

GEOGRAPHY

Paper 9696/11
Core Geography

General comments

The number of candidates who took this component is sufficiently small that generalisation is difficult. However, it is possible to make a number of points.

Candidates were more successful in answering Human Geography than Physical Geography questions. Some elementary Physical Geography concepts were little understood. This was especially the case with questions on mass movement such as **Question 3(b)**. Helicoidal flow was also little understood.

Candidates would improve their performance by noticing key words in questions, such as 'compare', 'overall', 'relationships', and 'trend'. If a question asks for a description, candidates should provide just that, rather than a detailed explanation. Successful candidates were able to evaluate issues with cogent arguments when answering questions in **Sections B** and **C**.

Teachers preparing candidates for the revised 9696 syllabus from 2018 are reminded that candidates will have to answer all three topics in Section A for both the Core Physical Geography and Core Human Geography papers.

Comments on specific questions

Section A

Question 1

- (a) Most candidates were able to answer most of the components correctly.
- (b) There was a good response to this question. Most candidates understood the command as being the need to explain the different rates at which water moves to the river channel by the various hillslope flows.

Question 2

- (a) Most candidates were able to describe the pattern of daytime temperatures in quite a detailed manner with a good use of the resource.
- (b) The urban heat island effect was well known, and the detail provided in answers was usually very convincing. In this case temperature and precipitation needed discussing. Discussion of the temperature differences between urban and neighbouring rural areas was more detailed than that for precipitation. The albedo effect was well described but there was too much emphasis on greenhouse gases in urban areas affecting temperatures.

Question 3

- (a) Most candidates were able to describe several features of the rock fall.
- (b) Explanation for rockfalls is generally more straightforward than for some other types of mass movement and this was reflected in the answers. Thus, the answers were more accurate and detailed than is usual for explanations of other mass movements. The effect of the road was noted by most candidates. The role of weathering was also a popular explanation.

Question 4

- (a) Most candidates obtained two marks.
- (b) Both components were answered correctly by most candidates.
- (c) Most candidates did not understand that the percentage of the population below 15 years was the result of both a decrease in the birth rate and an increase in the aged population. Thus, they did not realise that it was generally a question about the ageing population. The percentage under 15 years could decrease without any change to the birth rate. For this reason, answers tended to be unbalanced.

Question 5

- (a) This was answered correctly by most candidates.
- (b) Some candidates simply described the two sets of changes without a direct comparison, but there were many complete answers.
- (c) This was answered very competently, with a variety of reasons being discussed.

Question 6

- (a) This was answered well by most candidates.
- (b) Urban renewal was a topic that confused many candidates. Few were able to write about either urban renewal or the reasons why it generally included large numbers of residential apartments.

Section B

Question 7

- (a) (i) This was answered well.
- (ii) Helicoidal flow was little understood. Description of it in textbooks as a corkscrew movement is not helpful as it leads to the idea, as expressed in many diagrams, of a corkscrew movement going straight down the middle of the river. As noted in the Mark Scheme, helicoidal flow is the cross-channel flow of water from the outside of one bend to the inside of the next downstream bend.
- (b) Most candidates were able to produce a diagram of a delta, although the detail was often inaccurate. Alluvial fans were less well known, and some candidates thought that deltas and alluvial fans are essentially the same feature.
- (c) This was a very specific question demanding knowledge of the Hjulstrom Curve. There was no necessity to produce a diagram of the Curve, but it obviously helped if the main elements of the curve were portrayed. However, it was possible to gain high marks without a diagram.

Question 8

- (a) In **Part (i)**, temperature and wind speed were most often described, with humidity less so. Only two factors were required but there needed to be some development of each factor for full marks. Answers to **Part (ii)** were generally satisfactory.
- (b) There were few good answers to this question. Diagrams, if present, were lacking in detail and accuracy. There was general understanding in many answers, but detail on the specific processes and the significance of the various lapse rates was often incomplete.
- (c) This question was not well answered. The question was really about the energy budget and how greenhouse gases affect incoming and outgoing radiation. However, many candidates saw the question as being about greenhouse gases themselves with little reference to the effect on the energy budget.

Question 9

- (a) (i) Most candidates were able to define chelation and hydration.
- (ii) This was also answered well.
- (b) The diagrams were often simplistic and inaccurate, although most of the main landforms were known and described. The subduction process was described well but the role of convection currents was often ignored. The crushing and folding of marine sediments (accretionary wedge) was mentioned by some candidates.
- (c) Understanding of the weathering of both rock types was generally sound, and answers were equally balanced between the two rock types. The emphasis in the question was on chemical composition but as the question asked for an evaluation, discussion of other factors such as rock structure, as well as reference to factors such as climate, vegetation and relief, was relevant and necessary for a Level 3 mark.

Section C

Question 10

- (a) (i) Although most candidates were able to provide a general definition, few produced the third element in the definition, 'at a given level of technology.'
- (ii) The response was generally sound, although detail was needed to achieve the full marks.
- (b) There were some very good, detailed answers to this question.
- (c) There were some very good responses to this question. Most candidates were able to produce satisfactory answers.

Question 11

- (a) (i) This was answered well apart from some misunderstanding of the term, with inter-urban migration being defined.
- (ii) Most candidates were able to provide two acceptable types of intra-urban migration but there was often insufficient explanation to achieve high marks.
- (b) There was a good response to this question, with answers being well balanced between age and gender.
- (c) Candidates responded well to this question, with many candidates dissecting the model in some detail.

Question 12

Only a few comments are possible but, in general, few candidates understood what infrastructure referred to, with many answers focusing on housing and shop provision. All elements in the question were related to the same issue and thus these comments refer to all three parts. If the nature of infrastructure was misunderstood, then it caused problems for all three elements. The question asked for a named city. This was often mentioned in name only with the answers being very generic, with little apparent relevance to the named city. There was a clear need for a detailed case study.

GEOGRAPHY

Paper 9696/12
Core Geography

General comments

The examination produced many answers of good quality. Most candidates seem to have been well prepared, and showed a clear understanding of the questions and the concepts involved. The answers were detailed and thoughtful, but with a wide variation in approach and effectiveness. The examination proved accessible to most, and the progress seen in recent years has been maintained.

There was no pattern of rubric errors, and this continues to be an improving aspect of examination technique. Some candidates still attempted all questions in **Section A**, but this is now unusual, and the number of incomplete answers has decreased. This reflects effective planning in terms of time allocation.

Many answers were detailed and relevant, but there is a tendency to rely on generic material rather than specific examples. This was especially prevalent in answers to **Questions 12(b)** and **12(c)**. Case study material is demanded in these questions. There are encouraging signs of case study material being incorporated in other answers. It is important to stress that specific case studies are required in many parts of the syllabus. This comment is often most applicable to the Human Geography questions, but can also apply to questions on Physical Geography, where specific detail on soils and/or vegetation, for example in **Questions 1(c)** and **3(b)**, is required.

The interpretation and use of the resources in questions in **Section A** is improving, although the analysis of those resources is sometimes very partial. Candidates manipulated and used the data effectively, and did not confuse description with explanation. However, there remains a weakness in identifying general trends or patterns from data provided. This was especially the case in answers to **Question 2(a)**.

Some candidates made full use of diagrams with good results, but diagrams continue to be of variable quality. This was especially noticeable in answers to **Questions 7(b)** and **9(b)**.

Most candidates performed competently in the examination. From year to year there is evidence of continued improvement, and an awareness of the skills needed to succeed. Answers are often detailed and thorough, but would benefit from clearer evaluation and assessment to reach and maintain Level 3.

Teachers preparing candidates for the revised 9696 syllabus from 2018 are reminded that candidates will have to answer all three topics in Section A for both the Core Physical Geography and Core Human Geography papers.

Comments on specific questions

Section A

Question 1

- (a) Most candidates calculated the lag time correctly, but with some answers they did not add 'hours' to the answer.
- (b) The rising limb was identified correctly by the vast majority of candidates in **(b)(i)**. The identification of **B** in **(b)(ii)** was more problematical. A satisfactory majority identified it as base flow or groundwater flow. Some identified it as water table, even although it was identified as a flow in the resource. Some candidates identified it as throughflow, but the rising line was too shallow to be throughflow.

- (c) This was answered well by most candidates, although the detail and precision in describing and explaining the movement of water and the effect on hydrographs was often quite basic. There is still confusion between porosity and permeability and their relative effects on infiltration and overland flow. In this context it is the permeability of soils that is important. Many still believe that clay is not porous when it is more porous than many other soils. But its permeability is very low. There was sometimes a lack of connection between interception by vegetation and the effect on the hydrograph. In this context, simply describing a hydrograph as 'flashy' did not provide sufficient detail.

Question 2

- (a) Answers to this question reflected the comments made earlier about the use of resources. The question required a synthesis of the distribution of the global warming consequences rather than a point by point description of specific locations.
- (b) Answers were generally weak. Many candidates did not realise that the question required a discussion of how greenhouse gases have been changing the composition of the atmosphere, leading to global warming and some of the consequences mapped in the resource. A number of candidates were preoccupied with the ozone layer when attempting to account for global temperature change. Where the enhanced greenhouse effect was discussed, little detail was presented on the origin of the gases, other than carbon dioxide. The enhanced greenhouse effect needed to be clearly explained and related to the consequences.

Question 3

- (a) The majority of candidates identified the mass movement as soil creep or heave, with some suggesting it was a slide, which was also acceptable. Explanation for the movement was generally weak, with little understanding of the processes involved in either creep (heave) or sliding.
- (b) The emphasis was on the role of precipitation, as a climatic parameter, in influencing the type and rate of mass movement. However, understanding of the mechanisms whereby mass movement was initiated was poor. The limit of the explanation was that water in slope materials increased the weight of the material and therefore made it more likely to fail, usually as mudflows. There was some attempt to describe the process of lubrication but without much accuracy. Many candidates did try to relate the role of climate in influencing weathering, such as freeze-thaw, but then were unable to explain how this affected mass movement such as rockfalls. Better answers recognised that snow fall leads to avalanches and that melting of the permafrost in summer leads to solifluction. The better answers related vegetation growth to climate and then the influence of that vegetation in protecting slopes and reducing the rate of mass movement.

Question 4

- (a) No problems were experienced with either part of (a).
- (b) Most candidates were able to give two cogent reasons.
- (c) Most of the reasons listed in the Mark Scheme were mentioned by candidates overall. The development of the points was sometimes lacking, so that answers resembled a list rather than a reasoned argument.

Question 5

- (a) Most were able to identify the correct country.
- (b) Some candidates seemed not to understand the term 'pattern' and simply listed the countries from which immigrants to South Africa came. Some candidates also did not notice the significance of the different width of the flows. A general synthesis was required rather than a complete list of the countries. Better answers provided a synthesis of countries, scale of migration and distance involved.

- (c) Answers were wide ranging in terms of the reasons identified, but tended to be simple lists of pull and push factors without really assessing why there should be large flows rather than individual flows, and why migrants were moving to MEDCs rather than to other countries. Many refugees move from one LEDC to another LEDC. They do not all move to MEDCs. Describing push factors, on their own, was not a complete answer to the question.

Question 6

- (a) Both (a)(i) and (a)(ii) were correctly identified by the majority of candidates.
- (b) This was answered correctly by most.
- (c) The question asked for an explanation of the difficulties experienced by people living in poor districts of cities. Most of the answers simply described the issues with no explanation. Thus, crime was mentioned but with little explanation as to why crime was more prevalent in such areas. This was also true of many of the other issues described, such as disease, overcrowding, etc. Better answers made use of specific examples .

Section B – The Physical Core

Question 7

- (a) In (a)(i) abrasion was sometimes confused with attrition and answers often mentioned erosion by particles without mentioning the role of water in dragging the material along the river bed. This was an example of the slight imprecision in the definition of Physical Geography concepts noted in previous reports. Hydraulic action was defined in more precise terms. In (a)(ii) few candidates were able to explain turbulent flow satisfactorily. Many confused it with helicoidal flow.
- (b) Answers to this question were generally not good, especially the quality and accuracy of the diagrams. Few candidates provided a realistic diagram for levees and many had little understanding of either the features or their explanation. Answers to oxbow lakes were better, but again the diagrams were often less detailed than required.
- (c) There was a very satisfactory response to this question with answers often containing relevant and accurate examples. Both hard and soft engineering techniques were noted and evaluated. Some very good marks were awarded.

Question 8

- (a) Both definitions in (a)(i) were generally accurate with sublimation more so than sensible heat transfer. Answers to part (a)(ii) were more variable. Most candidates clearly understood the nature of temperature inversions, but explanations were often lacking in some respect, usually in terms as to why there was rapid cooling on some ground surfaces at night time.
- (b) Those candidates who chose this option had a clear understanding of what happens when solar radiation enters the Earth's atmosphere. Many diagrams were excellent and detailed, but some were very simplistic and lacking in detail. The main issues were well known but there was an inability to transfer that understanding to a diagram.
- (c) Some very detailed answers were provided, but many restricted the discussion to temperature rather than analysing climate in general, such as precipitation, wind and humidity. The urban heat island effect was well known although there was sometimes confusion over albedos.

Question 9

- (a) Definitions of hydrolysis did not always refer to hydrogen ions or acidulated water, but most candidates realised that it affected feldspar and produced kaolin. There was some confusion over carbonation, but most candidates had sufficient understanding to at least get one mark. The understanding of the weathering process of salt crystal growth was often impressive and maximum marks were often awarded. There were two key issues that sometimes needed more detail. These were the need for the saline water to enter the rocks somehow and then for the water to be evaporated to produce the salt crystals.
- (b) Understanding of the creation of mountains at tectonic plate margins was rudimentary. Diagrams were generally poor. Many diagrams simply showed the two edges of continental plates at collision boundaries simply buckling into the air. It has been forgotten that before the two plates collide, marine sediments will be crushed as the Tethys Sea sediments to form the Himalaya. Mountain formation at destructive plate boundaries was better described and explained. The question referred to mountains in general, and not just to fold mountains. Thus, a few candidates explained block faulted mountains as well as volcanic mountains. One candidate even used geosynclines to explain fold mountains. The term is now generally obsolete, but the concept was acceptable in this context.
- (c) Answers to this question were very variable. Most candidates saw the need to discuss factors other than rock type, such as climate and vegetation. However, there were some very good answers.

Section C – The Human Core

Question 10

- (a) Diagrams were highly variable in detail and quality. Often there was incomplete labelling of the axes and the dependency classes were often ignored. Many candidates thought that the age/sex pyramids also indicated birth and death rates. A sizeable minority simply produced the age/sex pyramid without any text, although the question clearly stated, 'with the help of' and not 'by means of.'
- (b) There were many good answers, displaying clear understanding of this topic.
- (c) There were many excellent answers covering both the role of education and many other factors influencing birth rate. Thus, the evaluation component of the answers was good, and many Level 3 marks were awarded.

Question 11

- (a) Stepped migration was understood by most candidates. Reasons for stepped migration were generally sound, although a few candidates discussed general reasons for migration, rather than the specific reasons for the stepped process.
- (b) Understanding of the term 'family life' seemed to confuse some candidates. Thus, answers were often generic with respect to migration in general. However, even if this approach was adopted, there were often points that could relate to family life and could be credited.
- (c) Residential segregation was understood by most and factors other than economic were often analysed at some depth.

Question 12

- (a) Spatial competition was understood in general terms, but the explanation of spatial competition was generally limited.
- (b) There was much generic material, but some specific case studies were used. There was some uncertainty over the definition of Central Business District, with some inappropriate examples. The question asked for description, so no explanation was required.
- (c) There was confusion as to what the inner-city area comprised. The most popular example was the London Docklands redevelopment. Detail on this was often very impressive.

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Paper 9696/13
Core Geography

General comments

The examination produced many answers of good quality. Most candidates seem to have been well prepared, and displayed a clear understanding of the concepts involved. Many answers were detailed and thoughtful, but of course wide ranging in terms of approach and effectiveness. The examination proved accessible to most, and the progress of recent years has been maintained.

There was no pattern of rubric errors, and this continues to be an improving aspect of examination technique. Few candidates now attempt all questions in **Section A**, and it is now unusual to find incomplete answers, which reflects effective planning in terms of time allocation.

Many answers were detailed and relevant, but there was a tendency to rely on generic material rather than specific examples. Case study material is demanded in some questions, such as **Question 12(b)**, but would enhance many other answers, even if not specifically demanded. Answers to **Question 4(c)**, **Question 5(c)**, and **Question 6(c)** were often very general, and would have been improved with appropriate case study material. This comment is often most applicable to Human Geography questions, but can also apply to questions on Physical Geography, where specific detail on soils and/or vegetation, for example, was sometimes lacking. Answers to **Question 9(c)** were often general, with little specific slope details.

Candidates effectively used the source material provided. They were capable of manipulating and using the data, and did not confuse description with explanation. However, there remains a weakness in identifying general trends or patterns from data provided. Simply commenting on many individual changes over time may well conceal a valid general pattern.

Some candidates made full use of diagrams, with good results, but diagrams continue to be of variable quality. Obviously, diagrams need to be drawn when specified, but often the opportunity presents itself and is not used.

Most candidates performed competently in the examination. From year to year there is evidence of continued improvement, and an awareness of the skills needed to succeed. Answers were often detailed and thorough, but would benefit from clearer evaluation and assessment to reach and maintain Level 3.

Teachers preparing candidates for the revised 9696 syllabus from 2018 are reminded that candidates will have to answer all three topics in Section A for both the Core Physical Geography and Core Human Geography papers.

Comments on specific questions

Section A

Question 1

- (a) There were few difficulties with **(a)(i)**, and most displayed clear knowledge of the differences between the storm hydrographs. The term 'flashy', however, is best avoided without some degree of qualification.
- (b) The difficulty was in identifying two clear 'characteristics'. Many discussed variations within the one characteristic, such as steep/gentle, permeable/impermeable. Better answers often used vegetation and soils, although specific details of each were limited. Generic answers were common, and the inability to give specific vegetation/soils details, was rather limiting.

Question 2

- (a) The fluctuations of temperature often dominated the analysis, and the general increase of both carbon dioxide and temperature was not always clearly identified. Detailed analysis of changes from year to year did little to identify 'trends'.
- (b) Some candidates were preoccupied with the ozone layer when attempting to account for global temperature change. Little detail was presented on the origin of greenhouse gases, other than carbon dioxide. The enhanced greenhouse effect needed to be clearly explained, but few candidates gave this the emphasis it deserved.

Question 3

- (a) There were some clear descriptions from those candidates who correctly referenced the resource, but others simply offered theoretical details of landslides and mudflows. The ability to use and refer to resources provided can be crucial, when specifically demanded, as in **Question 3(a)**.
- (b) In this instance, candidates could offer information from Fig. 3, but this was not necessary to achieve high marks. Candidates wrote convincingly about the role of high water content, but rarely of slope angle, vegetation or even human activity.

Question 4

- (a) There were no problems with either part of (a).
- (b) Presented in Table format, there was a lack of visual impact. Furthermore, the changing data, from year to year, made the identification of general trends, more difficult.
- (c) This topic was clearly understood, and there were some high-quality answers. There was broad acknowledgement of the value of education, and many answers were wide ranging. However, weaker answers tended towards a list, without developing individual points or using exemplar material.

Question 5

- (a) Very few were unable to identify the correct region.
- (b) The provision of data over a twenty-year period was used by some to identify and discuss the changes which took place, rather than the pattern that existed in 2010. However, better answers saw, the pattern in terms of MEDC/LEDC regions.
- (c) Answers were wide ranging in terms of the factors identified, but they were often generic, without the support of specific detail. The best answers incorporated case study material, and did not drift into a consideration of 'pull' factors.

Question 6

- (a) A number of candidates did not identify the 'green belt', suggesting unfamiliarity with this type of resource.
- (b) Many were not familiar with the concept of planning in this context, and attempted explanations, which were not required.
- (c) Most candidates concentrated on negative consequences, but nevertheless often covered a range of valid points.

Section B – The Physical Core

Question 7

- (a) The definitions were clearly defined by most, and there was an understanding of braiding, which enabled most to achieve at least two marks in (a)(ii).

- (b) Few understood that pools and riffles precede the formation of meanders through the development of sinuous flow. Many confused riffles with slip-off slopes. Hence, the role of the thalweg was neglected, as was helicoidal flow.
- (c) Some confused a storm hydrograph with an annual hydrograph. The focus was often on precipitation, and variations over the year, including seasonality based on monsoons and snow melt, etc. This was well done, but there was a lack of human discussion in terms of irrigation, water abstraction and seasonal changes in vegetation and land use.

Question 8

- (a) Candidates scored well on both parts of (a), although there was some confusion over temperature changes with height.
- (b) Those who chose this option had a clear understanding of lapse rates, but rather neglected to follow through on weather conditions.
- (c) Some very detailed answers often discussed thoroughly how latitude influences global temperature patterns. Ocean currents, and the distribution of land and sea, were also clearly understood, but the final assessment was limited, confining many answers to Level 2.

Question 9

- (a) Definitions of oxidation did not always include the addition of oxygen, and organic action tended to be limited in range usually to root action.
- (b) Most candidates understood the concepts of diverging plates and convection currents. However, the diagrams themselves often lacked detail and clarity, and the landforms presented often included island arcs.
- (c) For many, the emphasis on human activity was welcome. Candidates understood the wide range of human activities that could influence slopes, but there was limited discussion of factors such as rock structure, relief, soils etc., and so ability to achieve Level 3 was limited.

Section C – The Human Core

Question 10

- (a) The term 'natural increase' was understood in general terms, but few ventured into 'natural decrease', or clearly eliminated migration from their definitions.
- (b) Many good answers displayed clear understanding of this topic. They contained much detail and emphasis on social, economic, and political factors, but not always with sufficient exemplar support.
- (c) Many candidates were aware of the descriptive nature of the demographic transition model (DTM), its Eurocentric base, and the need for a fifth stage. Nevertheless, many answers were simply detailed descriptions of each of the stages, drifting away from the focal point of 'usefulness'.

Question 11

- (a) Age and gender were identified, but not dependency, although many of the pyramids in (a)(ii) displayed young and elderly dependents. The effects of outmigration were identified by most.
- (b) There were some very good answers. Counterurbanisation was clearly understood, and there was some very good exemplar material relating to Auckland.
- (c) Two main discussion points were the type of information required, and the sources of that information. There was reasonable discussion of both, but without the evaluative discussion to access Level 3.

Question 12

- (a) Many candidates could name a shanty town, but specific detail was often lacking. It is very difficult to provide a satisfactory answer without case study material. Generic answers are limited in this context.
- (b) Once again, there was much generic material, but some specific schemes were also mentioned. The Santa Marta project in Rio, favela tourism, community programmes, and the Liter of Light project, associated initially with the Philippines were all effectively discussed.
- (c) The evaluation of success depended upon the detail of the schemes offered in **Question 12(b)**. There were a few excellent answers, where specific schemes were competently assessed.

GEOGRAPHY

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| <p>Paper 9696/21 Advanced Physical Options</p> |
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General comments

The overall quality of responses to this paper was quite good. Many candidates displayed a reasonable knowledge of physical processes. They would benefit further by demonstrating a more secure understanding of why these processes lead to the development and formation of the physical features, phenomena and environments specified in the syllabus.

Many candidates made use of appropriate named examples in order to illustrate their ideas. The best responses included a more detailed use of relevant case studies, well integrated into the response. This use of examples, and especially case studies, was beneficial, gaining more credit and adding greater quality to the answer.

Although some candidates used diagrams and sketch maps in their answers, more candidates should be encouraged to do so in order to increase the clarity and focus of their response. Accurate labelling is essential to convey good knowledge of the topic while effective annotation can often gain further credit by showing sound understanding of the relevant concept. Where the question specifically asks for the use of a diagram, it is important that the diagram is clearly linked to the demands of the question and to the written response which usually accompanies it.

The paper provided a variety of resource material. The better responses interpreted and elaborated on the information contained in the sketches, graphs and photographs. Less successful responses tended to repeat or describe them.

Teachers preparing candidates for the revised 9696 syllabus from 2018 are reminded that candidates will have to answer a compulsory resource-based question in each of their two chosen Options.

Comments on specific questions

Tropical environments

Question 1

- (a) Most candidates were able to name and describe the main layers of the rainforest, and some added their own knowledge, such as the height of the different layers above ground level. The better responses clearly described some of the more detailed characteristics shown in the sketch and could often explain them in terms of competition for sunlight and the process of photosynthesis. The best answers made reference to the continuous growing season, the high rates of net primary productivity and the high annual precipitation. Less successful responses mentioned the rainforest climate in simple terms, but did not make the connection between the climate and specific adaptations of the vegetation.

- (b) Of the two ecosystems mentioned in the question, the tropical rainforest was chosen more often than the savanna ecosystem. A small number of responses did not make their choice clear and answered the question in very general terms: this approach could gain little credit. Most candidates were able to describe the effects of human exploitation on the chosen ecosystem and the best responses made a clear link to the effects of this exploitation on nutrient cycling. In less successful responses, the lack of a clear link to nutrient cycling often weakened the answer to the second part of the question on sustainable management. A variety of management strategies were quoted, sometimes based on an appropriate case study, but the emphasis of many responses tended to be on their general success rather than their sustainability. The best responses included a well-argued evaluation of the various management strategies. A significant number of responses included no evaluation at all.

Question 2

There were too few answers to make comment appropriate.

Coastal environments

Question 3

- (a) Good answers recognised that this was a recurved spit, and could effectively explain how factors such as prevailing winds, dominant winds, longshore drift, deposition and wave refraction had led to the development and formation of the landform. In addition, the better responses were able to show how and why deposition caused beaches, salt marshes and sand dunes to develop. However, a clear description of the named landforms was often neglected. Less successful responses named the relevant processes, e.g. longshore drift, but did not explain how they operated. Some weaker responses did not recognise the landforms in the photograph and discussed the formation of a tombolo or a bar.
- (b) Most candidates were able to list the conditions required for the development of coral reefs and discuss the major threats to their continued development. The best responses developed each of the relevant conditions by showing how temperature, sunlight, salinity, etc. are related to the nature of the symbiotic relationship between the coral polyps and the zooxanthellae, and how they are essential for the development of a healthy coral reef ecosystem. The best answers were able to explain how a deterioration in some of these conditions can lead to coral bleaching, and then linked this to the threats discussed in the second part of the question. Most of the threats to coral reefs were well described, and the better responses showed a good understanding of the nature of the threats. Human-induced climate change (global warming) was an often-quoted threat and the best answers linked this to an increase in sea temperatures, coral bleaching and the death of the reef. Less successful answers did not understand that a slow rise in sea-level, related to climate change, was a minor threat to which most coral reefs could respond effectively. As with many other **part (b)** questions, the command to ‘assess’ the threats was only dealt with effectively in the best responses.

Question 4

- (a) This question has five main aspects; ‘describe’, ‘explain’, ‘rock type’, ‘rock structure’ and ‘cliff profiles’. The best answers managed successfully to address all five aspects of the question. Most candidates could name the processes involved and many had a limited understanding of rock type and structure. It was very rare, however, for a response to link processes and geology to cliff profiles. Even when ‘explanation’ was satisfactory, ‘description’ was often weak or absent. Diagrams were sometimes used, but almost all of them showed vertical cliff profiles, irrespective of the rock type and structure included in the diagram. Many responses related their ideas to coastlines in plan form (headlands and bays), or focussed on micro-features such as caves, gaining little credit as a result.

- (b) Most candidates were able to name the various processes of erosion, transportation and deposition and a significant number were able to describe the way in which these processes operate in a coastal environment. The best answers were based on an appropriate case study of a stretch of coastline, showing how human activities had interacted with the natural processes in both positive and negative ways. Even the better answers did not deal with the 'to what extent' command and there was very little understanding that prevailing winds, different types of waves and the natural configuration of the coastline might be just as important as human activities. In the weaker responses, human activities such as pollution and tourism were mentioned, but with little real attempt to relate these activities to the physical processes operating along actual coastlines.

Hazardous environments

Question 5

- (a) The best answers included some good understanding of the relevant atmospheric processes by making reference to ideas such as evaporation, condensation and latent heat transfers. Low pressure and the influence of the Coriolis force also featured in these better answers. A clear description of the nature of a tropical cyclone was often neglected, even in the better responses. There was often some reference to the diagram provided, but only in terms of the swirling motion of the cyclone and the nature of the 'eye' of the storm. The best answers mentioned the strongest winds in the eye-wall, which were referred to in the diagram. Less successful responses commonly confused cyclones with tornadoes and explained the development of the storm in terms of the convergence of hot and cold air masses.
- (b) The best answers included a clear indication of why cyclones are hazardous (high winds, heavy rainfall, storm surges) and carefully linked these hazards to their impacts, such as the type of damage they can do. This often led into a good account of how these hazardous impacts can be reduced, even though very few responses gave a clear evaluation of the effectiveness of the different management strategies. Case studies were used, sometimes to good effect, especially when place-specific detail was linked to the effectiveness or otherwise of the management strategies that had been adopted. Less successful responses listed the hazards as 'death, damage and disruption' but did not explain how the cyclone produced these impacts. Some responses confused the hazards of tropical cyclones with those of tornadoes, quoting storm cellars as a suitable management strategy.

Question 6

- (a) A few responses confused mass movements with tectonic movements (earthquakes in particular) but most candidates could outline two types of mass movement. Avalanches, landslides, rockfalls and mudflows were the mass movements most often chosen. Although many candidates could explain why they happened, a clear description of their nature was often neglected, even in the better responses. The best responses were able to make a convincing comparison of the two chosen mass movements. The second part of the answer often focused on the impacts of the mass movements (death, damage, disruption) while the better answers mentioned the reasons for their hazardous nature, such as their speed, the mass of the materials involved, their unpredictability, local population density and the perception of the hazard.
- (b) The choice of the hazardous area was often crucial to the quality of the response. Although the question was quite open in terms of the type of hazardous area that could be chosen, many responses continued to develop the theme of hazardous mass movements. The best answers were firmly based on a case study of a hazardous area that included much convincing place-specific detail. Places that experience a variety of hazards, e.g. Japan, often led to impressive answers that were wide-ranging yet detailed in their explanation, exemplification and evaluation. There was often good assessment of the success of management strategies but very rarely was there any real understanding of how sustainable the different strategies are. Less successful responses often listed generic management strategies that could be applied to any hazard, e.g. education of the population, and made little attempt to link these strategies to the chosen area and its hazards.

Arid and semi-arid environments

Question 7

There were too few answers to make comment appropriate.

Question 8

There were too few answers to make comment appropriate.

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General comments

There were very good answers to some questions. Most of the questions had several components and some less successful responses concentrated on one element to the detriment of the other. Answers did need to cover all required elements for marks at the upper end to be awarded. Diagrams and sketches were often of a poor quality. Questions that demanded an evaluation or a reasoned argument based on an assessment of conflicting statements, such as for **Question 5(b)**, would have benefited from a few brief sentences outlining the issues that were being discussed. Conclusions should come at the end of answers rather than being anticipated at the beginning. The Tropical Environments questions caused problems for many candidates as did **Question 4(b)**. The responses to these questions are examined in greater detail later.

The concept of sustainability was not fully understood. Some less successful responses responded to the phrase 'sustainable management' in **Questions 2, 3, 7 and 8** with arguments based on economic and social considerations, both of which are somewhat divorced from traditional Physical Geography. In order to address Environmental issues satisfactorily, the physical geography involved needs to be fully understood.

Teachers preparing candidates for the revised 9696 syllabus from 2018 are reminded that candidates will have to answer a compulsory resource-based question in each of their two chosen Options.

There were few rubric infringements and only an occasional candidate answered from more than two sections.

Comments on specific questions

Tropical Environments

Question 1

- (a) Less successful responses simply repeated the information provided in the resource. This provided a few marks for the 'describe' part of the question. However, very few candidates knew enough about soils and tropical soils in particular to explain the downslope variations. This meant that only a limited number of marks could be awarded.
- (b) The characteristics of savanna vegetation were not well known. Even the better responses described just one part of the full range of savanna vegetation, with no real understanding that this vegetation type shows considerable variation, from the edge of tropical rainforest to the start of semi-arid environments. Much of the description of the vegetation seemed to be more characteristic of the vegetation of semi-arid areas rather than savanna vegetation. In the second part of the question, there was some attempt to describe the ways that the vegetation has been influenced by human activities, but very little on the other factors that influence this type of vegetation, such as seasonality. This also reflected an incomplete understanding of savanna vegetation. As a result of this, the attempted solutions part of the question tended to ignore physical geography.

Question 2

- (a) Less successful responses focused on granite landforms rather than deep weathering profiles. The information presented about the chemical weathering of granite was often accurate but answers did not translate this knowledge into an understanding of the nature and development of deep weathering profiles. Better answers were able to describe the process of hydrolysis, the decomposition of granite and the formation of kaolin but were unable to combine this with the relevant characteristics of the rock structure, especially jointing, in influencing the development of the weathering profile. Many answers would have been improved by better diagrams.
- (b) Responses mostly considered the tropical rainforest ecosystem, with very few answers based on the savanna ecosystem. Less successful responses paid only a brief attention to the first part of the question and, as noted in the general comments, moved quickly onto 'attempted solutions'. Those that did discuss difficulties, tended to interpret this as the problems of human exploitation, and gave reasons for deforestation and/or environmental degradation, whereas the question required a discussion of the physical factors of the ecosystem which made sustainable management difficult. There was thus a tendency to ignore the Physical Geography.

Coastal Environments

Question 3

- (a) Candidates who examined the photograph in detail tended to answer the question well. Several different landforms were identified and explained. However, many diagrams tended to be generic textbook diagrams rather than ones based on the photograph. The describe command was not well responded to unless the candidate drew a good diagram based on the photograph. Marine processes were often just named rather than fully described. The standard discordant 'headlands and bays' explanation was common, even though the photograph showed a single rock type with cracks and weaknesses rather than alternating zones of 'hard' and 'soft' rock.
- (b) There were quite a few very sound responses to this question, firmly based on a named stretch of coastline and linking the problems of management to accurate physical processes. The Holderness Coast of eastern England was a popular choice, but there were some good West African and South African examples. A range of attempted solutions were evaluated but the concept of sustainability was largely ignored in most responses. Less successful responses were mainly generic and could have related to any stretch of coastline. If a coastline was stated, it was sometimes just a general location and the answer seemed unrelated to the stretch of coastline or could have related to any stretch of coastline. Even when it was clear that a specific coastline was being examined, the geographical detail was often limited and often erroneous. Also, there was often little attempt to assess why that coastline needed managing.

Question 4

- (a) Responses were very reasonable on the modes of transport, but less so on why transport takes place. Deposition was considered very briefly, if at all. The link between process and the development of landforms was generally not well understood, especially with respect to the role of longshore drift.
- (b) The response to this question was not strong. The phrase 'relative importance' was not really considered by most candidates and the word 'evolution' was generally ignored. Rockfalls and slumping were described, and these were linked to cliff profiles rather than cliff evolution. Diagrams were very poor quality.

Hazardous Environments

Question 5

- (a) Many candidates used the resource quite well but less successful responses simply ignored it. The characteristics of pyroclastic flows were described more fully than the characteristics of ash fallout. However, there was sometimes confusion concerning the nature of pyroclastic flows, with some less successful responses confusing them with lava flows even though the resource shows them as different. The better responses linked the characteristics to the hazardous effects whereas weaker responses focused on death, damage and disruption without any reference to why these aspects of a volcanic eruption were able to cause these impacts. Case study material was often used to good effect, such as Montserrat, Mt St Helens and Pinatubo.
- (b) Many agreed with the premise in their introductions but then disagreed with it in their conclusions. Methods used to try to predict earthquakes were not well understood and were described in very general terms. There was little attempt to assess their usefulness. Prediction methods for volcanic eruptions were described in better detail and were often developed quite well, such as tilt meters detecting bulges on the sides of the volcano, emission of gases and rise in temperatures, indicating that magma was rising inside the volcano. The better responses used some excellent case study material to substantiate their arguments.

Question 6

- (a) The better responses were enhanced by some well annotated diagrams. However, many candidates (including some of the better ones) spent very little time describing the 'nature of tornadoes' and moved quickly onto explaining their development. Some less successful responses confused tornadoes with hurricanes.
- (b) Avalanches were popular, with good detail described. They were often paired with mudflows or landslides. Description and explanation of the mass movements, especially avalanches, were often good and the methods used to limit the hazardous effects were also described quite well. 'Assess the extent' was answered less well and was commonly linked to case studies, not all of which were useful in answering the question.

Arid and Semi-arid Environments

Question 7

- (a) Descriptions of the vegetation shown in the photograph tended to be too brief or simply wrong, with many candidates describing features that were not present. Some less successful responses simply assumed that some desert vegetation should have been present in the photograph when it wasn't. The best answers, however, did mention the density of vegetation in the different parts of the photograph, and also named particular species or types of vegetation. Most candidates were able to explain some of the adaptations, and the better responses linked these adaptations very clearly to the challenges posed by the hot arid environment.
- (b) Most candidates simply tried to define desertification and then moved on to the second part of the question. A few candidates saw desertification as simply the development of deserts and described the descending limb of the Hadley Cell, offshore cold ocean currents, continentality and the rain shadow effect. The process of desertification was not well assessed and very few candidates recognised some of the important links between human actions and physical processes. Management strategies were described quite well but the words 'sustainably' and 'evaluate' were not sufficiently attended to. The question focused on areas that had been desertified, thus management of desert areas, such as Dubai and United Arab Emirates, was not applicable.

Question 8

- (a) The processes were described quite well, but explanation was weaker. However, there seemed to be a general misunderstanding of the size of particles moved. Many candidates wrote about large boulders being transported by traction or creep. Some candidates spent too much time describing the formation of different types of sand dunes.
- (b) In many cases, it was unclear whether arid or semi-arid environments were being assessed. This significantly weakened the answers. Many 'problems of management' were described and climate was discussed in detail by the better answers. Soils and biomass productivity were often ignored, replaced with a discussion of social and economic problems.

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General comments

The overall quality of responses to this paper was quite good. Many candidates displayed a reasonable knowledge of physical processes. They would benefit further by demonstrating a more secure understanding of why these processes lead to the development and formation of the physical features, phenomena and environments specified in the syllabus.

Many candidates made use of appropriate named examples in order to illustrate their ideas. The best responses included a more detailed use of relevant case studies, well integrated into the response. This use of examples, and especially case studies, was beneficial, gaining more credit and adding greater quality to the answer.

Although some candidates used diagrams and sketch maps in their answers, more candidates should be encouraged to do so in order to increase the clarity and focus of their response. Accurate labelling is essential to convey good knowledge of the topic while effective annotation can often gain further credit by showing sound understanding of the relevant concept. Where the question specifically asks for the use of a diagram, it is important that the diagram is clearly linked to the demands of the question and to the written response which usually accompanies it.

The paper provided a variety of resource material. The better responses interpreted and elaborated on the information contained in the sketches, graphs and photographs. Less successful responses tended to repeat or describe them.

Teachers preparing candidates for the revised 9696 syllabus from 2018 are reminded that candidates will have to answer a compulsory resource-based question in each of their two chosen Options.

Comments on specific questions

Tropical environments

Question 1

- (a) Most candidates were able to name and describe the main layers of the rainforest, and some added their own knowledge, such as the height of the different layers above ground level. The better responses clearly described some of the more detailed characteristics shown in the sketch and could often explain them in terms of competition for sunlight and the process of photosynthesis. The best answers made reference to the continuous growing season, the high rates of net primary productivity and the high annual precipitation. Less successful responses mentioned the rainforest climate in simple terms, but did not make the connection between the climate and specific adaptations of the vegetation.

- (b) Of the two ecosystems mentioned in the question, the tropical rainforest was chosen more often than the savanna ecosystem. A small number of responses did not make their choice clear and answered the question in very general terms: this approach could gain little credit. Most candidates were able to describe the effects of human exploitation on the chosen ecosystem and the best responses made a clear link to the effects of this exploitation on nutrient cycling. In less successful responses, the lack of a clear link to nutrient cycling often weakened the answer to the second part of the question on sustainable management. A variety of management strategies were quoted, sometimes based on an appropriate case study, but the emphasis of many responses tended to be on their general success rather than their sustainability. The best responses included a well-argued evaluation of the various management strategies. A significant number of responses included no evaluation at all.

Question 2

There were too few answers to make comment appropriate.

Coastal environments

Question 3

- (a) Good answers recognised that this was a recurved spit, and could effectively explain how factors such as prevailing winds, dominant winds, longshore drift, deposition and wave refraction had led to the development and formation of the landform. In addition, the better responses were able to show how and why deposition caused beaches, salt marshes and sand dunes to develop. However, a clear description of the named landforms was often neglected. Less successful responses named the relevant processes, e.g. longshore drift, but did not explain how they operated. Some weaker responses did not recognise the landforms in the photograph and discussed the formation of a tombolo or a bar.
- (b) Most candidates were able to list the conditions required for the development of coral reefs and discuss the major threats to their continued development. The best responses developed each of the relevant conditions by showing how temperature, sunlight, salinity, etc. are related to the nature of the symbiotic relationship between the coral polyps and the zooxanthellae, and how they are essential for the development of a healthy coral reef ecosystem. The best answers were able to explain how a deterioration in some of these conditions can lead to coral bleaching, and then linked this to the threats discussed in the second part of the question. Most of the threats to coral reefs were well described, and the better responses showed a good understanding of the nature of the threats. Human-induced climate change (global warming) was an often-quoted threat and the best answers linked this to an increase in sea temperatures, coral bleaching and the death of the reef. Less successful answers did not understand that a slow rise in sea-level, related to climate change, was a minor threat to which most coral reefs could respond effectively. As with many other **part (b)** questions, the command to ‘assess’ the threats was only dealt with effectively in the best responses.

Question 4

- (a) This question has five main aspects; ‘describe’, ‘explain’, ‘rock type’, ‘rock structure’ and ‘cliff profiles’. The best answers managed successfully to address all five aspects of the question. Most candidates could name the processes involved and many had a limited understanding of rock type and structure. It was very rare, however, for a response to link processes and geology to cliff profiles. Even when ‘explanation’ was satisfactory, ‘description’ was often weak or absent. Diagrams were sometimes used, but almost all of them showed vertical cliff profiles, irrespective of the rock type and structure included in the diagram. Many responses related their ideas to coastlines in plan form (headlands and bays), or focussed on micro-features such as caves, gaining little credit as a result.

- (b) Most candidates were able to name the various processes of erosion, transportation and deposition and a significant number were able to describe the way in which these processes operate in a coastal environment. The best answers were based on an appropriate case study of a stretch of coastline, showing how human activities had interacted with the natural processes in both positive and negative ways. Even the better answers did not deal with the 'to what extent' command and there was very little understanding that prevailing winds, different types of waves and the natural configuration of the coastline might be just as important as human activities. In the weaker responses, human activities such as pollution and tourism were mentioned, but with little real attempt to relate these activities to the physical processes operating along actual coastlines.

Hazardous environments

Question 5

- (a) The best answers included some good understanding of the relevant atmospheric processes by making reference to ideas such as evaporation, condensation and latent heat transfers. Low pressure and the influence of the Coriolis force also featured in these better answers. A clear description of the nature of a tropical cyclone was often neglected, even in the better responses. There was often some reference to the diagram provided, but only in terms of the swirling motion of the cyclone and the nature of the 'eye' of the storm. The best answers mentioned the strongest winds in the eye-wall, which were referred to in the diagram. Less successful responses commonly confused cyclones with tornadoes and explained the development of the storm in terms of the convergence of hot and cold air masses.
- (b) The best answers included a clear indication of why cyclones are hazardous (high winds, heavy rainfall, storm surges) and carefully linked these hazards to their impacts, such as the type of damage they can do. This often led into a good account of how these hazardous impacts can be reduced, even though very few responses gave a clear evaluation of the effectiveness of the different management strategies. Case studies were used, sometimes to good effect, especially when place-specific detail was linked to the effectiveness or otherwise of the management strategies that had been adopted. Less successful responses listed the hazards as 'death, damage and disruption' but did not explain how the cyclone produced these impacts. Some responses confused the hazards of tropical cyclones with those of tornadoes, quoting storm cellars as a suitable management strategy.

Question 6

- (a) A few responses confused mass movements with tectonic movements (earthquakes in particular) but most candidates could outline two types of mass movement. Avalanches, landslides, rockfalls and mudflows were the mass movements most often chosen. Although many candidates could explain why they happened, a clear description of their nature was often neglected, even in the better responses. The best responses were able to make a convincing comparison of the two chosen mass movements. The second part of the answer often focused on the impacts of the mass movements (death, damage, disruption) while the better answers mentioned the reasons for their hazardous nature, such as their speed, the mass of the materials involved, their unpredictability, local population density and the perception of the hazard.
- (b) The choice of the hazardous area was often crucial to the quality of the response. Although the question was quite open in terms of the type of hazardous area that could be chosen, many responses continued to develop the theme of hazardous mass movements. The best answers were firmly based on a case study of a hazardous area that included much convincing place-specific detail. Places that experience a variety of hazards, e.g. Japan, often led to impressive answers that were wide-ranging yet detailed in their explanation, exemplification and evaluation. There was often good assessment of the success of management strategies but very rarely was there any real understanding of how sustainable the different strategies are. Less successful responses often listed generic management strategies that could be applied to any hazard, e.g. education of the population, and made little attempt to link these strategies to the chosen area and its hazards.

Arid and semi-arid environments

Question 7

There were too few answers to make comment appropriate.

Question 8

There were too few answers to make comment appropriate.

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General comments

The resources in the insert were of a variety of forms with two – for **Questions 1** and **8** – requiring data reading and the other two – for **Questions 4** and **6** – provided as stimulus materials for the candidates.

Teachers preparing candidates for the revised 9696 syllabus from 2018 are reminded that candidates will have to answer a compulsory resource-based question in each of their two chosen Options.

Candidates who have access to relevant examples usually produce stronger answers than those who do not. The need for examples is made clear in the syllabus and repeated on the front of the exam paper. This is particularly important when a question requests exemplification, as in **Questions 2(a)(ii)**, **4(a)** and **7(a)**, but examples are also vital when there is no explicit request, as in **Questions 1(a)**, **3(a)**, **6(a)** and **8(a)(ii)** and in **parts (b)**, where there was no specific statement within the question to use examples or to consider one country.

There has been a notable improvement in the ability of candidates to construct an essay or produce extended writing for **parts (b)**. There is some evidence that this approach is also used in the **parts (a)**, and this can be less productive in terms of using introductions and conclusions, where the command is more directed than that used for the assessment element of the **parts (b)**.

There was little evidence of candidates making rubric errors or using note form for **part (b)** responses.

Comments on specific questions

Production, location and change

Question 1

- (a) (i) Most candidates were able to state three changes in food production predicted to occur for 2030, giving support in the form of the year and the number of calories for that year and for 2030, or by working out the difference.
- (ii) Most candidates demonstrated basic awareness that intensification of production involves increased inputs, leading to a higher amount of production. Better responses developed this by explaining that the inputs are higher in terms of aspects such as: increased units, improved quality, improved technology, education of farmers, etc. leading to higher outputs per unit area. These better responses were able to explain how the input led to higher production such as pesticides reducing the damage to crops and therefore higher production, or, in the case of fertiliser use, increased yield due to increased growth or even faster growth allowing more crops to be planted without resting the soil. Examples were mostly seen from the Green Revolution in India, but equally valid examples were seen at a small scale, even that of the individual farm.

- (b) The question required knowledge of agricultural change in one country – the case study from 1.2 – so one of the factors in achieving success was specific knowledge from one country. Some responses used the Green Revolution with only the name of a country and without any other specific knowledge. Assessing the success was a major factor. It was possible to assess success in any way, with better responses having explicit success criteria, such as food production, food security, productivity or the percentage owning land if land reform is involved, whilst another approach was to assess success from the points of view of different groups of people (stakeholders), such as small farmers, major landholders, the government, environmentalists, or in different locations within the country. Identification of the challenges which remain was mostly attempted as an additional point at the end of the response, but a better way was to use these challenges as part of the assessment of success. For instance, many candidates have their case study organised into sections such as: the change, the pros, the cons and the assessment; thus, with planning, they could recognise that this question would allow them to integrate the cons into the assessment as challenges which remain.

Question 2

There were too few answers to make comment appropriate.

Environmental management

Question 3

- (a) The key to success and relevance was to understand that the question was about demand and not supply. Most candidates understood the requirement to consider variations with levels of development and did this spatially by offering different examples of countries e.g. LEDC, NIC, MEDC. Some candidates offered a temporal approach using one country, but this approach could be equally successful. Weaker responses used converse comments for MEDC and LEDC such: as more personal electrical items and fewer electrical items, respectively. Many excellent responses were seen considering variations in demand from different sectors of an economy at one time compared to another, and displaying an understanding of the role of the domestic sector at different times or in different places.
- (b) Variations in responses were seen based on a range of factors: specific knowledge of sources used to produce electricity in the country selected; choice of countries with a high or even very high contribution of renewable sources; how the 'contribution' was handled and the assessment offered. Some excellent responses were seen for countries with either a high or low contribution in terms of energy mix used to produce electricity, with the additional characteristic that there was sound knowledge of the overall mix and relative contributions. These excellent responses were also able to consider 'contribution' more broadly by looking at other aspects such as: the role of renewables, changes over time, depletion, emissions and energy security. Less successful responses were often characterised by limited knowledge of energy sources rather than resources used to produce electricity and a focus on one type of energy. Some candidates confused gas with oil.

Question 4

- (a) Candidates could make use of the resource in Fig. 2 as a stimulus or develop a response without using Fig. 2. Either way success was dependent on an answer showing awareness of various aspects of the question: using examples, focusing upon solid waste, considering effective management, the reduction of pollution - any type - and explaining rather than just describing. Of these, effective management was the least understood and so answers displaying knowledge of some aspects of effective management such as the scale, financing, good governance and training of staff did well. Most candidates displayed knowledge about the role of individuals in waste management strategies such as recycling, but were less likely to demonstrate understanding that this is part of effective management. This is part of the skill of deconstructing a question.

- (b) Candidate responses could include a variety of environments at risk at any scale. The key to a successful response was a focus on 'measures' and their relative success (or failure). Better responses used specific success criteria and offered evidence in terms of data or examples to support the assessment. Success was considered in terms of environmental degradation, improvement in environmental quality and the reduction in, or removal of, risk. The degree of success was also considered as varying spatially, temporally or in relation to different groups of people. Weaker responses focused more on describing environments at risk, repeated the same ideas with different locations and/or were lacking in knowledge of specific measures taken to protect the environment(s) at risk. This was particularly true with very broad environments such as China's atmosphere, where specific measures are insufficiently robust to allow assessment of success to take place.

Global interdependence

Question 5

- (a) Candidates used a variety of types of aid with the most common being: relief aid, development aid, tied aid and bilateral aid, where issues such as dependency, governance, corruption, disruption to local economy and ties in tied aid were frequently well developed. Support from examples was generally sound.
- (b) Knowledge of trade was mostly focused on the negative aspects for exporting countries, focusing upon issues such as: dependency on primary products and fluctuating market prices, competition and unforeseen events such as climatic hazards. Economic development was also quite narrow in approach, focusing upon the economic aspect. Some candidates provided a more balanced approach considering the benefits of trade for both exporting and importing countries or developed a response temporally or spatially to include comment on the benefits of trade to NICs. Argument varied, with most agreeing with the statement and illustrating this from the perspective of LEDCs and/or the difficulties of countries trading with members of trade blocs, though better responses were able to demonstrate some disagreement as well as agreement. Others had a wider view of economic development, considering benefits for the political, and social well-being of the people, as well as economic benefits to a country of trade.

Question 6

- (a) A range of issues were offered with most candidates able to not only describe but also to explain what makes an issue. Those commonly seen were economic in nature such as: reliance and dependency, seasonality, falling tourist numbers in response to factors e.g. fashion and unforeseen events, or socio-cultural for example e.g. westernisation, diet, Doxey.
- (b) Success for this question was reliant upon candidates' ability to deconstruct the question, to respond to the different parts and to remain relevant. Some candidates successfully remained focused upon how ecotourism can or cannot 'overcome the negative environmental impacts associated with other types of tourism'. They were also able to provide exemplar support to assess the extent to which ecotourism can overcome these negative impacts or prevent them from happening in the first place. These more successful responses chose suitable examples of places from case studies or selected details from examples which were clearly ecotourism in nature. Less successfully, some candidates approached the question as two separate parts: negative impacts on the environment of other types of tourism and positive impacts of ecotourism with little to connect the two parts together. Some included comment on social or economic aspects without making these relevant to impact on the environment. A common theme was to include a location such as a national park and to presume that tourist activities were therefore ecotourism. Better responses were seen where candidates used a small scale or larger scale example of ecotourism. Some candidates were able to widen the assessment with some sound comment on the general nature of ecotourism through ideas such as: travel over long distances, especially by air, intrusion into wilderness areas, along with issues such as 'greenwashing' restricting the ability of ecotourism to be anything other than impactful towards the environment and to recognise the small scale of ecotourism and its niche aspect reserved for wealthy tourists with a conscience.

Economic transition

Question 7

- (a) Successful responses were able to select appropriate factors from a case study of a TNC and to include others from the overall heading of this part of the syllabus: the globalisation of economic activity. Such factors included: TNCs' behaviour, e.g. profit maximisation, cost minimisation, market penetration, global branding and general factors such as: the emergence of a global economy; transport changes, ICT changes, global production networks; governments' policies to attract FDI and factors influencing global trade.
- (b) Better responses successfully deconstructed the question and were able to provide coverage of both parts: deindustrialisation in some MEDCs and a period of industrial growth in other countries and to consider the links between these two aspects as part of the assessment. They also demonstrated an understanding of a broader definition of deindustrialisation as the shift in a country's economic sectors from an economy based on the secondary sector to one based on the tertiary sector and the quaternary sector. Factors behind the deindustrialisation in some MEDCs included the shift of profitability to other locations, based on factors domestically and abroad. The former included outdated production technology, inefficient systems, a lack of room for expansion, poor industrial relations, growing militancy of labour etc. The latter included those responsible for the emergence and growth of newly industrialised countries such as: government policies to attract manufacturing, such as developing EPZs; offering incentives such as infrastructure, tax breaks; and lax environmental restrictions.

Question 8

- (a) (i) Most candidates were more aware of outflows than inflows. They focused on outflows of people and raw materials and the overall balance of more outflows than inflows. Inflows which might have been considered include: in-migration of people for retirement or as key workers; circulation, e.g. tourism; goods and commodities to sustain life; and capital, for example if business is started or developed there or government investment in agriculture, tourism or transport infrastructure.
- (ii) Most candidates successfully identified the core and periphery from Fig. 3 and were able to give evidence to support these choices.
- (b) The key to success in this question was to have specific knowledge for a chosen country of attempts to overcome regional disparities in development and to have sufficient criteria to measure the success of such attempts. Some sound responses were seen, illustrating the difficulties of bridging the gap in a country in social as well as economic aspects of regional development. These included gender issues and the distribution of wealth, along with spatial differences between core and periphery regions and or between rural and urban areas. Some sound evaluations included issues such as: unforeseen problems, persistent obstacles and outcomes which differ between groups of people, such as a privileged elite and the main population.

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General comments

The majority of candidates were from centres in Africa and many of the examples and case studies used were from countries in Africa which were familiar to them. This was especially true for **Question 1(b)** and **Question 6**. Examiners noted that examples from around the world were also used, mostly China (**Question 3(b)**) and India (**Questions 1(b)** and **2(b)**) which were used effectively to answer these questions.

Many responses would have benefitted from greater length, especially for **parts (b)** where an essay (extended writing) is always required. Some responses to the shorter demands in **(a)** needed to be fuller in terms of the development of the example or explanation.

In the Insert, Fig. 1, a line graph, required interpretation in **Question 1(a)(i)**. Few candidates developed their answer to describe changes in the positive correlation over time. Fig. 2, a set of pie charts, needed to be used to answer a comparison for **Question 4(a)(i)**. Fig. 3 was general stimuli for candidates that did not require reading and interpretation for credit, but could be used to answer **6(a)**. Fig. 4 was a set of diagrams for use in **Question 8(a)(i)** and **(a)(ii)**.

Teachers preparing candidates for the revised 9696 syllabus from 2018 are reminded that candidates will have to answer a compulsory resource-based question in each of their two chosen Options.

Almost all candidates answered two questions as required. A very small number of rubric errors were seen where more than two questions were attempted.

Comments on specific questions

Production, location and change

Question 1

- (a) (i)** Most candidates gained an initial mark for describing the positive relationship between fertilizer use and yield. Most then went on to give data support to illustrate this; however, sometimes candidates gave approximate statistics leading to inaccuracy. Most candidates did not make any comment about the changing angle of the line of best fit, which illustrated diminishing returns. In other words, the rate of yield increase slowed as more fertilizer was added. Some data support to illustrate that more fertilizer was needed as time went by, would have made a very good answer.
- (ii)** To gain marks here, candidates needed to describe the impact in detail then illustrate it with either an example or location. Many candidates did well describing problems with the crops themselves, or environmental impacts, such as to the soil and water bodies (eutrophication). However, fewer candidates gave economic and social impacts which were also highly relevant. Marks were lost here by repetition. Although the command phrase is 'Briefly explain...' it should be noted that this does not mean to briefly state an impact. Explanation (and therefore development) is needed.

- (b) Most answered as required, in terms of one country, but often did not focus on food supply while describing change. Many gave a generic introduction then the main part of the extended writing was examples of agricultural farming techniques (GM seeds, fertilizers, irrigation, etc.). Some of the candidates then brought in other factors, which is what the question required. Some of the essays could have applied to many different contexts/locations around the world and lacked place specific evidence. Better answers adopted the approach of discussing mini case studies within a country, to illustrate different aspects of change. This allowed more assessment in relation to the many other drivers of change. Local knowledge allowed many to discuss this topic from the point of view of real situations.

Question 2

- (a) (i) The candidates who attempted this question needed to ensure that they defined functional linkages correctly. Many gave a definition which included that the companies have to be located nearby for functional linkages to occur, which is not always the case. Functional linkages can exist without the need of being located in the same industrial area, park or zone. Functional linkages can lead to agglomeration and clustering of industry, as companies try to gain the economies of scale through relocation. Better answers included the variety of forms, and gave examples from manufacturing and related service industry to develop and illustrate these types of linkage.
- (ii) Most candidates knew what agglomeration is and used factors such as external economies of scale and linkages, along with benefits from infrastructure provision and sharing as ways to explain the advantages of agglomeration. The use of a located example to aid the explanation often reinforced a response, but was not needed. The wording of this question could be interpreted in two ways and this was accounted for in the mark scheme. Most candidates discussed the benefits of agglomeration as required rather than impacts on the location, but there were some good responses which discussed problems to the environment resulting from the concentration of industry in one location.
- (b) Some less successful responses struggled to evaluate the attempts, instead explaining changes which happened and how the country responded without evaluation: these answers often described the nature of the changes without really considering how they were overcome. The best answers understood the situation very well in their chosen country and addressed both aspects of the question, issues and attempts to overcome them, in one country, recognised the differing commands to each aspect of the question. Issues varied, with some responses focusing on changing spatial patterns of production and demand, competition, internal migration, and then responses at the governmental level. Attempts varied and included reference to financial and political aspects at both national and regional scales. The better responses evaluated the effects of the attempts and considered how far the result was positive or negative.

Environmental management

Question 3

- (a) Many candidates could discuss many of the main factors from the syllabus. However, the energy mix was rarely stressed; instead, candidates tended to focus on the main energy source in a country or discussed, in general, the factors which led to this. Less successful responses gave one or two factors and explained their influence by contrasting one or two countries. Breadth of factors needed to be illustrated and this was best done through a variety of examples. A successful approach might have been to look at the balance between renewable and non-renewable sources in a country, then focus on how a move from non-renewable is changing the mix in LEDC compared to MEDC. Very few candidates had a set of statistics to hand on the energy mix in contrasting countries that would have allowed for in depth discussions, e.g. China compared to France, Norway and UK and so on.

- (b) This question was, on the whole, not fully developed. Most had some idea about strategy, but did not make enough of how a country arrived at its current energy mix for electricity. A simple set of statistics would have been invaluable in getting the discussion going and was missing from many answers. Most adopted the approach of describing the Three Gorges Dam in China in great detail, focusing on the pros and cons of the project rather than answering the question set. Many candidates limited themselves by describing one scheme only. Most were better on the strategy than the challenges, but some on the big scheme answers were able to make something of long term challenges. There were some quite good answers based on Zimbabwe, which is a good case study for this question and candidates could often answer this question with good local knowledge.

Question 4

- (a) (i) Many candidates were able to make sound comparisons between the pie charts, with data support and most candidates received good marks for this question. Weaker responses stated data without comparison, which was limiting. Better responses were seen, which described the main differences and similarities as a detailed comparison.
- (ii) Some candidates gave generic ways, which were not linked to a particular location, scheme or example, and were too vague to do well. Better responses described the ways, developing their description with detail of success or a named location where it is used. Some candidates incorrectly tried to link their answer to **part (i)**. Most were able to suggest three ways of reducing air pollution, but would have scored more highly if they had gone on to develop their answers with good place detail or further technical information on energy conservation, behaviour, approaches etc.
- (b) The concept of mismanagement gave problems with this question. Most could locate and describe a degraded environment but did not explain how mismanagement led to the problem or lack of management contributed. Most implied mismanagement in their answers but did not make the link clearly enough to get beyond Level 2. Answers would have benefitted from identifying appropriate examples that would have presented them with the opportunity to develop their answers. Many answers focused on urban areas and tended to spend too long discussing issues that were more social or economic rather than environmental. Some answers described how these areas were well managed and subsequently improved, missing the question entirely. It would benefit candidates to plan out their answers to **part (b)**, making sure that they are addressing the command words, and main focus of the question, before they begin.

Global interdependence

Question 5

- (a) Many of the candidates did better at explaining global inequalities than describing them, other than a generic MEDC to LEDC comparison. Better answers were specific about EU, NAFTA and SE Asian dominance of the majority of trade flows, with reference to other emerging markets and those left behind. Good answers needed several examples of trading relationships between countries to illustrate the drivers of inequality, and historical context up to the present day. It is important to note that when both description and explanation are asked for, candidates need to address both equally. The successful responses linked descriptions and explanation throughout.
- (b) This was a question with two parts. The first free trade, and the second fair trade. Better responses took the approach of describing the role, work and success of the World Trade Organization, and then doing the same for the Fair Trade Initiative, with evaluation throughout. Candidates knew quite a lot about WTO and its role in world trade and could give good examples. Many candidates were critical of the success of the WTO, including the Doha Rounds or Banana Wars, to illustrate their role in global trade negotiations, and questionable success. Some candidates could give good examples of Fair Trade, but some ignored it altogether, which limited these responses to Level 2. This question needed good case study material to score well, and those who did well at the Fair Trade part, explained in detail the role of Fair Trade and evaluated its success at meeting its own aims. There were some very good evaluations of the need for MEDC consumers to embrace Fair Trade for it to advance and grow, and the need for the WTO to show preference to LEDCs for global inequality to be reduced, which showed high conceptual understanding of the role of both.

Question 6

- (a) This question required two different types of tourism to be described and explained in terms of environmental impacts. There were some candidates who misread or misinterpreted the question. Some less successful responses used two examples which were so similar that the environmental impacts were the same, or described social and economic impacts instead of environmental. There was, on occasion, generic comment not linked specifically to tourist activity, for example littering, or air pollution. There was also misunderstanding of terms. 'Leisure' tourism was used to describe what is more commonly known as mass tourism. The word leisure is the pursuit of an activity for relaxation, but in the US, has become synonymous with luxury or mass tourism through package deals. Ecotourism was also misunderstood, with many candidates describing Safari trophy hunting as an example of ecotourism, which is quite the opposite in reality. There were some better responses, which used specific examples to illustrate how their type of tourism brought mostly negative impacts, but occasionally positive ones. Some answers on ecotourism did this well, where candidates could talk about real places where people were involved in conservation work or supporting wildlife projects in the tropics or game parks. There was the opportunity to use many examples within this question, which was not always taken fully, as most candidates only gave two examples, one for each type.
- (b) Some candidates were still focussed on the cartoon from **part (a)** and this limited the scope of the destinations they included. Other less successful answers gave no examples, and instead made generic statements about management of resorts, usually focussing on hotels. The question was not well understood by some. Better answers put the destinations into the context of the Butler model or Doxey's 5 Stages, but many produced very descriptive accounts of problems in one destination. Again, there is a need for very specific examples where candidates show how changing demands on resorts, political and economic pressures need to be anticipated and addressed if the destination is to prosper. Better responses did this, and included assessment of strategies used to manage destinations and maintain them within their carrying capacity.

Economic transition

Question 7

- (a) (i) Most had a good idea about the primary sector but could only explain its role to a limited extent. Better answers would have given examples and statistics and explained the role of the primary sector in the economic development of emerging economies and/or other countries.
- (ii) This question was not answered well, as candidates tended to give one reason, or two which were undeveloped. Candidates needed to argue that the primary sector is the starting point, but is dependent on external factors.
- (b) Some candidates did not get to grips with this question as they did not have enough knowledge of the statistical indicators used by planners and politicians in a global context. There were two parts to the question, challenges of measuring and effectiveness of these measures. Many answers were unbalanced in favour of just one part. The better answers began by explaining why it is hard to measure inequality, which could have been in terms of practicalities or the flaws of the measures themselves. These candidates then went on to critique the measurements, which usually included a comparison of the effectiveness of one (e.g. GDP) compared to multiple indicators (e.g. HDI).

Question 8

- (a) (i) There were some unsuccessful responses which used Fig. 4, and others which made inaccurate descriptions of the changes.
- (ii) Of the few responses seen, none made a full explanation. There were one or two explanations given, but lacking development through the use of key ideas such as core-periphery, cumulative causation, resource-frontier regions, etc.
- (b) This question required the focus to be on economic factors and there was the need for examples, which would more likely be from SE Asian countries. There were a few very well-argued responses.

GEOGRAPHY

Paper 9696/33
Advanced Human Options

General comments

The resources in the insert were of a variety of forms with two – for **Questions 1** and **8** – requiring data reading and the other two – for **Questions 4** and **6** – provided as stimulus materials for the candidates.

Teachers preparing candidates for the revised 9696 syllabus from 2018 are reminded that candidates will have to answer a compulsory resource-based question in each of their two chosen Options.

Candidates who have access to relevant examples usually produce stronger answers than those who do not. The need for examples is made clear in the syllabus and repeated on the front of the exam paper. This is particularly important when a question requests exemplification, as in **Questions 2(a)(ii)**, **4(a)** and **7(a)**, but examples are also vital when there is no explicit request, as in **Questions 1(a)**, **3(a)**, **6(a)** and **8(a)(ii)** and in **parts (b)**, where there was no specific statement within the question to use examples or to consider one country.

There has been a notable improvement in the ability of candidates to construct an essay or produce extended writing for **parts (b)**. There is some evidence that this approach is also used in the **parts (a)**, and this can be less productive in terms of using introductions and conclusions, where the command is more directed than that used for the assessment element of the **parts (b)**.

There was little evidence of candidates making rubric errors or using note form for **part (b)** responses.

Comments on specific questions

Production, location and change

Question 1

- (a) (i) Most candidates were able to state three changes in food production predicted to occur for 2030, giving support in the form of the year and the number of calories for that year and for 2030, or by working out the difference.
- (ii) Most candidates demonstrated basic awareness that intensification of production involves increased inputs, leading to a higher amount of production. Better responses developed this by explaining that the inputs are higher in terms of aspects such as: increased units, improved quality, improved technology, education of farmers, etc. leading to higher outputs per unit area. These better responses were able to explain how the input led to higher production such as pesticides reducing the damage to crops and therefore higher production, or, in the case of fertiliser use, increased yield due to increased growth or even faster growth allowing more crops to be planted without resting the soil. Examples were mostly seen from the Green Revolution in India, but equally valid examples were seen at a small scale, even that of the individual farm.

- (b) The question required knowledge of agricultural change in one country – the case study from 1.2 – so one of the factors in achieving success was specific knowledge from one country. Some responses used the Green Revolution with only the name of a country and without any other specific knowledge. Assessing the success was a major factor. It was possible to assess success in any way, with better responses having explicit success criteria, such as food production, food security, productivity or the percentage owning land if land reform is involved, whilst another approach was to assess success from the points of view of different groups of people (stakeholders), such as small farmers, major landholders, the government, environmentalists, or in different locations within the country. Identification of the challenges which remain was mostly attempted as an additional point at the end of the response, but a better way was to use these challenges as part of the assessment of success. For instance, many candidates have their case study organised into sections such as: the change, the pros, the cons and the assessment; thus, with planning, they could recognise that this question would allow them to integrate the cons into the assessment as challenges which remain.

Question 2

There were too few answers to make comment appropriate.

Environmental management

Question 3

- (a) The key to success and relevance was to understand that the question was about demand and not supply. Most candidates understood the requirement to consider variations with levels of development and did this spatially by offering different examples of countries e.g. LEDC, NIC, MEDC. Some candidates offered a temporal approach using one country, but this approach could be equally successful. Weaker responses used converse comments for MEDC and LEDC such: as more personal electrical items and fewer electrical items, respectively. Many excellent responses were seen considering variations in demand from different sectors of an economy at one time compared to another, and displaying an understanding of the role of the domestic sector at different times or in different places.
- (b) Variations in responses were seen based on a range of factors: specific knowledge of sources used to produce electricity in the country selected; choice of countries with a high or even very high contribution of renewable sources; how the 'contribution' was handled and the assessment offered. Some excellent responses were seen for countries with either a high or low contribution in terms of energy mix used to produce electricity, with the additional characteristic that there was sound knowledge of the overall mix and relative contributions. These excellent responses were also able to consider 'contribution' more broadly by looking at other aspects such as: the role of renewables, changes over time, depletion, emissions and energy security. Less successful responses were often characterised by limited knowledge of energy sources rather than resources used to produce electricity and a focus on one type of energy. Some candidates confused gas with oil.

Question 4

- (a) Candidates could make use of the resource in Fig. 2 as a stimulus or develop a response without using Fig. 2. Either way success was dependent on an answer showing awareness of various aspects of the question: using examples, focusing upon solid waste, considering effective management, the reduction of pollution - any type - and explaining rather than just describing. Of these, effective management was the least understood and so answers displaying knowledge of some aspects of effective management such as the scale, financing, good governance and training of staff did well. Most candidates displayed knowledge about the role of individuals in waste management strategies such as recycling, but were less likely to demonstrate understanding that this is part of effective management. This is part of the skill of deconstructing a question.

- (b) Candidate responses could include a variety of environments at risk at any scale. The key to a successful response was a focus on 'measures' and their relative success (or failure). Better responses used specific success criteria and offered evidence in terms of data or examples to support the assessment. Success was considered in terms of environmental degradation, improvement in environmental quality and the reduction in, or removal of, risk. The degree of success was also considered as varying spatially, temporally or in relation to different groups of people. Weaker responses focused more on describing environments at risk, repeated the same ideas with different locations and/or were lacking in knowledge of specific measures taken to protect the environment(s) at risk. This was particularly true with very broad environments such as China's atmosphere, where specific measures are insufficiently robust to allow assessment of success to take place.

Global interdependence

Question 5

- (a) Candidates used a variety of types of aid with the most common being: relief aid, development aid, tied aid and bilateral aid, where issues such as dependency, governance, corruption, disruption to local economy and ties in tied aid were frequently well developed. Support from examples was generally sound.
- (b) Knowledge of trade was mostly focused on the negative aspects for exporting countries, focusing upon issues such as: dependency on primary products and fluctuating market prices, competition and unforeseen events such as climatic hazards. Economic development was also quite narrow in approach, focusing upon the economic aspect. Some candidates provided a more balanced approach considering the benefits of trade for both exporting and importing countries or developed a response temporally or spatially to include comment on the benefits of trade to NICs. Argument varied, with most agreeing with the statement and illustrating this from the perspective of LEDCs and/or the difficulties of countries trading with members of trade blocs, though better responses were able to demonstrate some disagreement as well as agreement. Others had a wider view of economic development, considering benefits for the political, and social well-being of the people, as well as economic benefits to a country of trade.

Question 6

- (a) A range of issues were offered with most candidates able to not only describe but also to explain what makes an issue. Those commonly seen were economic in nature such as: reliance and dependency, seasonality, falling tourist numbers in response to factors e.g. fashion and unforeseen events, or socio-cultural for example e.g. westernisation, diet, Doxey.
- (b) Success for this question was reliant upon candidates' ability to deconstruct the question, to respond to the different parts and to remain relevant. Some candidates successfully remained focused upon how ecotourism can or cannot 'overcome the negative environmental impacts associated with other types of tourism'. They were also able to provide exemplar support to assess the extent to which ecotourism can overcome these negative impacts or prevent them from happening in the first place. These more successful responses chose suitable examples of places from case studies or selected details from examples which were clearly ecotourism in nature. Less successfully, some candidates approached the question as two separate parts: negative impacts on the environment of other types of tourism and positive impacts of ecotourism with little to connect the two parts together. Some included comment on social or economic aspects without making these relevant to impact on the environment. A common theme was to include a location such as a national park and to presume that tourist activities were therefore ecotourism. Better responses were seen where candidates used a small scale or larger scale example of ecotourism. Some candidates were able to widen the assessment with some sound comment on the general nature of ecotourism through ideas such as: travel over long distances, especially by air, intrusion into wilderness areas, along with issues such as 'greenwashing' restricting the ability of ecotourism to be anything other than impactful towards the environment and to recognise the small scale of ecotourism and its niche aspect reserved for wealthy tourists with a conscience.

Economic transition

Question 7

- (a) Successful responses were able to select appropriate factors from a case study of a TNC and to include others from the overall heading of this part of the syllabus: the globalisation of economic activity. Such factors included: TNCs' behaviour, e.g. profit maximisation, cost minimisation, market penetration, global branding and general factors such as: the emergence of a global economy; transport changes, ICT changes, global production networks; governments' policies to attract FDI and factors influencing global trade.
- (b) Better responses successfully deconstructed the question and were able to provide coverage of both parts: deindustrialisation in some MEDCs and a period of industrial growth in other countries and to consider the links between these two aspects as part of the assessment. They also demonstrated an understanding of a broader definition of deindustrialisation as the shift in a country's economic sectors from an economy based on the secondary sector to one based on the tertiary sector and the quaternary sector. Factors behind the deindustrialisation in some MEDCs included the shift of profitability to other locations, based on factors domestically and abroad. The former included outdated production technology, inefficient systems, a lack of room for expansion, poor industrial relations, growing militancy of labour etc. The latter included those responsible for the emergence and growth of newly industrialised countries such as: government policies to attract manufacturing, such as developing EPZs; offering incentives such as infrastructure, tax breaks; and lax environmental restrictions.

Question 8

- (a) (i) Most candidates were more aware of outflows than inflows. They focused on outflows of people and raw materials and the overall balance of more outflows than inflows. Inflows which might have been considered include: in-migration of people for retirement or as key workers; circulation, e.g. tourism; goods and commodities to sustain life; and capital, for example if business is started or developed there or government investment in agriculture, tourism or transport infrastructure.
- (ii) Most candidates successfully identified the core and periphery from Fig. 3 and were able to give evidence to support these choices.
- (b) The key to success in this question was to have specific knowledge for a chosen country of attempts to overcome regional disparities in development and to have sufficient criteria to measure the success of such attempts. Some sound responses were seen, illustrating the difficulties of bridging the gap in a country in social as well as economic aspects of regional development. These included gender issues and the distribution of wealth, along with spatial differences between core and periphery regions and or between rural and urban areas. Some sound evaluations included issues such as: unforeseen problems, persistent obstacles and outcomes which differ between groups of people, such as a privileged elite and the main population.