tropical environments

Question 1

- (a) This was generally quite well attempted with most candidates drawing a Gersmehl type diagram but other types of diagram were equally acceptable. In fact some the latter types provided more information on how nutrients are cycled which was the crux of the question. There was a wide range of quality, both in the execution of diagrams and in the information they presented. A common weakness in the diagrams was in the scale representation of the different stores and flows. In the best answers candidates recognised the need to relate to the climatic conditions of the tropical rain forest in explaining how the nutrients are cycled. There was also a realisation that nutrients remain trapped in the large and luxuriant biomass until plants die and decompose and there was an understanding of the processes operating in the litter and soil stores. In weak answers the treatment was altogether too superficial, such as litter being only from leaf fall, and



were purely descriptive. A few candidates were penalised for not providing a diagram and there were one or two instances of an inappropriate water cycle diagram.

- (b) Many candidates took this as an opportunity to write well rehearsed accounts of destruction of the rainforests by a range of activities from 'slash and burn' to widespread clearances for major logging, agricultural or industrial concerns. The impact on soils was too often merely in terms of soil erosion after it had become exposed by clearance of the protective vegetation and root systems. Good candidates recognised the role of soil in nutrient cycling and how different activities impacted on this and that their effect was not always damaging. The significance of the word 'always' in the question was not recognised by the majority of candidates. There were therefore relatively few good answers to this part of the question.

Question 2

- (a) The first key command to 'explain the variation in rainfall' was too frequently ignored. Candidates needed to explain that convergence at Axim and Monrovia gave virtually year round rainfall and that the seasonal movement of the ITCZ was related to the decreasing number of wet months at stations B, C and D. Thus in many cases credit was only available for how variation in rainfall affected the different vegetation assemblages in each area. Many of the answers were too protracted for a part (a) question in spite of only really answering the second part of the question on the impact of rainfall variability on vegetation.
- (b) Few candidates had appropriate knowledge or understanding of tropical limestone landforms and the factors that relate to their development. This was in contrast to many past papers where candidates have displayed an adequate to good knowledge of the factors leading to the creation of granite landforms. Thus it seemed that much less attention had been paid to the study of limestone despite it having equal weighting in the syllabus statement: it is important that both limestone and granite are studied.

Although most candidates recognised that chemical weathering was dominant in tropical humid environments and that its rate was accelerated with high temperatures, there was rarely any knowledge shown of the process of carbonation. In fact hydrolysis or simple solution were wrongly advanced as playing a role in limestone weathering. Similarly there was little evidence of an appropriate knowledge of tropical limestone landforms. For most candidates the principal landforms were stalactites, stalagmites and pillars which are hardly landforms. Examiners expected some knowledge of surface features such as pavements (clints and grykes), dolines, dry gorges and so on. Better answers should, and some did, explain the particular nature of tropical karst where dolines develop into steep walled depressions (cockpits) and steep hills (tower karst). Diagrams, which could have been very relevant were either lacking or too often only of caverns and the stalactites etc. Only in the all too rare better answers was the question of 'relative contribution' discussed.

Coastal environments

Question 3

- (a) There were good responses to this question, while other candidates needed to provide accurate detail of the properties of two types of waves. In good answers, the relative strengths of swash and backwash between high and low energy waves were explained accurately and linked appropriately to their effect on the gradient of beaches. However, in spite of many candidates recognising that low energy waves were constructive, and had written that such waves built up beaches, they insisted that the resultant beach profile would be gentle. Similarly, with the effect of destructive waves it was too often stated that they steepen beach profiles. In the best answers candidates explained that high energy storm waves could throw up storm ridges of pebbles and that, although there was often a steepening due to plunging breakers, the general beach profile was leveled out. Good candidates also used diagrams effectively especially where original and modified beach profiles were accurately shown. Candidates need to ensure that the diagrams do not contradict statements made in the written text.
- (b) The best answers were ones in which a specific example, or examples, had been used effectively to demonstrate both the problems of management as well as attempts to overcome them. Too often though the answers were in basic generic terms, or, with examples taken at random from various parts of coasts with little or no connection with each other or to addressing the specific



demand of the question. The question was about a stretch or stretches of coast so it is important that candidates study real coastal examples that exhibit management issues. These issues are not confined to coastal erosion/coastal protection. Weaker answers were mainly based on hard versus soft engineering solutions with little relevant description of 'the main problems of management'. Such answers concentrated on listing, describing and illustrating the whole gamut of structures such as groynes, gabion cages, sea walls, revetments and so on but in isolation and not within any coherent account. There were good, and some very good, answers where the issues outlined above were well addressed. Some of these were based on home areas where field work had been undertaken but equally good were some where candidates had developed accurate knowledge and understanding from careful study of published maps and/or texts.

Question 4

- (a) Weaker candidates tended to just repeat the information in the figure provided. They needed to show understanding of both the figure and why corals are thought to be so vulnerable to changes in the ocean. For example some candidates suggested that CO₂ levels directly affected corals rather than their effect on rising temperatures which has an effect on corals. This reflected a lack of knowledge of the factors affecting the oceanic conditions in which corals grow and thrive. In good answers, candidates demonstrated their knowledge of the various physical conditions necessary for corals to live and how sensitive they are to changes in those conditions. In such good answers candidates recognised that coral growth might keep pace with any rise in sea level and that conditions, other than increasing ocean temperatures, such as pollution and alien organisms might also be a threat.
- (b) This question gave an opportunity for candidates to draw on fundamental knowledge and understanding of coastal landforms, and the factors that determine them and to present well structured and effective responses. The accounts of headland and bay configuration were almost always in terms of 'hard and soft' rock, or 'resistant or less resistant' rather than the specific geology. Structure was too often in terms of 'cracks and weaknesses' rather than folds, dip, faults and jointing. There was almost a universal response which was in terms solely of the headland, cave, arch, stack, stump sequence of landforms. Good answers drew on examples of actual rock types and structures to demonstrate their effect on both plan and profile forms. They also addressed 'the extent to which they determine' them by also demonstrating the role of wave action and sub aerial processes as well as human activities.

Hazardous environments

As in previous years, this option was a very common choice of Centres.

Question 5

- (a) Tropical storms (hurricanes) were generally better understood than tornadoes. This was expected but both types needed to be covered for full credit and some candidates omitted to do this. Others regarded them both as the same type of weather system or that tornadoes were merely small hurricanes. As ever there were good answers where candidates gave clear descriptions and explanations of the main characteristics of each. Some candidates would have done better if had covered the basic elements such as the extreme low pressure in hurricanes, the calm eye, high velocity winds, torrential rain and storm surges. In the case of tornadoes there was similarly a lack of clear description of their characteristics by the majority of candidates. In the best answers candidates gave appropriate brief explanations.
- (b) Candidates should know which areas are at most risk from the hazardous effects of hurricanes and the reasons why, i.e. that hurricanes develop over warm oceans and move westward to affect the eastern seabards of land masses or islands within a relatively narrow latitudinal belt. Similarly, vulnerable coastal areas are those that are heavily populated and low lying such as Bangladesh. Most candidates knew of 'tornado alley' but explanations for that location were generally muddled with only a few candidates revealing a clear understanding of weather phenomena which might lead to tornadoes developing. Many answers concentrated on the second demand to give extended accounts of the reduction of the impact of each type of event. Good answers had accurate detailing of measures such as methods of prediction and warning and appropriate infrastructures and drew upon valid examples and which demonstrated well the extent of possible reduction measures. Good points were made by comparing the differences between MEDCs and LEDCs.



Question 6

The most frequently answered question in the whole examination.

- (a) This was generally quite well answered with some being of outstanding quality. It proved a good test as to how well candidates could organise their knowledge to both describe and explain the distribution of earthquake epicentres within the constraints of a part (a) question. The best candidates were able to link effectively the distribution of epicentres to different types of tectonic plate boundaries as well as to their global location, e.g. the Pacific ring to principally destructive boundaries and the mid-Atlantic ridge and African rift valley to constructive margins and so on. Weaker answers tended to be accounts of the three principal plate boundaries, with varying degrees of accuracy, and little reference to distribution.
- (b) An excellent or good answer to part (a) was not always followed by an answer of similar quality in part (b). The majority of answers were rather general in approach. As has been commented on in previous examinations, the effects of hazardous events listed by many candidates could apply universally and not be linked to the specific type of hazard in question. For example, many candidates stated that earthquakes cause widespread death and destruction often followed by collapsing services and diseases but these effects could apply to hurricanes, tsunamis and volcanic eruptions. The question demanded 'why are earthquakes hazardous?' Answers should have included earth shaking, with the side to side movement of S waves added for good answers. The scale of an earthquake and its location determines why it might be hazardous as might secondary hazards from liquefaction and landslides. These could then lead to collapsing buildings and so forth. The second demand of the question required precision in responses and fine detail of how can earthquakes be predicted and the reliability of such predictions. Too many candidates wrote that seismographs can be used to predict earthquakes as could Richter scales, satellites and computers but very rarely how. The other common misunderstanding was to attribute success to such methods whereas in practice prediction is still very problematic i.e. in addressing the question of 'to what extent?'

Arid and semi-arid environments

Question 7

- (a) This question required both description and explanation and few distinguished effectively between hot arid and semi-arid climates. Descriptions were often adequate with the better ones backing them up with appropriate data and including both arid and semi-arid climates. However, explanations were frequently absent or minimal. Only in the few very good answers did candidates give a clear account of the sub-tropical high pressure zone where descending air is warmed and similarly show understanding of the effect of cold ocean currents off the western areas of continents. The effects of rain shadow and continentality were generally better explained.
- (b) In many answers, ecosystems were not the basis of answers even though they were the focus of the question. Often there were full, and frequently very good, responses in terms of vegetation but with soils and animals receiving minimal attention. It is appreciated that vegetation provided more scope for description, and this was allowed for in the assessment, but soils and fauna needed to be covered adequately for candidates to achieve good credit. Soils were often merely described as dry and sandy rather than with characteristics such as lacking in humus, upward capillarity, salty and lacking horizons and structure (solonchaks). Similarly few candidates could go beyond camels as examples of desert fauna or acknowledge that there is variation from one desert to another.

Question 8

- (a) There were relatively few attempts at this question. This question required candidates to draw a diagram showing and identifying the prominent landforms such as the dominant mesa or the butte and mountain front in the background of the photograph and the rock strewn pediment in the foreground. The pediment was recognised by many but ignored by others and very few identified the butte, let alone the different slopes within it. Candidates were expected to produce just basic line drawings with appropriate labels of what should be familiar arid landforms. Explanations needed to be less general terms and use appropriate terminology. Many candidates wrote about desert landforms that they knew of, regardless of their appropriateness to those in the photograph, so candidates do need to look at the resources provided and make use of them. There were



however a few good responses where candidates revealed that they could recognise a range of desert landforms and provide acceptable ways in which they might have been formed. The standard of the required diagram was poor in most cases.

- (b)** This part of the question was generally better attempted, although there was a wide range in the quality of responses. There were some good accounts of operations in the Negev, the Gezira project and along the Nile. Often though, the approaches were in too general terms e.g. with regard to irrigation and agriculture. Others were untenable suggestions for development in arid or semi-arid areas such as the introduction of industries, tourism and mining without regard to the nature of the environment or resources. Only in very few answers did candidates attempt to evaluate any developments in terms of sustainability.

GEOGRAPHY

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- (b) Many candidates took this as an opportunity to write well rehearsed accounts of destruction of the rainforests by a range of activities from 'slash and burn' to widespread clearances for major logging, agricultural or industrial concerns. The impact on soils was too often merely in terms of soil erosion after it had become exposed by clearance of the protective vegetation and root systems. Good candidates recognised the role of soil in nutrient cycling and how different activities impacted on this and that their effect was not always damaging. The significance of the word 'always' in the question was not recognised by the majority of candidates. There were therefore relatively few good answers to this part of the question.

Question 2

- (a) The first key command to 'explain the variation in rainfall' was too frequently ignored. Candidates needed to explain that convergence at Axim and Monrovia gave virtually year round rainfall and that the seasonal movement of the ITCZ was related to the decreasing number of wet months at stations B, C and D. Thus in many cases credit was only available for how variation in rainfall affected the different vegetation assemblages in each area. Many of the answers were too protracted for a part (a) question in spite of only really answering the second part of the question on the impact of rainfall variability on vegetation.
- (b) Few candidates had appropriate knowledge or understanding of tropical limestone landforms and the factors that relate to their development. This was in contrast to many past papers where candidates have displayed an adequate to good knowledge of the factors leading to the creation of granite landforms. Thus it seemed that much less attention had been paid to the study of limestone despite it having equal weighting in the syllabus statement: it is important that both limestone and granite are studied.

Although most candidates recognised that chemical weathering was dominant in tropical humid environments and that its rate was accelerated with high temperatures, there was rarely any knowledge shown of the process of carbonation. In fact hydrolysis or simple solution were wrongly advanced as playing a role in limestone weathering. Similarly there was little evidence of an appropriate knowledge of tropical limestone landforms. For most candidates the principal landforms were stalactites, stalagmites and pillars which are hardly landforms. Examiners expected some knowledge of surface features such as pavements (clints and grykes), dolines, dry gorges and so on. Better answers should, and some did, explain the particular nature of tropical karst where dolines develop into steep walled depressions (cockpits) and steep hills (tower karst). Diagrams, which could have been very relevant were either lacking or too often only of caverns and the stalactites etc. Only in the all too rare better answers was the question of 'relative contribution' discussed.

Coastal environments

Question 3

- (a) There were good responses to this question, while other candidates needed to provide accurate detail of the properties of two types of waves. In good answers, the relative strengths of swash and backwash between high and low energy waves were explained accurately and linked appropriately to their effect on the gradient of beaches. However, in spite of many candidates recognising that low energy waves were constructive, and had written that such waves built up beaches, they insisted that the resultant beach profile would be gentle. Similarly, with the effect of destructive waves it was too often stated that they steepen beach profiles. In the best answers candidates explained that high energy storm waves could throw up storm ridges of pebbles and that, although there was often a steepening due to plunging breakers, the general beach profile was leveled out. Good candidates also used diagrams effectively especially where original and modified beach profiles were accurately shown. Candidates need to ensure that the diagrams do not contradict statements made in the written text.



- (b) The best answers were ones in which a specific example, or examples, had been used effectively to demonstrate both the problems of management as well as attempts to overcome them. Too often though the answers were in basic generic terms, or, with examples taken at random from various parts of coasts with little or no connection with each other or to addressing the specific demand of the question. The question was about a stretch or stretches of coast so it is important that candidates study real coastal examples that exhibit management issues. These issues are not confined to coastal erosion/coastal protection. Weaker answers were mainly based on hard versus soft engineering solutions with little relevant description of 'the main problems of management'. Such answers concentrated on listing, describing and illustrating the whole gamut of structures such as groynes, gabion cages, sea walls, revetments and so on but in isolation and not within any coherent account. There were good, and some very good, answers where the issues outlined above were well addressed. Some of these were based on home areas where field work had been undertaken but equally good were some where candidates had developed accurate knowledge and understanding from careful study of published maps and/or texts.

Question 4

- (a) Weaker candidates tended to just repeat the information in the figure provided. They needed to show understanding of both the figure and why corals are thought to be so vulnerable to changes in the ocean. For example some candidates suggested that CO₂ levels directly affected corals rather than their effect on rising temperatures which has an effect on corals. This reflected a lack of knowledge of the factors affecting the oceanic conditions in which corals grow and thrive. In good answers, candidates demonstrated their knowledge of the various physical conditions necessary for corals to live and how sensitive they are to changes in those conditions. In such good answers candidates recognised that coral growth might keep pace with any rise in sea level and that conditions, other than increasing ocean temperatures, such as pollution and alien organisms might also be a threat.
- (b) This question gave an opportunity for candidates to draw on fundamental knowledge and understanding of coastal landforms, and the factors that determine them and to present well structured and effective responses. The accounts of headland and bay configuration were almost always in terms of 'hard and soft' rock, or 'resistant or less resistant' rather than the specific geology. Structure was too often in terms of 'cracks and weaknesses' rather than folds, dip, faults and jointing. There was almost a universal response which was in terms solely of the headland, cave, arch, stack, stump sequence of landforms. Good answers drew on examples of actual rock types and structures to demonstrate their effect on both plan and profile forms. They also addressed 'the extent to which they determine' them by also demonstrating the role of wave action and sub aerial processes as well as human activities.

Hazardous environments

As in previous years, this option was a very common choice of Centres.

Question 5

- (a) Tropical storms (hurricanes) were generally better understood than tornadoes. This was expected but both types needed to be covered for full credit and some candidates omitted to do this. Others regarded them both as the same type of weather system or that tornadoes were merely small hurricanes. As ever there were good answers where candidates gave clear descriptions and explanations of the main characteristics of each. Some candidates would have done better if had covered the basic elements such as the extreme low pressure in hurricanes, the calm eye, high velocity winds, torrential rain and storm surges. In the case of tornadoes there was similarly a lack of clear description of their characteristics by the majority of candidates. In the best answers candidates gave appropriate brief explanations.
- (b) Candidates should know which areas are at most risk from the hazardous effects of hurricanes and the reasons why, i.e. that hurricanes develop over warm oceans and move westward to affect the eastern seaboard of land masses or islands within a relatively narrow latitudinal belt. Similarly, vulnerable coastal areas are those that are heavily populated and low lying such as Bangladesh. Most candidates knew of 'tornado alley' but explanations for that location were generally muddled with only a few candidates revealing a clear understanding of weather phenomena which might lead to tornadoes developing. Many answers concentrated on the second demand to give extended accounts of the reduction of the impact of each type of event. Good answers had



accurate detailing of measures such as methods of prediction and warning and appropriate infrastructures and drew upon valid examples and which demonstrated well the extent of possible reduction measures. Good points were made by comparing the differences between MEDCs and LEDCs.

Question 6

The most frequently answered question in the whole examination.

- (a) This was generally quite well answered with some being of outstanding quality. It proved a good test as to how well candidates could organise their knowledge to both describe and explain the distribution of earthquake epicentres within the constraints of a part (a) question. The best candidates were able to link effectively the distribution of epicentres to different types of tectonic plate boundaries as well as to their global location, e.g. the Pacific ring to principally destructive boundaries and the mid-Atlantic ridge and African rift valley to constructive margins and so on. Weaker answers tended to be accounts of the three principal plate boundaries, with varying degrees of accuracy, and little reference to distribution.
- (b) An excellent or good answer to part (a) was not always followed by an answer of similar quality in part (b). The majority of answers were rather general in approach. As has been commented on in previous examinations, the effects of hazardous events listed by many candidates could apply universally and not be linked to the specific type of hazard in question. For example, many candidates stated that earthquakes cause widespread death and destruction often followed by collapsing services and diseases but these effects could apply to hurricanes, tsunamis and volcanic eruptions. The question demanded 'why are earthquakes hazardous?' Answers should have included earth shaking, with the side to side movement of S waves added for good answers. The scale of an earthquake and its location determines why it might be hazardous as might secondary hazards from liquefaction and landslides. These could then lead to collapsing buildings and so forth. The second demand of the question required precision in responses and fine detail of how can earthquakes be predicted and the reliability of such predictions. Too many candidates wrote that seismographs can be used to predict earthquakes as could Richter scales, satellites and computers but very rarely how. The other common misunderstanding was to attribute success to such methods whereas in practice prediction is still very problematic i.e. in addressing the question of 'to what extent?'

Arid and semi-arid environments

Question 7

- (a) This question required both description and explanation and few distinguished effectively between hot arid and semi-arid climates. Descriptions were often adequate with the better ones backing them up with appropriate data and including both arid and semi-arid climates. However, explanations were frequently absent or minimal. Only in the few very good answers did candidates give a clear account of the sub-tropical high pressure zone where descending air is warmed and similarly show understanding of the effect of cold ocean currents off the western areas of continents. The effects of rain shadow and continentality were generally better explained.
- (b) In many answers, ecosystems were not the basis of answers even though they were the focus of the question. Often there were full, and frequently very good, responses in terms of vegetation but with soils and animals receiving minimal attention. It is appreciated that vegetation provided more scope for description, and this was allowed for in the assessment, but soils and fauna needed to be covered adequately for candidates to achieve good credit. Soils were often merely described as dry and sandy rather than with characteristics such as lacking in humus, upward capillarity, salty and lacking horizons and structure (solonchaks). Similarly few candidates could go beyond camels as examples of desert fauna or acknowledge that there is variation from one desert to another.

Question 8

- (a) There were relatively few attempts at this question. This question required candidates to draw a diagram showing and identifying the prominent landforms such as the dominant mesa or the butte and mountain front in the background of the photograph and the rock strewn pediment in the foreground. The pediment was recognised by many but ignored by others and very few identified the butte, let alone the different slopes within it. Candidates were expected to produce just basic



line drawings with appropriate labels of what should be familiar arid landforms. Explanations needed to be less general terms and use appropriate terminology. Many candidates wrote about desert landforms that they knew of, regardless of their appropriateness to those in the photograph, so candidates do need to look at the resources provided and make use of them. There were however a few good responses where candidates revealed that they could recognise a range of desert landforms and provide acceptable ways in which they might have been formed. The standard of the required diagram was poor in most cases.

- (b)** This part of the question was generally better attempted, although there was a wide range in the quality of responses. There were some good accounts of operations in the Negev, the Gezira project and along the Nile. Often though, the approaches were in too general terms e.g. with regard to irrigation and agriculture. Others were untenable suggestions for development in arid or semi-arid areas such as the introduction of industries, tourism and mining without regard to the nature of the environment or resources. Only in very few answers did candidates attempt to evaluate any developments in terms of sustainability.

GEOGRAPHY

Paper 9696/23

Advanced Physical Options

General Comments

The overall standard was in line with that of last year's examination but with the usual wide range in the quality of answers within it. In the better scripts, candidates not only displayed a sound knowledge and understanding of physical geography of an 'A' level standard but also used appropriate terminology in their answers, and were precise in their descriptions and explanations. A lack of accurate and/or fine detail was typical of the weaker candidates. As has so often been the case in past examinations, the better answers were those that addressed the specific demands of the question. All candidates need to pay close attention to the command words such as 'describe', 'explain', 'evaluate', 'identify', etc. Examiners setting questions never require candidates to simply 'write what they know about a topic'. Unfortunately weaker candidates were keen to do just that.

The division of the questions into two parts did seem to pose a problem for many candidates. Parts (a) tested basic knowledge requiring candidates to offer identification, descriptions and or explanations and comparisons of some part of the syllabus content. A large number of candidates expanded their answers beyond what was required for what was two fifths of the total question marks. This often led in such cases to limited responses to parts (b). Also most parts (b) demanded some evaluative element in answers; too often this aspect of the questions was not considered sufficiently, with the inevitable impact on the marks obtained.

In this paper most Centres selected coastal and hazardous environments. There were some combining tropical environments with hazardous ones but answers on arid and semi-arid environments were almost totally absent. Examiners felt that some candidates had chosen to answer one of their questions outside of their studied environment, perhaps thinking it was more accessible. In such cases, where candidates were relying on some earlier and lower level study, they were ill equipped to tackle the topic at 'A' level with, inevitably, a consequentially weak answer. There were very few infringements of the rubric. The most common infringement was to answer a question from each environmental option. There were also one or two cases where candidates had married a part (a) answer from one question with a part (b) answer from the alternative question. In such cases only the part scoring the higher mark was credited.

The use of appropriate and well documented examples, or case studies, were again a feature in many of the more successful answers. Well executed and accurate diagrams also marked out many of the better answers. One of the questions demanded a diagram but some candidates did not give sufficient attention to its importance as part of their answer. Apart from such a specific demand to include a diagram, their inclusion in other answers often demonstrated, or confirmed, a candidate's depth of knowledge and understanding.

Comments on specific questions

Tropical environments

Question 1

- (a) Although candidates knew of tropical monsoon climates' fundamental seasonal nature, very few could explain it i.e. that it was generated by a combination of the movement of the ITCZ and seasonal heating and cooling of continental land masses to create alternate low and high pressure systems. Examiners expected simple diagrams, or maps, illustrating, say, the Indian sub continent, with pressure and wind systems clearly shown and the reversals indicated. Even without satisfactory explanations most descriptions were very general and lacking in hard data of temperature and rainfall.



- (b) Nearly all the candidates answered this part question with respect to tropical rainforest ecosystems. There were some very good responses to this where candidates appreciated that it was due to the nature of nutrient recycling within the ecosystem, i.e. that it was difficult to manage it in a sustainable way as most nutrients were stored in the biomass; any destruction of the forest would put the whole ecosystem under threat. Any management for human productivity becomes problematic but may be possible with selective felling or low density clearance. This was rarely appreciated by candidates and the majority of answers followed a familiar pattern of destruction of the rainforest with little attention being paid to the specific demand in the question.

Question 2

- (a) The comparison part was achieved fairly successfully, though with varying degrees of detail provided and there was a wide range of quality in responses to 'account for the differences'. Better answers showed an understanding of the replacement of the large biomass in forests by crops, and that they were removed from the cycle by harvesting. The impact on soil and litter stores was little appreciated by the majority who should have stated that the loss of nutrients through the soil to groundwater and eventually rivers has a major effect on sustainability and gone on to explain why.
- (b) This was an area of the syllabus that had been well covered by the majority of candidates. However, although there was much sound knowledge of granite landforms and the processes leading to deep weathering under tropical climatic conditions, explanations of the term basal surface of weathering were more limited. Nevertheless, with the help of diagrams, the emergence of landforms with the basal surface profile was generally satisfactory. The range of quality related to detail such as the importance of joint patterns in determining the form of the BSW and the resultant specific landforms. Accurate detailing of processes and stages also marked out the more successful answers.

Coastal environments

Question 3

- (a) Swash and backwash were generally well understood and linked in most cases to specific types of wave, i.e. constructive and destructive. The differences in responses were with the formation of beaches. Although it was appreciated that swash in constructive waves was stronger than backwash and led to the building up of beaches, too often candidates related that to a gentler beach profile. Diagrams of the two types of wave and beach profiles frequently contradicted the statements in their text. Similarly, destructive waves with strong backwash were all too often equated with a steepening of beaches rather than a levelling out. Although there was a degree of understanding of swash and backwash and some very good accounts, this was not so with refraction. In most answers refraction was only demonstrated in terms of the approach of waves (orthogonals) to headlands with subsequent erosion emphasised. Unfortunately the refraction of the waves leading to longshore drift into the bays and determining the form of bay head beaches was rarely demonstrated. This revealed that for many candidates the term 'beach' is not fully understood as it was often taken to be synonymous with 'coast' or 'coastline'.
- (b) Most candidates were able to provide basic to satisfactory answers with some showing a good understanding of the physical conditions necessary for corals to survive. A range of threats were given with an emphasis from many on mechanical threats due to fishing (dynamiting and trawling), tourists and coral mining. Complete answers also recognised changes in oceans from rising temperatures, increased CO₂, storms and alien species. It was the second demand; 'to what extent can these threats be overcome' that was not so well addressed. The better answers made use of specific examples to illustrate measures such as education, designating protected zones such as the Great Barrier reef, effective policing and imposing penalties, etc.

Question 4

- (a) The demand for a sketch diagram resulted in a wide range of responses. Good diagrams were based on the photograph but Examiners were surprised by the number which were of a text book type illustrating the suite of cave, arch, stack and even stump (not in the photograph). These were acceptable to an extent but reflected a lack of thought on the part of candidates. This was further confirmed as many omitted to include the vertical cliff and wave cut platform. Similarly with explanation, only in the better answers were candidates attempting to explain the range of coastal landforms in question. Many wrote of the headland in terms of hard and soft rock, whereas it had



been clearly stated that it was a chalk coastline. Good candidates recognised the importance of structure in explaining the features, horizontal bedding and likely vertical faulting. Active and rapid wave erosion and removal of debris were advanced to explain the cliff profile. Thus in good answers candidates went beyond just the stack and arch in attempting their explanations.

- (b) This proved difficult for many as they were unable to explain clearly what was meant by a coastal sediment cell. Briefly sediment cells involve the acquisition, transportation and deposition of sediment in well defined cells along coastlines with relatively little transfer of sediment between cells. However, the second demand was more successfully met and in better answers, candidates used a stretch of coast which had been studied in detail, either from fieldwork, or, from texts and maps. Typical answers to this second part consisted mainly of accounts of hard and soft engineering projects with groynes, sea walls and other structures dominating. The need for these from possible earlier human activities such as harbour or breakwater construction or even damming along rivers were rarely advanced. In good answers, candidates documented case studies with such examples as mentioned, or dredging and beach removal, and how these impacted on the sediment cell.

Hazardous environments

Question 5

- (a) Considerable knowledge of volcanoes was evident, but many candidates were keen to demonstrate all of this at the expense of addressing the specific demands of the question, as well as using more time than warranted for a part (a) question. The majority of candidates appropriately related the distribution of volcanoes to plate boundaries with the Pacific ring and mid-Atlantic ridge exemplifying two major types. Better candidates were also aware of hot spots and volcanic plumes. Some basic explanation of how eruptions occur met the second demand but many candidates took that as an opportunity to write extended accounts, with details of the effects of eruptions which should have been addressed in part (b). Most illustrated their answers with diagrams for which credit was given.
- (b) As has been commented on in previous examinations, the effects of hazardous events listed by many candidates could often apply universally and not be linked to the specific type of hazard in question. The answer then is not simply because volcanoes cause widespread destruction, loss of lives to humans and livestock and lead to a breakdown of services and infrastructure and diseases. These effects could also be caused by earthquakes, hurricanes and tsunamis, etc. The answer as to why volcanic eruptions are hazardous was because of the nature of the materials ejected and so on. Naturally the effects are relevant but too many candidates were keen to detail effects rather than the causes of them. Good answers did give full and accurate accounts recognising the relative hazardous nature of different types of eruption and ejecta as well as secondary threats such as lahars. Candidates should avoid being too general in their detailing of the methods of prediction by stating that seismographs, satellites, tilt meters were used. They then need to state how, i.e. to detect movements (minor tremors), ground deformation and warming. Similarly with other indications whether they be geothermal, chemical or even animal behaviour, there was generally a lack of accurate detailing. The degree of success was well exemplified by the better candidates with reference in most cases to either Pinatubo or Mount St. Helens. Weaker candidates need to learn to provide worthwhile evaluation on the effectiveness of methods of prediction



Question 6

- (a) The causes of tsunamis were far less well understood than other types of hazardous events such as earthquakes, volcanoes and tropical storms. Most candidates knew that some disturbance of the ocean floor, either from earthquakes or volcanoes, was the cause but rarely how a tsunami developed into a large wave impacting onto coastal areas. As with many answers to **Question 5(b)**, candidates wrote at length about the death, disease and destruction of an event, often with reference to the Indian ocean tsunami of December 2004, but too little of the hazardous effect, i.e. that when a tsunami hits a shallow coastal coastline it produces towering waves of massive strength that sweep all before them; vegetation, buildings and other structures and drowning many people in a raging torrent of water.
- (b) There were a few candidates who revealed understanding which reflected good knowledge of a case study that they applied effectively. Some wrote about recent events such as the Haiti earthquake to good effect and whilst river floods are not part of the syllabus, the Pakistan floods provided a good example. In neither case has there been a return to normality, but candidates were still able to achieve Level 3 without reference to every stage. What other candidates found difficult was in relating the model provided to the chosen example or examples of a natural hazardous event. Some merely took statements directly from the diagram to put into continuous prose with no or very little reference to an event or events.

Arid and semi-arid environments

There were so few attempts at either of the questions that generalisations are inappropriate. Suffice it to state that such attempts as were made were of poor quality.



GEOGRAPHY

Paper 9696/31
Advanced Human Options

General comments

This was the second examination in 2010 of the revised 9696 syllabus. The question paper comprised a large number of elements of continuity of content from the previous 9696 syllabus and some elements of change.

The Insert contained a mixture of styles of resources of the sort which teachers should include in their preparation of candidates. These skills are important and include: interpreting pie charts and absolute and relative data (Figs. 1A and 1B for **Question 2**); interpreting data located on a map and giving an overview supported by information from the resource (Fig. 2 for **Question 4**); taking information from a web page (Fig. 3 for **Question 6**); and reading a graph for range and for variation (Fig. 4 for **Question 8**). Teachers are encouraged to use the Inserts from each paper in their teaching in order to familiarise candidates with the style and demand of the different types of resources used.

There were three key issues arising from the assessment. Firstly, there was noticeable improvement in candidates' response to unfamiliar contexts. These require answers using geographical understanding applied to locations or situations which are unlikely to be known or to have been studied. One example was **Question 6 (a)** about tourism in Antarctica. The second key issue follows from this in that many candidates' examination performances were improved by less obvious dependence on recall knowledge of case studies in response to parts **(b)** of questions, without paying attention to the actual question set. The selection, application and direction of learned material to answer the question's specific demand are important skills at A Level. The simple demonstration of the material that candidates can remember may be of limited relevance to the question and so achieve few marks. The third key issue was that some candidates did not respond appropriately to topics introduced in the revised 9696 syllabus. One such instance was in relation to Fair Trade in **Question 5 (a)**. This is addressed in detail in the question-specific comments that follow.

Two matters of examination technique could help a small proportion of candidates perform better. The first is to understand and follow the rubric in answering two questions only, each from a different Option. Some candidates each session answer three or four questions and can only have the better two marks counted. The second matter of technique is that all parts **(b)** and most parts **(a)** require written responses in the form of extended writing. Points, notes or bulleted points should only be used where there is not enough time to develop a written response in full. In parts **(b)** the levels descriptors limit note-form responses to the Level 1 mark band (0–6/15) as ideas cannot be developed and linked sufficiently using this approach.

Comments on specific questions

Production, location and change

Question 1

- (a)** An effective response depended on the correct definition of *extensive* farming. This is production which involves a large area of land, across which inputs are spread thinly and from which low output per unit area is produced. Some candidates confused scale and intensity and included large scale but intensive systems in their response such as wet-rice or plantations. These answers were awarded generic credit of up to 4 marks. Generic credit is given when the observations made would apply to the correct example had it been chosen. Across the entry, responses explained a variety of changes to extensive farming, such as the transition from subsistence to commercial production, the settling of nomadic pastoralists, or the diversification of monocropping, for example wheat production in the Canadian Prairies. Some good responses were seen which offered reasons for these changes, from increasing population and greater associated demand for food, to government policy, such as the pursuit of an export market for agricultural products. Some

candidates did not give attention to the reasons why extensive farming is changing, as well as how. It is important in any response that a candidate addresses all the elements that make up the question.

- (b) The highest-scoring responses were framed as an assessment, taking the start of the question, 'Assess the role of the government...' as the organising principle throughout. This naturally led to analysis of what the government did (and did not) do, and what it did (and did not) achieve in the chosen case, as well as to the consideration of the role of other groups of people, such as the farmers themselves and their attitudes to change. Middle-scoring responses tended to be more narrative, describing and explaining agricultural change using government as the filter for the selection of information to include, and leaving any assessment to a brief introduction and a concluding summary. In order to improve responses to this kind of question in future, it may be helpful to note two things. Firstly, that when the question says 'in **one** country' it means in one only. If more than one country is taken, either by using two different examples or by taking a region, such as the European Union, Examiners will only credit the mark for the better or best country. Secondly, the key words of the question provide the necessary direction and structure for the response; in this case 'Assess' as the command word, the words 'role' and 'government', and the phrase 'promoting agricultural change'. One Examiner reported the large number of 'descriptive accounts of farming change'.

Question 2

- (a) (i) This was answered effectively by many candidates. They interpreted the divided proportional circles in Figs. 1A and 1B well and gave concise and suitably analytical summaries of the changes shown. These changes included the total production of crude steel (the numerical values given next to the year date) and the significant locational shift away from the EU and NAFTA to China (23% absolute, or approx. 250% relative, increase). Descriptions which simply rewrote some or all of the data in words, without using analytical vocabulary, achieved fewer marks.
- (ii) This element required an explanation using wider knowledge and understanding about production, location and change in manufacturing industry rather than any direct study of the steel industry itself. The question contained two helpful key ideas to stimulate and direct candidates' thinking: 'closure' being one and 'small-scale producers' the other. Many recognised this and offered effective suggestions about what brings firms to the point of closure and how large-scale producers can compete with, and win against, small-scale producers through capacity, their dominant market share, economies of scale, etc. Some candidates associated the 'small-scale producers' of the question with the places in Figs. 1A and 1B with small percentage shares. This was not intended as the word 'closure' would not be associated with a country, continent or world region, appropriately. Many of the suggested explanations remained valid, only those which were attempted for a named place, for example Africa, which appeared in 'Others' with a declining percentage share, tended to receive low rewards.
- (b) Classically, port locations offer ease of transport, both for the arrival of raw materials and components, and for the despatch of finished or assembled products, by ship. Many candidates developed this theme and contrasted the relative ease of port transfers, especially since containerisation, with the relative difficulty of road transport in many countries and the unsuitability and relative expense of air transport for manufactures, naming one or more examples of ports. For some candidates this made up the whole response. Others developed the explanation further to include advantages such as ports' export processing zones (EPZs) and industrial estates as locations with specific benefits and incentives; a large, fluid and specialist labour pool; functional linkages; agglomeration economies, etc. High-scoring accounts maintained a focus on 'advantage', were careful in relating to a port location (sea or river), rather than simply a coastal one, and used one or more examples of a port in some detail. This detail might include named areas, such as docks, the waterfront or harbour, named industries, specific products, bodies such as the port authority, statistics or events. At the lower end of the mark range, there were rather loosely worked descriptions which stated or speculated on what use a port location might be. Two common misconceptions were that HEP can be generated at the coast and that sea water (saltwater) is a useful source of water as an input for manufacturing processes.

Environmental management

Question 3

- (a) Some candidates started their response with a definition of sustainability. This set it up well and gave a context for the explanations which followed. The Brundtland definition is the one which has been associated with 9696 from the start, which is development which meets present needs without compromising the ability to meet the needs of future generations. As expected in this Option, the appropriate focus was environmental sustainability, although comments about economic sustainability, such as the costs of fuel imports, and of social sustainability, such as the implications of air pollution or nuclear waste disposal for health, were creditable. In (i), for 'the most ... sustainable', Examiners accepted any type of renewable energy, or nuclear energy, if it was argued carefully in relation to management issues and an assured and long-lasting energy future. For (ii) 'the least ... sustainable', a fossil fuel (coal, oil, gas) or nuclear energy was accepted, as was fuelwood. Explanations which demonstrated a few aspects of the sustainability – or unsustainability – of the chosen type of energy production in a focused and specific manner, with some detail from a known location, installation or country's programme, readily achieved full marks. This included both the issue of depletion and of environmental impact (pollution and/or degradation). Moderate accounts tended to be firm in understanding but to lack breadth or supportive detail. Low-scoring responses often gave the opposites in (ii) of what had been written in (i) and could have been about any renewable or fossil fuel. A small number of candidates, rather than choosing a single type of energy, chose the groups 'renewable energy' and 'fossil fuels', or wrote mixed accounts, such as 'solar and nuclear' and 'coal and oil'. In these cases the Examiners credited the best single type of energy contained in each sub-part, which inevitably yielded few marks. One misconception was that the term *sustainable* simply means long-lasting.
- (b) This was answered well by many candidates and good understanding of renewable energy and of the constraints on its development was demonstrated. Responses which achieved Level 3 awards showed a strong overall perspective of energy as a global issue, 'in MEDCs and LEDCs'; understood 'potential' as a concept robustly; brought out clearly the emphasis in the question, 'only partly developed', in a dynamic manner; and often made use of up-to-date examples of schemes and plans. The majority of candidates received awards in Level 2, for accounts which were sound but limited in some way, such as in breadth or in detail. Responses which achieved awards in Level 1 were faulty in knowledge and understanding, for example by considering gas (a fossil fuel) rather than biogas; mistaken in approach, for example describing one or more schemes such as the Three Gorges HEP in China, or Kariba on the Zimbabwe/Zambia border; or note-form, consisting of points rather than extended writing in sentences and paragraphs.

In relation to energy production, *potential* is defined as where there is known capacity to develop a form of energy with the technology currently available. This may be on land, or sometimes at sea, for example in relation to wind farms. This potential therefore changes as technology changes and as further surveying and exploration are done. Many candidates wasted time writing about situations where there was no potential for renewable energy, in this technical, robust, sense of possible development, and so, where, unsurprisingly, development had not occurred. This misconception can be illustrated by quoting from one essay, 'HEP has not been built because there are no suitable rivers'. If there are no suitable rivers, there is, technically, no potential.

The quality of responses could be improved in the following two ways. Firstly, by encouraging candidates to stand back and take an overall view of the subject matter. This not only demonstrates a particular creditable skill but also avoids repetition and saves time. Many accounts took a number of types of renewable energy one by one, offering the same or very similar explanatory reasons for partial development for each (lack of finance, lack of technology, lack of skills/expertise, other priorities). A response which took these constraints as the subject matter of four main paragraphs, and supported each reason with one or more examples from different examples and locations, could achieve high reward. Secondly, responses could be improved by training candidates to produce answers which reflect the specific demand of the question set. Here, the focus was 'only partly developed'. The best answers had a clear 'so-far-but-no-further (yet)' tone. In contrast those that were about the success of a major installation, or problems of maintaining the production of renewable energy, did not show the right emphasis or skills in selecting and directing learned material to the actual question set in this examination. Some candidates approach was mistaken in addressing what had been achieved, rather than picking up the emphasis on the partial nature of development so far.



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This was less well answered overall than **Question 3**, with few top quality responses. Many candidates seemed to find both interpreting Fig. 2 evaluatively in **(a)** and the issue of scale in **(b)**, challenging.

- (a)** Overcoming water pollution and improving the quality of a degraded environment are two themes in this Option. Fig. 2 offered a different approach to them, through close reading and analysis of a resource. The mapping was unusual, with its located 'streams' arranged by date (1975 and 1989), pollutant (A to E) and water quality (colour coded classes 1–4). As in other questions high quality responses demonstrated an ability to 'stand back' from the detail and assess the context and outcomes overall. It was perhaps easiest to consider colours and then back this up with detailed evidence from Fig. 2. So, for example, some observed that, north of Düsseldorf, whereas in 1975 all five elements showed *sections of 3–4* (between extremely polluted and very polluted), by 1989 this had been reduced significantly in all except nutrients (B) towards the river's mouth, although oxygen content had, in the same section actually deteriorated over the 15-year period, by one class. Some candidates began ambitiously in a very detailed manner and then realised that there was not the time to follow this through and so wrote impressionistically or stopped abruptly in order to move onto **(b)**. Low-scoring responses tended to be descriptive, some writing separately first about the situation in 1975 and then about it in 1989, maybe simply writing that the Rhine Action programme was – or was not – a success. Most interpreted the map effectively, recognising that the Rhine was flowing from the lower edge towards the North Sea and so understood the cumulative effect of pollutants downstream from the 'effectively pollution-free' *sections (1)* south and east of Freiburg. Some of the best accounts contained observations that there was still work to be done or that other evidence would be useful, such as information about fish populations or visual pollution, such as from floating wastes.
- (b)** This part of the question opened out from **(a)**, and having considered the Rhine in detail, asked candidates to consider what makes managing water quality in a large river a challenge. Fig. 2 could be used as a stimulus and as a source, but could now be ignored legitimately. Many candidates, for example, observed on the map the complexity of so many major towns along one river with potentially polluting activities and the great difficulty of pinpointing a pollution source. Some made no mention of the Rhine and instead used other examples of large rivers to support their reasoning, such as the Nile or the Ganges in LEDC contexts. The best responses built up an interactive and dynamic web of reasons which combined to be challenging, from a variety of sources of pollutants to high costs, from accidents after which pollutants work all the way downstream to the need for co-operation between many interested parties, across national borders and over long time periods. At the lower end of the answer spectrum there was little appreciation of either scale, with the writing being about water pollution in general, or of management issues. Given the management emphasis in both the Advanced Physical Options and in these Advance Human Options, teachers are advised to explore what management involves in different environments.

Global interdependence

Question 5

- (a)** The topic of Fair Trade (or Fairtrade, as it is sometimes written), is an important one in the global economy as it links producers and consumers in fair and ethical ways. It should not be confused with free trade, the liberalisation of world trade, as promoted by the World Trade Organization (WTO) and other groups. Fair Trade is defined by FINE (the grouping of four key fair trade organisations) as, 'a trading partnership based on dialogue, transparency and respect that seeks greater equity in international trade'. Fair Trade involves a growing number of primary products produced in LEDCs and consumed in MEDCs, such as tropical fruit, sugar, beverages, and raw materials, e.g. cotton. It has a number of aims, including fairer trading, for example with fewer middlemen profiting from the exchanges; a better price for producers; and empowering producers



to improve their lives and those of their families and communities. More widely, Fair Trade initiatives aim to challenge conventional (and unfair) trading, to campaign for change and to widen the programme of Fair Trade certification and labelling of products with its distinctive logo. Candidates could be encouraged to research one product or initiative at both the producer end (LEDC) and the consumer end (MEDC), see, for example <http://www.fairtrade.org.uk> as a starting point. Some effective work was seen, for example in relation to the example of fair trade bananas. The majority of responses were wrongly directed and about free trade, not fair trade. These answers were awarded generic credit of up to 4 marks. Generic credit is given when the observations made would apply to the correct context (in this case, Fair Trade) had it been identified.

- (b) The full range of answer quality was seen in response to the classic issue of trade and aid. Most candidates offered an opinion, although the extent to which this was supported with argument and evidence varied greatly. It is accepted at this level that opinions may vary about such an issue and so no particular viewpoint was expected nor seen as correct. Responses which achieved Level 3 awards were distinguished by their overall perspective, organisation and the ability to integrate content about trade and aid throughout, drawing on examples to support the points made. Much exemplification was impressively up-to-date, for example in relation to the Haitian economy and aid received in the aftermath of the earthquake of January 2010. Some used home country examples effectively and with understanding, for example of recently-brokered trade agreements or specific projects and initiatives funded by NGOs. Middle quality responses often treated trade separately from aid, considering the advantages and disadvantages of each, before making a summarising evaluation. In developing examination techniques, this approach could be shown to be quite time-consuming, one which may involve repetition and which demonstrates knowledge more readily than the skills of assessment which form the basis of parts (b). Most candidates proposed that trade is better than aid, some adding the broad qualification that it depends on what type of trade and what type of aid or the specific one that emergency aid is necessary and saves lives. The performance of candidates at the lower end of the mark range could be improved in two ways: firstly, with fuller knowledge of what the terms *trade* and *aid* cover and, secondly, with the development of skills in, and the vocabulary for expressing, assessment.

Question 6

- (a) There was no expectation that Antarctica would be known to candidates, other than as a continental polar wilderness of rock, ice and snow. If candidates wrote about the local population (of which there is none), or made some factual mistake, such as about building hotels, Examiners simply ignored the error rather than penalising it.
- (i) Some credit was given to reasons for the growth of tourism that could be derived from Fig. 3, such as improvements in transport and promotion by a large number of IAATO-affiliated tour operators. To achieve full marks, as many did, further reasons were needed in relation to demand and to supply. Demand covered reasons which included growth in affluence, the desire for new and unusual experiences, a growing interest in visiting wilderness and media coverage, for example in relation to the impacts of global warming and the melting of glaciers. Supply covered reasons such as internet promotion and the availability of new Antarctic cruise packages.
- (ii) Candidates' responses were differentiated by the conceptual understanding shown of actual or potential environmental impact and the ability to develop an explanation which consisted of three or more separate points. The best responses recognised carrying capacity as a key idea and the limited potential of this unique and fragile wilderness environment to receive visitors without being damaged. This damage might be pollution, for example by litter or ship wastes; degradation and deterioration in quality, such as through trampling or vehicle tracks; and impacts on wildlife, for example visitors' disrupting the daily life of penguins or their breeding cycles. The regulation brought through the Antarctic Treaty means that Antarctica should be managed sustainably and this is a further reason why it is now believed that numbers of visitors should be limited.
- (b) Whilst all candidates taking this Option would have studied the decrease in tourist numbers, as well as the more commonly studied, increase, few seemed to have considered this previously and it seemed that most had to work out for themselves how to answer this part in the exam. The full range of quality was seen, from assured and analytical overviews, supported with detailed and up-to-date examples, to responses in which, despite the actual specific demand, a learned case study was reproduced, for example of the tourism life cycle in a destination such as Goa, India, or the Costa Del Sol, Spain. In such accounts Examiners credited points which were relevant, not simply

the content that was factually correct. The majority of accounts were, in effect, developed lists of appropriate 'circumstances', such as civil war, disease outbreaks, hazardous events, changes in fashion and shifts in exchange rates. The better ones developed each briefly in a perceptive manner and used one or more recent events as evidence. Some were able to offer data in support of the comments, for example of percentage downturn in arrivals in Mauritius as a result of the global recession, or loss of income in dollars after the 9/11 terrorist attacks in the USA. Weaker accounts tended to be repetitious, 'Another circumstance ... Another circumstance ...', and either to be general or to use contemporary examples in an undiscerning manner. So, for example the tourism trade of countries such as Afghanistan, currently at war, was never great and the term *resort* cannot be used easily there. In contrast, Haiti, which experienced a major earthquake in January 2010 followed by a cholera epidemic was in the involvement/early development stage of the life cycle model as a new Caribbean destination before this happened. Some candidates made appropriate use of seasonality as one circumstance by which tourist arrivals decrease. This is true both of the climatic seasons in the tourist destination, such as a wet season in the tropics or the end of the snow in a ski resort, and of the holiday seasons in the main source areas for visitors, such as Europe or North America.

Economic transition

Question 7

- (a) (i) No set definition of the term *foreign direct investment (FDI)* exists. Prepared candidates were able to express both the element *foreign* and that of *direct investment*, effectively.
- (ii) FDI is one form of global capital flow. The example taken for the answer could be actual or generic. For example, the decision of Toyota, a TNC, to establish a car assembly plant in Thailand, represents outward FDI for Japan and inward FDI for Thailand (or the Thai economy).
- (iii) FDI is discouraged by a variety of 'political and economic circumstances'. A full response comprised at least three different circumstances outlined, covering both dimensions. Most candidates were able to identify political circumstances, such as civil war, instability, regime change or extreme nationalism; and economic ones, such as recession, debt, adverse exchange rates and the removal of incentives, e.g. tax reductions and subsidies. The command word 'outline' does not require detail, only some development of the point, such as how the circumstance operates or an example of where it occurred.
- (b) The spatial division and organisation of TNCs is fundamental to their global operation and continuing profitability in the competitiveness of the global economy. Most candidates recognised the significance of the new international division of labour (NIDL) and the fragmentation of production into its constituent elements each in a low cost location. Many also observed that TNCs have strategies to penetrate new markets, for example locating a vehicle plant within the European Union (EU) in order to trade preferentially with all member countries. Some candidates used a case study of a TNC, or different examples, to reinforce these points and to develop a spatial argument further. The quality of many responses could have been enhanced both by this kind of support and by careful consideration of the key idea of 'spatial structure' as this would have helped overcome generalisation on the one hand and an unselective and narrative approach on the other.

Question 8

Some candidates appeared to have been attracted to this question by the prospect of gaining a few marks by interpreting Fig. 4 and, in choosing this question, perhaps did not give sufficient attention to considering the demands that followed.

- (a) (i) The resource appeared simple but required careful interpretation, from left to right across the development spectrum (MEDC/NIC/LEDC), and from top to bottom to consider the disparity between the richest 20% of people and the poorest 20% of people within an individual country. Many correctly identified the greatest disparity being within Brazil, an NIC. A full response required 'evidence' from Fig. 4, that is country names and/or data support. If a candidate only took the highest and lowest instances, Examiners awarded a maximum of 3 marks given the richness of the information available.

- (ii) This kind of demand, asking about overcoming difficulties is a common one in all Options of this paper. It would naturally lend itself to a 'brainstorming' approach in class and to developing a spider diagram as one approach to structuring responses. The rich/poor content of Fig. 4 was intended to function as a stimulus to thinking about what is involved in overcoming disparities. Many candidates wrote explanations combining geographical knowledge and understanding with first-hand experience from their home country context of initiatives which failed or which were only partially successful. A variety of creditable reasons were given. These could be social, such as access to education or the functioning of elites; economic, such as indebtedness, or the way that financial institutions operate; or political, such as corruption, vested interests and power structures.
- (b) The term 'social and economic wellbeing' includes a number of attributes of life and was interpreted permissively by Examiners as covering a broad spectrum of attempts in different sectors such as health, education and infrastructure (water, power, accessibility/transport). Only a small proportion of candidates recognised this demand for what it was and provided an assessment of one or more appropriate examples, such as the provision of a safe piped water supply to a squatter settlement, or of schooling for girls in a culture where males are traditionally dominant. Most responses drew on studies of overcoming regional disparities to try to demonstrate how wellbeing improved over time in that region. To perform well, this required skills in selecting, directing and applying learned material to the specific question set with its focus on 'social and economic wellbeing' rather than whether the region(s) 'caught up' or not within the chosen country. A number of weak and quite narrative accounts were seen where the assessment was, as a consequence, misdirected. Teachers and candidates should note that a question on regional disparities will not appear every examination session within this Option.

GEOGRAPHY

Paper 9696/32

Advanced Human Options

General comments

This was the second examination in 2010 of the revised 9696 syllabus. The question paper comprised a large number of elements of continuity of content from the previous 9696 syllabus and some elements of change.

The Insert contained a mixture of styles of resources of the sort which teachers should include in their preparation of candidates. These skills are important and include: interpreting pie charts and absolute and relative data (Figs. 1A and 1B for **Question 2**); interpreting data located on a map and giving an overview supported by information from the resource (Fig. 2 for **Question 4**); taking information from a web page (Fig. 3 for **Question 6**); and reading a graph for range and for variation (Fig. 4 for **Question 8**). Teachers are encouraged to use the Inserts from each paper in their teaching in order to familiarise candidates with the style and demand of the different types of resources used.

There were three key issues arising from the assessment. Firstly, there was noticeable improvement in candidates' response to unfamiliar contexts. These require answers using geographical understanding applied to locations or situations which are unlikely to be known or to have been studied. One example was **Question 6 (a)** about tourism in Antarctica. The second key issue follows from this in that many candidates' examination performances were improved by less obvious dependence on recall knowledge of case studies in response to parts **(b)** of questions, without paying attention to the actual question set. The selection, application and direction of learned material to answer the question's specific demand are important skills at A Level. The simple demonstration of the material that candidates can remember may be of limited relevance to the question and so achieve few marks. The third key issue was that some candidates did not respond appropriately to topics introduced in the revised 9696 syllabus. One such instance was in relation to Fair Trade in **Question 5 (a)**. This is addressed in detail in the question-specific comments that follow.

Two matters of examination technique could help a small proportion of candidates perform better. The first is to understand and follow the rubric in answering two questions only, each from a different Option. Some candidates each session answer three or four questions and can only have the better two marks counted. The second matter of technique is that all parts **(b)** and most parts **(a)** require written responses in the form of extended writing. Points, notes or bulleted points should only be used where there is not enough time to develop a written response in full. In parts **(b)** the levels descriptors limit note-form responses to the Level 1 mark band (0–6/15) as ideas cannot be developed and linked sufficiently using this approach.

Comments on specific questions

Production, location and change

Question 1

- (a)** An effective response depended on the correct definition of *extensive* farming. This is production which involves a large area of land, across which inputs are spread thinly and from which low output per unit area is produced. Some candidates confused scale and intensity and included large scale but intensive systems in their response such as wet-rice or plantations. These answers were awarded generic credit of up to 4 marks. Generic credit is given when the observations made would apply to the correct example had it been chosen. Across the entry, responses explained a variety of changes to extensive farming, such as the transition from subsistence to commercial production, the settling of nomadic pastoralists, or the diversification of monocropping, for example wheat production in the Canadian Prairies. Some good responses were seen which offered reasons for these changes, from increasing population and greater associated demand for food, to government policy, such as the pursuit of an export market for agricultural products. Some

candidates did not give attention to the reasons why extensive farming is changing, as well as how. It is important in any response that a candidate addresses all the elements that make up the question.

- (b) The highest-scoring responses were framed as an assessment, taking the start of the question, 'Assess the role of the government...' as the organising principle throughout. This naturally led to analysis of what the government did (and did not) do, and what it did (and did not) achieve in the chosen case, as well as to the consideration of the role of other groups of people, such as the farmers themselves and their attitudes to change. Middle-scoring responses tended to be more narrative, describing and explaining agricultural change using government as the filter for the selection of information to include, and leaving any assessment to a brief introduction and a concluding summary. In order to improve responses to this kind of question in future, it may be helpful to note two things. Firstly, that when the question says 'in **one** country' it means in one only. If more than one country is taken, either by using two different examples or by taking a region, such as the European Union, Examiners will only credit the mark for the better or best country. Secondly, the key words of the question provide the necessary direction and structure for the response; in this case 'Assess' as the command word, the words 'role' and 'government', and the phrase 'promoting agricultural change'. One Examiner reported the large number of 'descriptive accounts of farming change'.

Question 2

- (a) (i) This was answered effectively by many candidates. They interpreted the divided proportional circles in Figs. 1A and 1B well and gave concise and suitably analytical summaries of the changes shown. These changes included the total production of crude steel (the numerical values given next to the year date) and the significant locational shift away from the EU and NAFTA to China (23% absolute, or approx. 250% relative, increase). Descriptions which simply rewrote some or all of the data in words, without using analytical vocabulary, achieved fewer marks.
- (ii) This element required an explanation using wider knowledge and understanding about production, location and change in manufacturing industry rather than any direct study of the steel industry itself. The question contained two helpful key ideas to stimulate and direct candidates' thinking: 'closure' being one and 'small-scale producers' the other. Many recognised this and offered effective suggestions about what brings firms to the point of closure and how large-scale producers can compete with, and win against, small-scale producers through capacity, their dominant market share, economies of scale, etc. Some candidates associated the 'small-scale producers' of the question with the places in Figs. 1A and 1B with small percentage shares. This was not intended as the word 'closure' would not be associated with a country, continent or world region, appropriately. Many of the suggested explanations remained valid, only those which were attempted for a named place, for example Africa, which appeared in 'Others' with a declining percentage share, tended to receive low rewards.
- (b) Classically, port locations offer ease of transport, both for the arrival of raw materials and components, and for the despatch of finished or assembled products, by ship. Many candidates developed this theme and contrasted the relative ease of port transfers, especially since containerisation, with the relative difficulty of road transport in many countries and the unsuitability and relative expense of air transport for manufactures, naming one or more examples of ports. For some candidates this made up the whole response. Others developed the explanation further to include advantages such as ports' export processing zones (EPZs) and industrial estates as locations with specific benefits and incentives; a large, fluid and specialist labour pool; functional linkages; agglomeration economies, etc. High-scoring accounts maintained a focus on 'advantage', were careful in relating to a port location (sea or river), rather than simply a coastal one, and used one or more examples of a port in some detail. This detail might include named areas, such as docks, the waterfront or harbour, named industries, specific products, bodies such as the port authority, statistics or events. At the lower end of the mark range, there were rather loosely worked descriptions which stated or speculated on what use a port location might be. Two common misconceptions were that HEP can be generated at the coast and that sea water (saltwater) is a useful source of water as an input for manufacturing processes.



Environmental management

Question 3

- (a) Some candidates started their response with a definition of sustainability. This set it up well and gave a context for the explanations which followed. The Brundtland definition is the one which has been associated with 9696 from the start, which is development which meets present needs without compromising the ability to meet the needs of future generations. As expected in this Option, the appropriate focus was environmental sustainability, although comments about economic sustainability, such as the costs of fuel imports, and of social sustainability, such as the implications of air pollution or nuclear waste disposal for health, were creditable. In (i), for 'the most ... sustainable', Examiners accepted any type of renewable energy, or nuclear energy, if it was argued carefully in relation to management issues and an assured and long-lasting energy future. For (ii) 'the least ... sustainable', a fossil fuel (coal, oil, gas) or nuclear energy was accepted, as was fuelwood. Explanations which demonstrated a few aspects of the sustainability – or unsustainability – of the chosen type of energy production in a focused and specific manner, with some detail from a known location, installation or country's programme, readily achieved full marks. This included both the issue of depletion and of environmental impact (pollution and/or degradation). Moderate accounts tended to be firm in understanding but to lack breadth or supportive detail. Low-scoring responses often gave the opposites in (ii) of what had been written in (i) and could have been about any renewable or fossil fuel. A small number of candidates, rather than choosing a single type of energy, chose the groups 'renewable energy' and 'fossil fuels', or wrote mixed accounts, such as 'solar and nuclear' and 'coal and oil'. In these cases the Examiners credited the best single type of energy contained in each sub-part, which inevitably yielded few marks. One misconception was that the term *sustainable* simply means long-lasting.
- (b) This was answered well by many candidates and good understanding of renewable energy and of the constraints on its development was demonstrated. Responses which achieved Level 3 awards showed a strong overall perspective of energy as a global issue, 'in MEDCs and LEDCs'; understood 'potential' as a concept robustly; brought out clearly the emphasis in the question, 'only partly developed', in a dynamic manner; and often made use of up-to-date examples of schemes and plans. The majority of candidates received awards in Level 2, for accounts which were sound but limited in some way, such as in breadth or in detail. Responses which achieved awards in Level 1 were faulty in knowledge and understanding, for example by considering gas (a fossil fuel) rather than biogas; mistaken in approach, for example describing one or more schemes such as the Three Gorges HEP in China, or Kariba on the Zimbabwe/Zambia border; or note-form, consisting of points rather than extended writing in sentences and paragraphs.

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- (a)** The topic of Fair Trade (or Fairtrade, as it is sometimes written), is an important one in the global economy as it links producers and consumers in fair and ethical ways. It should not be confused with free trade, the liberalisation of world trade, as promoted by the World Trade Organization (WTO) and other groups. Fair Trade is defined by FINE (the grouping of four key fair trade organisations) as, 'a trading partnership based on dialogue, transparency and respect that seeks greater equity in international trade'. Fair Trade involves a growing number of primary products produced in LEDCs and consumed in MEDCs, such as tropical fruit, sugar, beverages, and raw materials, e.g. cotton. It has a number of aims, including fairer trading, for example with fewer middlemen profiting from the exchanges; a better price for producers; and empowering producers

to improve their lives and those of their families and communities. More widely, Fair Trade initiatives aim to challenge conventional (and unfair) trading, to campaign for change and to widen the programme of Fair Trade certification and labelling of products with its distinctive logo. Candidates could be encouraged to research one product or initiative at both the producer end (LEDC) and the consumer end (MEDC), see, for example <http://www.fairtrade.org.uk> as a starting point. Some effective work was seen, for example in relation to the example of fair trade bananas. The majority of responses were wrongly directed and about free trade, not fair trade. These answers were awarded generic credit of up to 4 marks. Generic credit is given when the observations made would apply to the correct context (in this case, Fair Trade) had it been identified.

- (b) The full range of answer quality was seen in response to the classic issue of trade and aid. Most candidates offered an opinion, although the extent to which this was supported with argument and evidence varied greatly. It is accepted at this level that opinions may vary about such an issue and so no particular viewpoint was expected nor seen as correct. Responses which achieved Level 3 awards were distinguished by their overall perspective, organisation and the ability to integrate content about trade and aid throughout, drawing on examples to support the points made. Much exemplification was impressively up-to-date, for example in relation to the Haitian economy and aid received in the aftermath of the earthquake of January 2010. Some used home country examples effectively and with understanding, for example of recently-brokered trade agreements or specific projects and initiatives funded by NGOs. Middle quality responses often treated trade separately from aid, considering the advantages and disadvantages of each, before making a summarising evaluation. In developing examination techniques, this approach could be shown to be quite time-consuming, one which may involve repetition and which demonstrates knowledge more readily than the skills of assessment which form the basis of parts (b). Most candidates proposed that trade is better than aid, some adding the broad qualification that it depends on what type of trade and what type of aid or the specific one that emergency aid is necessary and saves lives. The performance of candidates at the lower end of the mark range could be improved in two ways: firstly, with fuller knowledge of what the terms *trade* and *aid* cover and, secondly, with the development of skills in, and the vocabulary for expressing, assessment.

Question 6

- (a) There was no expectation that Antarctica would be known to candidates, other than as a continental polar wilderness of rock, ice and snow. If candidates wrote about the local population (of which there is none), or made some factual mistake, such as about building hotels, Examiners simply ignored the error rather than penalising it.
- (i) Some credit was given to reasons for the growth of tourism that could be derived from Fig. 3, such as improvements in transport and promotion by a large number of IAATO-affiliated tour operators. To achieve full marks, as many did, further reasons were needed in relation to demand and to supply. Demand covered reasons which included growth in affluence, the desire for new and unusual experiences, a growing interest in visiting wilderness and media coverage, for example in relation to the impacts of global warming and the melting of glaciers. Supply covered reasons such as internet promotion and the availability of new Antarctic cruise packages.
- (ii) Candidates' responses were differentiated by the conceptual understanding shown of actual or potential environmental impact and the ability to develop an explanation which consisted of three or more separate points. The best responses recognised carrying capacity as a key idea and the limited potential of this unique and fragile wilderness environment to receive visitors without being damaged. This damage might be pollution, for example by litter or ship wastes; degradation and deterioration in quality, such as through trampling or vehicle tracks; and impacts on wildlife, for example visitors' disrupting the daily life of penguins or their breeding cycles. The regulation brought through the Antarctic Treaty means that Antarctica should be managed sustainably and this is a further reason why it is now believed that numbers of visitors should be limited.
- (b) Whilst all candidates taking this Option would have studied the decrease in tourist numbers, as well as the more commonly studied, increase, few seemed to have considered this previously and it seemed that most had to work out for themselves how to answer this part in the exam. The full range of quality was seen, from assured and analytical overviews, supported with detailed and up-to-date examples, to responses in which, despite the actual specific demand, a learned case study was reproduced, for example of the tourism life cycle in a destination such as Goa, India, or the Costa Del Sol, Spain. In such accounts Examiners credited points which were relevant, not simply

the content that was factually correct. The majority of accounts were, in effect, developed lists of appropriate 'circumstances', such as civil war, disease outbreaks, hazardous events, changes in fashion and shifts in exchange rates. The better ones developed each briefly in a perceptive manner and used one or more recent events as evidence. Some were able to offer data in support of the comments, for example of percentage downturn in arrivals in Mauritius as a result of the global recession, or loss of income in dollars after the 9/11 terrorist attacks in the USA. Weaker accounts tended to be repetitious, 'Another circumstance ... Another circumstance ...', and either to be general or to use contemporary examples in an undiscerning manner. So, for example the tourism trade of countries such as Afghanistan, currently at war, was never great and the term *resort* cannot be used easily there. In contrast, Haiti, which experienced a major earthquake in January 2010 followed by a cholera epidemic was in the involvement/early development stage of the life cycle model as a new Caribbean destination before this happened. Some candidates made appropriate use of seasonality as one circumstance by which tourist arrivals decrease. This is true both of the climatic seasons in the tourist destination, such as a wet season in the tropics or the end of the snow in a ski resort, and of the holiday seasons in the main source areas for visitors, such as Europe or North America.

Economic transition

Question 7

- (a) (i) No set definition of the term *foreign direct investment (FDI)* exists. Prepared candidates were able to express both the element *foreign* and that of *direct investment*, effectively.
- (ii) FDI is one form of global capital flow. The example taken for the answer could be actual or generic. For example, the decision of Toyota, a TNC, to establish a car assembly plant in Thailand, represents outward FDI for Japan and inward FDI for Thailand (or the Thai economy).
- (iii) FDI is discouraged by a variety of 'political and economic circumstances'. A full response comprised at least three different circumstances outlined, covering both dimensions. Most candidates were able to identify political circumstances, such as civil war, instability, regime change or extreme nationalism; and economic ones, such as recession, debt, adverse exchange rates and the removal of incentives, e.g. tax reductions and subsidies. The command word 'outline' does not require detail, only some development of the point, such as how the circumstance operates or an example of where it occurred.
- (b) The spatial division and organisation of TNCs is fundamental to their global operation and continuing profitability in the competitiveness of the global economy. Most candidates recognised the significance of the new international division of labour (NIDL) and the fragmentation of production into its constituent elements each in a low cost location. Many also observed that TNCs have strategies to penetrate new markets, for example locating a vehicle plant within the European Union (EU) in order to trade preferentially with all member countries. Some candidates used a case study of a TNC, or different examples, to reinforce these points and to develop a spatial argument further. The quality of many responses could have been enhanced both by this kind of support and by careful consideration of the key idea of 'spatial structure' as this would have helped overcome generalisation on the one hand and an unselective and narrative approach on the other.

Question 8

Some candidates appeared to have been attracted to this question by the prospect of gaining a few marks by interpreting Fig. 4 and, in choosing this question, perhaps did not give sufficient attention to considering the demands that followed.

- (a) (i) The resource appeared simple but required careful interpretation, from left to right across the development spectrum (MEDC/NIC/LEDC), and from top to bottom to consider the disparity between the richest 20% of people and the poorest 20% of people within an individual country. Many correctly identified the greatest disparity being within Brazil, an NIC. A full response required 'evidence' from Fig. 4, that is country names and/or data support. If a candidate only took the highest and lowest instances, Examiners awarded a maximum of 3 marks given the richness of the information available.



- (ii) This kind of demand, asking about overcoming difficulties is a common one in all Options of this paper. It would naturally lend itself to a 'brainstorming' approach in class and to developing a spider diagram as one approach to structuring responses. The rich/poor content of Fig. 4 was intended to function as a stimulus to thinking about what is involved in overcoming disparities. Many candidates wrote explanations combining geographical knowledge and understanding with first-hand experience from their home country context of initiatives which failed or which were only partially successful. A variety of creditable reasons were given. These could be social, such as access to education or the functioning of elites; economic, such as indebtedness, or the way that financial institutions operate; or political, such as corruption, vested interests and power structures.
- (b) The term 'social and economic wellbeing' includes a number of attributes of life and was interpreted permissively by Examiners as covering a broad spectrum of attempts in different sectors such as health, education and infrastructure (water, power, accessibility/transport). Only a small proportion of candidates recognised this demand for what it was and provided an assessment of one or more appropriate examples, such as the provision of a safe piped water supply to a squatter settlement, or of schooling for girls in a culture where males are traditionally dominant. Most responses drew on studies of overcoming regional disparities to try to demonstrate how wellbeing improved over time in that region. To perform well, this required skills in selecting, directing and applying learned material to the specific question set with its focus on 'social and economic wellbeing' rather than whether the region(s) 'caught up' or not within the chosen country. A number of weak and quite narrative accounts were seen where the assessment was, as a consequence, misdirected. Teachers and candidates should note that a question on regional disparities will not appear every examination session within this Option.

GEOGRAPHY

Paper 9696/33
Advanced Human Options

General comments

This was the second examination in 2010 of the revised 9696 syllabus. The question paper comprised a large number of elements of continuity of content from the previous 9696 syllabus and some elements of change.

The Insert contained a mixture of styles of resources of the sort which teachers should include in their preparation of candidates. It comprised Figs. 1A and 1B for **Question 1**, two maps showing agricultural change over time; Fig. 2 for **Question 3**, a scatter graph on log-log paper showing the correlation between two variables and the relationship with a third (HDI); Table 1 for **Question 6**, a small data set about island tourism and an unfamiliar index (TPI); and Fig. 3 for **Question 7**, the UN Millennium Development Goals. The skills needed to interpret these various resources effectively and to express the observations which result are important in achieving success both during the course and in the examination. Teachers are encouraged to use the Inserts from each paper in their teaching in order to familiarise candidates with the style and demand of the different types of resources used, as well as to access other similar materials from text books, journals, newspapers, the internet, etc.

There were four key issues arising from the assessment that can be identified as ways in which answer quality can be improved. Firstly, there is the need to develop the higher order skills of evaluation and assessment. Many candidates describe and explain well, far fewer can assess effectively. As the levels marking descriptors used to mark parts **(b)** are established in part on the basis of the quality of assessment offered, assessment is a significant element of A Level performance. For example, a descriptive response with little or no effective assessment, or a superficial one lacking evidence to support the assessment made, receives a Level 1 reward (0–6/15 marks). The second key issue is the ability to address the specific demand of the question set this examination session. The use of past papers to prepare candidates is to be encouraged. One difficulty that may arise from this practice is that candidates answer a previous question, or appear to, rather than the current one, given that topics in the syllabus are cycled over time. One Examiner commented in this way, “Marks were often lost by candidates who were well briefed in an aspect of the topic other than the one being examined here and wrote at best tangential, but often quite irrelevant, answers.” The third key issue was that many responses could be improved with the use of examples and/or more detailed and more up-to-date examples. Some highly effective use is made of home country material which is easy for candidates to access from the media and perhaps more straightforward to interpret culturally. How the examples are used is also worth attention; to quote one Examiner, “Many weaker candidates would have improved their answers had they access to more examples and been able to use such examples to elucidate the question set.” In parts **(b)**, generality, or the use of examples in name only “e.g. China”, are characteristics of Level 1 awards. The fourth key issue was that some candidates did not respond well to topics introduced in the revised 9696 syllabus. Two such instances were in relation to **Question 5 (a)** and the debt crisis and **Question 8 (b)** and NICs. These are both addressed in detail in the question-specific comments that follow.

Although Examiners do not mark for length and there is no particular expectation of how many words, paragraphs or sides of writing should form a response, many candidates do not write at sufficient length to be able to develop the kind of response needed at A Level. This is true, both of parts **(b)**, worth 15 marks, and of the parts **(a)** which are not subdivided, worth 10 marks. Many brief and some fragmentary scripts were produced. This may, in part, be an issue of the use of language and expression in the medium of English, or in some cases of poor time management in the examination, yet it also appeared to be one of lack of knowledge and understanding of the relevant geography content in some cases.

Two matters of examination technique could help a few candidates perform better. The first is to understand and follow the rubric in answering two questions only, each from a different Option. Some candidates each session answer three or four questions and can only have the better two marks counted. The second matter of technique is that all parts **(b)** and most parts **(a)** require written responses in the form of extended writing. Points, notes or bulleted points should only be used where there is not enough time to develop a written response in full. In parts **(b)** the levels descriptors limit note-form responses to the Level 1 mark band as ideas cannot be developed and linked sufficiently using this approach.

Comments on specific questions

Question 1

- (a)** The use of the example of France in Figs. 1A and 1B for **(a)** represents what is known as an unfamiliar context. This did not require candidates to have studied France or the Common Agricultural Policy (CAP), instead it required them to apply their wider knowledge and understanding of agricultural production, location and change to this context, using skills of map interpretation. These skills included reading the key effectively and comparing the map in 1958 with that of the same area in 1993 to identify differences. There was no division between marks for the description and for the suggested reasons, but the marking guidance was that descriptive responses could achieve a maximum of 4 marks. The changes shown included the removal of hedgerows in order to create larger fields to allow more efficient operations and, notably, the use of farm machinery. The growth of the village built-up area might indicate natural increase or immigration, for example through counterurbanisation in this MEDC. The extension of the road network might be explained by the growth of car ownership, but also by the need for more efficient transport for the agricultural sector, for example, receiving deliveries of fertilisers and feeds or exporting produce and livestock. The introduction of intensive indoor livestock units was another observed change. Reasons for this development might include the intensification of agriculture and the availability of subsidies for new forms of production. High-achieving responses identified a number of changes, but did not need to be comprehensive, backing each observation up with one or more suggested reasons. The reasoning was realistic and appropriate to the context: that of an MEDC, in the time period 1958–1993. At the lower end responses tended to be descriptive (the changes) and could have been improved by attention to the second demand for explanation (the reasons). Figs. 1A and 1B were misinterpreted in three main ways: firstly, despite the word ‘village’ in the key, some candidates called the settlement ‘town’ or ‘city’. Secondly, the pale blue of the poorly drained land, which was extensive in 1958, was confused with the stronger blue of the single reservoir in 1993, leading to mistaken comments such as “less reservoirs”. Lastly, the term *intensive indoor livestock unit* was not understood and was sometimes interpreted as being somewhere for farmers to live. Typically an intensive indoor livestock unit consists of purpose-built, hi-tech accommodation for beef or dairy cattle, pigs or poultry. The animals are raised under cover in controlled conditions in terms of heat, light and feeding, to specific time schedules for slaughter and/or sale of products such as milk and eggs.
- (b)** This open question about irrigation, which may be defined as the addition of water to cropland artificially, was best answered by the clear identification of different “circumstances” coupled with appropriate exemplar support. The best responses were analytical and clearly structured using supportive evidence effectively. It was more common to answer using an example or case study, such as from a multi-purpose HEP project, and so to focus on a single circumstance. These responses achieved a maximum of 10 marks for their narrowness, given the plural wording of the question, “circumstances” and “examples”. Responses could have been improved by integrating knowledge of precipitation from the Physical Core, by the careful consideration of the phrase “may be necessary” in the question, to indicate the uncertainties of agricultural production and the unpredictability of seasonal drought, or by fuller attention to background factors such as the availability of capital for irrigation projects or the role of the government and NGOs.

Question 2

- (a) The topic of functional linkages is understood well and the inclusion of manufacturing and related services in the question provided a helpful framework for structuring the response. Many integrated small sketch diagrams with their responses. These both clarified the outline and probably saved time in providing a description of the ways functional linkages operate. Responses could have been improved with the use of examples. These could be generic examples, “the car industry” and “tyres”, an actual example, “Toyota” or a located example, “Toyota’s Ban Pho plant in Thailand”. A maximum of 6 marks was given to general responses. The very best responses were detailed and indicative of variety within the sector and included both “manufacturing” and “related service” industry, for example identifying the forward links between a manufacturer and services, which may be sub-contracted or bought in, such as advertising or delivery of the products.
- (b) This question allowed candidates to develop their own approach and to demonstrate what they knew, understood and could do in terms of industrial location. The best responses captured the tone of the question “what industrialists might look for”, “as an ideal location” and “in the 21st century”. There were some good discussions of why many industrialists choose or operate in sub-optimal and non-ideal locations in economic terms. This may be for a number of reasons including behavioural reasons, such as an affinity with a home area, or because of industrial inertia. In MEDCs the desire to locate for good transport infrastructure for efficient operation, agglomeration economies to cut costs and maximise profits and a clean attractive working environment, in order to attract and retain high calibre staff in a competitive world, were frequently identified. In LEDCs, locations with reliable power supplies, a large potential labour pool or incentives and government support packages, such as growth points or export processing zones (EPZs), were often viewed as ideal. Many responses could have been improved if candidates had been confident to set their learned case study aside, to answer the question set. One Examiner reported, ‘In some answers a case study, such as the iron and steel industry in UK or the car industry in Japan, was described without reference to the question that required an informed assessment of requirements for the 21st, and not the 20th century. Weber and the role of raw materials were given undue prominence and far too little emphasis was placed on the principles of globalisation.’

Environmental management

Question 3

- (a) As with the interpretation of the resource accompanying **Question 1**, it was important to satisfy both the element of description and that of suggesting reasons. Candidates tended to launch into their explanations without describing what they observed in Fig. 2, which lowered the overall outcomes. The figure showed a broad positive correlation between the two variables on the axes. This was correctly interpreted as power consumption increases with increasing GDP per person. There were two elements that helped to distinguish better quality responses. One was including reference to the Human Development Index (HDI) values, shown in colour; the other was recognition of the zones of overlap between the low, medium and high values. The main limitation of responses was that the units on the x axis, “per person” and of power consumption on the y axis, “kilowatt hours per person per day” were interpreted as meaning personal (domestic) power usage only. The measures were, actually, totals for the countries averaged out across the total populations and so included all sectors (manufacturing industry, services, including commerce and transport and tourism, and the quaternary sector) as well as domestic use. It was therefore the case that reasons relating to personal power consumption, such as electrical appliances, lighting and heating, were only a limited part of the kind of explanation sought.
- (b) High-scoring responses which received Level 3 awards, responded carefully to all the key words in the question, specifically, “examples”, “continue to develop”, “increasing demands for energy” and “may be met”. One approach was to consider an MEDC, such as the USA or New Zealand, an emerging NIC, such as China, and an LEDC from Asia, comparing and contrasting their development stages, needs for power and energy strategies. Other effective accounts focused on a developed case study of one country and then made reference to one or more others. Explanations based on one country, usually the home country or China, received a maximum of 10 marks as the question was expressed in the plural. There were some insightful and contemporary explanations of the contribution of energy imports, the importance of energy security in an uncertain world, initiatives for fuel saving and fuel efficiency and the drive for greener and cleaner energy production. Some candidates took a particularly sensitive approach to the aspect of “may be met” and considered current research, experiments and proposed energy schemes which may

or may not be approved and implemented. Candidates who decided to rehearse a learned case study, such as that of the Three Gorges Dam in China, achieved a few marks, more if they could select from and direct their knowledge to address the question set, rather than simply repeat detailed recall of content which was not relevant here.

Question 4

- (a) Candidates were free to develop their own approaches to the issue and to use their own example(s). At the upper end of the mark range, some candidates used a case study of an area such as the Sahel as the context for their explanations. Others developed a cause by cause, factor by factor approach and drew on an example or examples to give evidence to support their points. Negative reasoning, such as the absence of environmental protection or of political will, was creditable. In the middle of the mark range, the explanations could have been improved with the clearer identification of the causes and some more detail. Compare for example, the simple observation “overpopulation” with the more developed phrase, “population pressure caused by high rates of natural increase coupled with in-migration and land being taken for commercial agriculture production, so reducing the area for settlement”. To improve low-scoring responses, some specific causes were needed in place of vague statements, and less emphasis on catastrophic events, such as hazards, rather than long-term pressures, such as for energy and the dependence on fuelwood leading to deforestation. One misconception was that environmental degradation (in the question) is the same as pollution. Environmental degradation is a much wider and all-embracing term for the deterioration of environmental quality. It includes pollution (of land, air and water) as a key aspect, but extends further to include such matters as physical damage and decay, soil erosion and the effects of mismanagement in rural areas, such as in a national park or a tourist destination in a rural location.
- (b) There is increasing environmental concern globally about the disposal of solid wastes into landfill. There were some aware, perceptive and contemporary responses to this question, using home country content effectively. Others who had some knowledge of the subject matter did not have the technical vocabulary (such as composting; incineration (burning); and ‘the 3R’s’ – reduce, reuse and recycle), or the skills of assessment, to respond suitably analytically. There were many descriptive responses of ways to dispose of solid wastes which could only achieve a few marks. It was important to include an answer to the direct question, “Is landfill the best way..?”, somewhere in the response. One feature of better responses was evidence to support the opinions made and arguments pursued. This evidence might be statistical (e.g. tonnages of wastes per person per year, or per city per day), or relate to particular locations (e.g. Sungar Akai in Brunei) or events (e.g. named recycling initiatives or specific environmental protests about proposed incinerators or waste disposal sites). Only the better responses considered that different groups of people may hold different views about what really is “the best way” to dispose of solid wastes. Compare, for example, the views of local residents who live very close to landfill sites and cope with the heavy vehicle traffic, the smells, etc., with those of government planners or commercial operators who profit from handling wastes.

Global interdependence

Question 5

Both elements of this question drew on content which is new to the revised syllabus. Overall, responses to (b) were more effective than to part (a).

- (a) The causes of the international debt crisis include the key ideas of large-scale lending by the World Bank and the IMF to newly-independent LEDCs for economic development, such as providing infrastructure, at a time when their economies were growing, some strongly. The world recession of the 1970s and early 1980s and, crucially, the increase in oil prices caused countries to start to default on their repayments of the loans. Once behind with payments, there was little chance realistically of catching up. In some countries the financial situation was further worsened by instability, the cost of civil wars, corruption and hazardous events. It is valid to take the view that the causes of the debt crisis include attitudes to both lending and borrowing held by governments and supranational bodies, power structures in international decision-making and the context of global capitalism. Some candidates offered this ‘big picture’ perspective. Most candidates identified one or more causes in accounts that remained broad and which had limited exemplification such as “e.g. Africa”. Some other content that was used effectively related to debt from trade through the loss of markets for exports on which economies depended. The second

element of the question, describing initiatives for debt relief, was not answered as effectively as the first. Some knew about recent actions to cancel debts in Africa, spearheaded by politicians and celebrities. It would be good to add to this learning about the World Bank initiatives, such as HIPC (Heavily Indebted Poor Countries) and MDRI (Multilateral Debt Relief Initiative). Details can be found at <http://go.worldbank.org/XLE8KKLEX0> and its associated links.

- (b) The full range of answer quality was seen in response to the classic issue about receiving aid. Most candidates offered an opinion, although the extent to which this was supported with argument and evidence varied greatly. It is accepted at this level that opinions may vary about such an issue and so no particular viewpoint was expected nor seen as correct. Overall the candidates who concentrated on different forms of aid, such as tied aid or emergency aid, seemed to perform more effectively than those who included what they termed *financial aid* and so drew on the same international loans and international debt content as in part (a). In the literature of the perceived “rights” and “wrongs” of aid much depends on the commentator’s political and economic position. The assessments offered were strongest in the treatment of the issue of the dependency or risk of dependency of LEDCs on MEDCs or neighbour countries and of the vital nature of emergency or humanitarian aid. Good use was made of material about the relief efforts after recent events such as the tsunami in Asia in December 2004 or the major earthquake in January 2010 in Haiti and the cholera epidemic that followed it. Detail, for example about the NGOs involved or the scale of the intervention in terms of who benefited or what areas benefited, was highly creditable. So too was the assessment of whether the initial benefit of saving lives had over time given way to a measure of disadvantage for the countries concerned. Many responses at the lower end could have been improved with some evidence to back up the opinion offered and by being further developed.

Question 6

- (a) The structured nature of the question helped candidates to respond to the unfamiliar and conceptually demanding content of Table 1. Most found (ii) the most challenging of the three sub-parts.
- (i) To answer this sub-part successfully, candidates needed to identify the correct two rows in Table 1, read and interpret the four columns of data effectively and analyse in the comparisons they made. Guam and Malta in 2001 recorded the same value for the Tourism penetration index (TPI), of 0.37, but showed quite different performances in the three variables, A, B and C, on which the index is based. Many good responses were seen. The main limitations were in listing the data rather than analysing it, omitting to make the point that the two islands had the same TPI and offering explanation when none was required for the modest mark allocation.
- (ii) Few candidates really recognised this question for what it was: an invitation to write about the sense of presence of tourists as perceived by the resident population in terms of carrying capacity. One aspect of this is psychological carrying capacity, as expressed in Doxey’s irridex (irritation index). An adaptation of his framework for understanding how the impact of tourists on local residents changes over time can be found on 9696/03 June 2008, Fig. 2. Tourist density also has impacts on the built environment and on services and requires careful planning provision.
- (iii) This element was effectively answered by many candidates. Examiners credited any three different reasons. These could be positive ones such as government policy to limit the development of tourism, environmental protection, or the strategy of ecotourism. Negative reasons were more common, such as the island’s poverty, the government having other spending priorities, remoteness and the lack of an airport or the nature of the regime making it unattractive as a destination to all but adventurous visitors. No knowledge of either island was needed to answer this sub-part fully. Some responses could have been enhanced by more careful attention to the question and the recognition that three reasons, and only three, were needed.
- (b) The key words in the question to identify and focus on were “economies based on tourism”, “at risk” and “unpredictable”. Of these, it was the notion of unpredictability which was the least well understood and pursued. If something is unpredictable it means that there is no way of foreseeing or foretelling what will happen in the future with any degree of certainty. So, for example, this meant that seasonality affecting tourism could not be credited, as seasons are predictable in all destinations, even if weather patterns vary. What was valid to consider were unpredictable and hazardous weather events, such as storms and floods caused by El Niño, or hurricanes in the Caribbean. Similarly, some candidates used the suggestion of predictability in the life cycle model of tourism to good effect, seeing that an element of predictability in the emergence and decline of a

tourist resort is described there. The risks are many and can be seen as economic, such as in the current global recession or when there is an adverse change in exchange rates; social, such as after a disease outbreak like SARS or cholera; environmental, as above after weather events or an earthquake; and political, for example following a coup, a terrorist incident or civil disturbance, as in Thailand in 2010. There were some able analyses of the risks involved for an economy based on tourism, sometimes considering diversification of economies into other areas such as processing industry, offshore services and trade in the case of some tropical LEDCs. Creditable concepts included the tourism multiplier and direct and indirect employment, such that if tourism fails the impacts are much wider and more serious than may be obvious immediately. Strategies to seek to ensure tourist arrivals are maintained or increase were creditable if the material was handled in such a way as to address the element of unpredictability. These initiatives include seeking new markets; innovation in creating new tourism products, such as in Singapore with its integrated resort based around a casino and F1 night race; and greater promotion and marketing strategies. None of these make tourism predictable, but they do represent efforts to overcome the inherent unpredictability of an industry dictated to a large extent by fashion, which is heavily influenced by media coverage.

Economic transition

Question 7

- (a) This was a broad and open question. Candidates could write about personal poverty, structural poverty or LEDCs and the least economically developed countries of all. Poverty may be defined with the threshold of those people living on US\$1 a day or less (although OECD and the World Bank now use US\$1.25). Some effective descriptions were seen of how the 'vicious cycle of poverty' operates affecting all aspects of life to keep the poor in poverty over time. Better work recognised that poverty operates in two broad ways; firstly, to impede development and restrict opportunity. In so doing it limits the social and economic wellbeing of individuals, families and communities and therefore their potential for improvement, for example through education or entering formal employment. The second way poverty operates is to stimulate development by attracting attention and being the focus of initiatives by governments and NGOs. Fewer responses contained this element. At the lower end of the mark range candidates who chose this question appeared to lack any robust definition of either *poverty* or *development* and may have selected this question in order to comment on the resource on which part (b) was based. Weaker responses tended to be superficial and general, without the use of examples in support of the points made. As was the case with other parts (a), a maximum of 6 marks was used for responses without examples.
- (b) Five years before 2015, the year by which UN member countries pledged to achieve the Millennium Development Goals (MDGs), progress has been made in some areas and less in others. The MDGs were listed in Fig. 3 as they are not a specified element of the syllabus. The style of question, asking about difficulties and constraints, is a common one for this paper and is a potentially useful element for the programme of teaching and learning for all the Options. The most effective approach to the question was to 'stand back' from the numbered list in Fig. 3 and to consider the difficulties one by one, rather than the MDGs one by one. This saved time, avoided repetition of key ideas (lack of finance, the need for co-operation, etc.) and showed skills in conceptualising and structuring the response. Weaker responses tended to consist of short paragraphs taking one or two goals at a time and simply showing understanding of what each goal involved. For example, compare the simpler "Goal 5, improving maternal health, is difficult because it requires hospitals", with the fuller "improving maternal health requires healthcare to be accessible and affordable to all. This is a major undertaking especially in extensive countries, such as Sudan, with large rural populations and a culture in which males have priority access to food and the family's income".

Question 8

- (a) The global shift of industrial activity, involving industrialisation in LEDCs and NICs and deindustrialisation (the structural loss of manufacturing industry from the economy) in MEDCs, was recognised appropriately. Some candidates had examples at both ends of the connection to support and expand their descriptions. Most responses could have been improved by fuller explanation. The drive to lower the costs of production and to maximise profits were best known; fewer candidates could explain the operation of comparative advantage and firms desire to penetrate new and potentially vast markets, for example in South America or in China. To achieve

a higher mark, candidates needed both to use examples and to provide a reasonably balanced response covering both industrialisation and deindustrialisation.

- (b)** Candidates were right to observe the significance of the role of the government in the emergence and growth of NICs. It was acceptable to use examples of the first generation of NICs, commonly called the 'Asian tigers' (Singapore, Hong Kong, South Korea and Taiwan) and later ones, such as Mexico, Brazil, and currently China and India. Most answers could have been improved by greater evidence and support for the view taken. So, for example, rather than simply agreeing with the suggestion in the question, demonstrating why the government role was key in the chosen examples. It was also creditable to consider in what ways its role was key, for example in establishing a firm economic policy based on trade, ensuring political stability, investing in human capital through education and training or attracting foreign direct investment (FDI) through incentives and special policies. Lastly, answer quality could have been enhanced by considering the roles of other bodies: supranational ones, such as the World Bank or IMF; regional blocs, such as ASEAN or NAFTA; and businesses, both indigenous firms and, notably, TNCs, as well as that of the government.