

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. Although there were more marks at the lower end, some candidates achieved excellent marks.

The dichotomy between responses to the Physical Geography and Human Geography questions continues to be of concern. The imprecision in the use and understanding of Physical Geography terms and concepts noted in previous reports still continues. This was especially true of answers to **Questions 8 and 9**. It was still uncommon for all three Physical Geography questions in **Section A** to be answered. In this context, it is worth reiterating that in the new syllabus there will be no choice available. The data response parts of the Human Geography questions were handled well.

Comments on Specific Questions

Section A

Question 1

- (a) Candidates seem to experience problems when drawing features shown in a photograph. There is still a tendency to identify features that are not present but would be expected in a theoretical diagram. It is important to stress that the features must be identified from the photograph. Notwithstanding this problem, most candidates received reasonable marks.
- (b) As often happens when the formation of meanders is considered, the detailed understanding of the factors and processes involved and their influence on the formation of meanders is usually lacking. Few candidates were able to explain why braiding occurs in rivers. Most realised that pool and riffle sequences and helicoidal flow were part of the explanation but were unable to harness this information in order to explain the formation of meanders.

Question 2

- (a) Most candidates were able to identify four differences, although the direction of the differences (greater or lower) was sometimes omitted.
- (b) There was a very satisfactory response to this part of the question. However, some candidates wasted a little time by explaining more than two differences.

Question 3

- (a) This part caused few difficulties and many candidates were able to identify correctly both the features and the processes.
- (b) Diagrams produced in response to this question often lacked clarity and accuracy. The movement of the plates and subduction were shown competently, but the representation of fold mountains and their mode of formation were unrealistic. Some candidates thought that fold mountains were created by volcanic activity. Very few candidates realised that marine sediments get crushed as the two plates converge and it is this crushing of sediments and consequent uplift that mostly creates fold mountains.

Question 4

- (a) This was answered mostly correctly.
- (b) This part of the question also received a good response; however, some candidates were unable to gain the extra mark because they did not use evidence from the figure.
- (c) Most candidates were able to offer realistic reasons for the predicted changes, although there was a tendency to describe rather than explain. This was a purely generic question, thus there was no expectation that there would be a detailed reference to Mexico. Most candidates did realise that it was a generic question and responded accordingly. The changes would apply to any developing country that would be progressing through the stages exemplified in the demographic transition model.

Question 5

- (a) There were very few errors in identifying the two dates required.
- (b) Some candidates experienced difficulty in interpreting the word trend and simply described, in a very detailed manner, every small deviation in the graphs. Such responses were in the minority; most answers were concise and relevant.
- (c) In general, there was an excellent response with extremely detailed analysis. Most candidates recognised that the question was not restricted to MEDCs. It is worth stressing that the final part of these questions is usually generic and does not normally relate to any specific elements in the earlier parts.

Question 6

- (a) Most candidates were able to gain good marks. Some candidates, however, were unable to achieve top marks as they ignored one of the three elements (number, size, location) asked for in the question.
- (b) This question was related to the first part of the question. A variety of factors could have been offered as an explanation for the changes. The role of migration, both internal and international, was commonly offered as was the stage in the process of economic development.

Section B

Question 7

- (a) (i) There were few problems with this question except for the usual confusion between throughfall and throughflow, and between percolation and infiltration.
- (ii) Most candidates were able to discuss the influence of vegetation on the shape of the storm hydrograph. Some candidates provided far too much information for the three marks.
- (b) Diagrams varied from the thematic systems diagram to the more schematic diagram of the slope hydrological system. The detail was generally good with an effective explanation.
- (c) The response to this question was good, especially in terms of the influence of human activity on flooding. The assessment of the extent to which floods are the result of human activity was less reasoned. Where this was lacking, it was generally not possible to obtain a Level 3 mark.

Question 8

- (a) (i) Most candidates were able to define the two terms.
- (ii) This question posed few problems, although the surface for dew to form on was often omitted.
- (b) This question posed considerable problems for most candidates. Diagrams were often not appropriate and inaccurate, and it was clear that the nature of conditional instability was not really understood. Many candidates drew a mountain with rising air but the mechanisms involved in creating instability were not well understood.
- (c) Most candidates were able to provide a satisfactory analysis of this question. It is encouraging to note the variety of greenhouse gases that were discussed and not just carbon dioxide. However, the destruction of the ozone layer was too frequently discussed. The effect on climate change was usually couched in vague terms about global warming. There was very little discussion of the possible effects on increased storminess as a result of increased sea surface temperatures and the possibility of drought in other areas.

Question 9

- (a) (i) Most candidates were able to define exfoliation and pressure release.
- (ii) This was answered mostly very competently, but there was a tendency to omit the final effect of the process on the rock or minerals.
- (b) This was a question where most candidates were able to obtain reasonable marks. It was encouraging to find that many candidates were able to describe the two processes with the correct chemical changes. Carbonation has always been explained in good detail but hydrolysis was often less well informed. However, there are encouraging signs that hydrolysis is now well understood.
- (c) Mass movement questions invariably cause problems for some candidates. The response to this question was no exception. The question required more than one type of mass movement. Rotational landslides and mudflows were often described but the extent to which these movements affected the shape of slopes was assessed in very simplistic terms.

Section C

Question 10

- (a) (i) Most candidates were able to give an effective definition.
- (ii) Most candidates were able to provide two good issues associated with ageing populations.
- (b) Apart from an occasional misinterpretation of life expectancy, there was a good response with answers covering most of the relevant points.
- (c) There was a very encouraging response to this question. The answer required a rational description of the model and then an assessment as to its usefulness. The level of discussion was very mature with many arguing that, although it has its limitations, it can be applicable to the way that some LEDCs develop. Most candidates were able to point out where the model has limitations.

Question 11

- (a) This proved to be a very straightforward question and most candidates obtained good marks. There was some tendency to produce unbalanced answers with a greater emphasis on family ties rather than age.

- (b) The general nature of stepped migration was well understood apart from the occasional confusion with chain migration. Reasons for the occurrence of stepped migration rarely went beyond the need to earn money before embarking on the next stage. Movement up the settlement hierarchy was not stressed in sufficient detail.
- (c) There was some confusion over the interpretation of the statement. It was expected that most answers would stress that the perception of the pull factors rather than reality would form the basis of the argument. However, the question did not state that it was the perception of the receiving area that was being referred to, so many candidates argued that the reality of the push factors was important rather than the perception of them. As the migrants were experiencing these disadvantages of the source areas, then this was reality rather than perception. This was a valid interpretation of the statement and was awarded good marks.

Question 12

There were too few answers to make comment appropriate.

GEOGRAPHY

Paper 9696/12
Core Geography

General Comments

Although there were more marks at the lower end, some candidates achieved excellent marks.

The dichotomy between responses to the Physical Geography and Human Geography questions continues to be of concern. The imprecision in the use and understanding of Physical Geography terms and concepts noted in previous reports still continues. This was especially true of answers to **Questions 1, 2 and 9**. It was still uncommon for all three Physical Geography questions in **Section A** to be answered. In this context, it is worth reiterating that in the new syllabus there will be no choice available. The data response parts of the Human Geography questions were handled well.

Comments on Specific Questions

Section A

Question 1

- (a) Candidates seem to experience problems when drawing diagrams of features shown in a photograph. There is still a tendency to identify features that are not present but would be expected in a theoretical diagram. It is important to stress that the features must be identified from the photograph. However, notwithstanding this problem, most candidates were able to identify and draw the various channels, with vegetated islands and un-vegetated sand bars.
- (b) Candidates often experience problems when trying to explain the formation of braided channels. Most recognise that a drop in velocity will lead to deposition but the need for a large sediment load is often forgotten. Also, there is a need for a high and fluctuating discharge to transport and then deposit the sediment when discharge drops. This is crucial to the formation of braided channel features. Rather surprisingly, some candidates attempted an explanation based on pool and riffles and helicoidal flow.

Question 2

- (a) Most candidates were able to identify the pressure at A but were less secure in the identification of B, C and D. A sizeable number of candidates described the direction of winds as westerlies, i.e. the direction to which the winds were blowing.
- (b) There were two parts to this question with a satisfactory response to the first part based on an understanding of the tri-cellular model. Unfortunately, how this leads to global patterns of temperature was less well examined.

Question 3

- (a) This part caused few difficulties and many candidates were able to identify correctly the dominant types of weathering.
- (b) Most candidates identified the climatic characteristics where strong physical weathering occurred on the diagram, but explanation was limited to very brief statements of freeze-thaw weathering with little detail.

- (c) Most correctly identified arid environments as the appropriate climate zone, but then lacked detail when explaining why little weathering occurred in these areas.

Question 4

- (a) Answered mostly correctly in both parts.
- (b) This also received a good response; however, some candidates were unable to gain the extra mark because they did not develop the two reasons mentioned.
- (c) There were excellent answers to this part of the question and many candidates received full marks.

Question 5

- (a) This was almost universally answered correctly.
- (b) There was a very good response with many high marks awarded. Sometimes the fourth mark was not awarded because of a lack of development of the points raised.
- (c) A very good response with excellent detail.

Question 6

- (a) Many candidates were confused between the representation of urban population and percentage urban population. China was identified for part (i) by less than 50% of candidates. The response to part (ii) was more accurate.
- (b) Answers were often characterised by a lack of detail. Simply referring to Africa and Asia received few marks. Some candidates also misread the less than 25% category.
- (c) Candidates struggled with this question, with most examples simply referring to the level of development of respective countries (LEDCs, MEDCs) with little real explanation. It was not clear what it was about level of development that led to differences in the percentage urban population. However, the fact that many economies were agrarian and relied on a sizeable rural population was a valid point.

Section B

Question 7

- (a) (i) The definition of both water table and recharge caused problems. Few candidates were able to define them in precise enough terms to receive full marks, thus emphasising the point made in the general comments about lack of precision in defining physical geography concepts.
- (ii) Most candidates had little understanding of what shape meant with respect to drainage basins. There were many answers which wrote about steep and gentle slopes rather than shape. Also, there was occasional confusion over the influence of shape.
- (b) There was a very satisfactory response with a great variety of human effects discussed despite a tendency to describe rather than explain. For example, many candidates wrote about deforestation affecting infiltration without saying how and why.
- (c) The response to this question was good, especially those using excellent specific examples. The assessment of the extent to which floods can be prevented and their effects reduced also received a good response.

Question 8

- (a) (i) Most candidates were able to define condensation, but the precise definition of relative humidity caused problems.
- (ii) This question posed few problems, although detail was often lacking.
- (b) This question posed problems for some candidates. They were able to draw simple diagrams showing the main components of the daytime energy budget but were then unable to explain these components with sufficient detail and accuracy. There was sometimes confusion between latent heat transfer and sensible heat transfer, and between reflected and radiated energy.
- (c) The response was generally good especially with respect to temperature and precipitation, although albedo was sometimes interpreted incorrectly. An understanding of humidity was less secure. Some candidates did not address all three elements.

Question 9

- (a) (i) Very few candidates were able to define the terms in a satisfactory manner.
- (ii) There was a good response to this question. Most were able to make sound comments about the effect of rock falls on the slope face and the debris (scree, talus) that accumulates at the slope foot.
- (b) Answers lacked sufficient detail concerning how human activity affects mass movement, although many answers were balanced with some appreciation of how human activity can reduce mass movement. With respect to initiating mass movement, it was generally not sufficient to state that the loading of buildings on a slope and deforestation weaken the slope without going into the precise mechanisms.
- (c) Answers varied from the excellent, with detailed knowledge and understanding of the different plate boundaries, to those answers with little recognition of either tectonic processes or the landforms created. There was sometimes confusion between constructive and destructive boundaries.

Section C

Question 10

- (a) Most candidates were able to give an effective description and explanation of the death and birth rates associated with Stage 2 of the model.
- (b) This also received a satisfactory response with the China one child policy very popular. However, a wide variety of government actions was also discussed.
- (c) There was a very encouraging response to this question. The answer required a rational description of the model and then an assessment as to its usefulness in explaining future population trends. The level of discussion was very mature with many emphasising its limitations.

Question 11

- (a) (i) Many candidates omitted the need for the stay to be permanent or over one year.
- (ii) This posed few problems, except where candidates did not provide relevant examples.
- (b) Push and pull factors were well described, but there was often little discussion about the way these factors interact in determining whether or not a person migrates.
- (c) The main problem with some of the responses to this question was that it was not clear whether MEDCs or LEDCs were being discussed and whether the migration was in or out of rural settlements. Some candidates described the effects on both MEDCs and LEDCs. In spite of this, there were many excellent responses using very specific and detailed examples.

Question 12

As all three elements of the question relate to a specific example of a shanty town (squatter settlement), these comments are not differentiated according to the question component **(a)**, **(b)** and **(c)**. Many answers were overly generic with little specific reference to a particular shanty town. This implied that some candidates had little knowledge of a specific example but understood the general characteristics of shanty towns. However, there were excellent answers which exhibited detailed knowledge of all three elements in the question. Thus, there was a dichotomy of marks awarded between high and low.

GEOGRAPHY

Paper 9696/13
Core Geography

General Comments

There were once again some excellent responses from candidates who were well prepared for the examination and displayed a clear understanding of the concepts involved. Many answers were detailed and thoughtful.

The general clarity of expression, and hand writing, continue to improve, and the use of English is generally impressive. However, diagrams often lack effective annotation, and their general standard of accuracy is an area where further improvement could be made. For example, in **Question 7(b)**, diagrams often did not enhance explanation. A series of sequential diagrams of waterfalls and deltas seems a good idea, but one well labelled diagram of each might have been more effective.

Command words such as 'outline', 'describe', and 'explain' are now more carefully addressed than they were, but at times explanations are still offered where none is required. In **Question 1(a)**, explanations were too frequently offered. Indeed, a number of candidates re-labelled part **(a)** as **(b)** once they had realised their error. Use of examples could be more effective. Where questions specifically demand case study material, answers can be of a very high quality, but exemplar material can do much to enhance answers, even if not specifically required.

Using the source material provided is a skill that many candidates have now developed. Identifying 'trends' in **Question 5** was effective in recognising relevant patterns rather than just listing a series of changes. However, in **Question 2** many candidates were content to identify temperature change from the centre of the urban area, but without discussing variations in the patterns of those changes, which were indicated on the source material.

It is obviously important in **Section B** and **Section C** for candidates to assess the validity of statements made in the levels questions. Although progress has been made in this respect in recent examination sessions, assessments still tend to be rather cursory and below what is expected for a confident Level 3 mark.

However, the overall impression is very positive and progress has been sustained. Candidates apply themselves diligently and with impressive understanding of the topics.

Comments on Specific Questions

Section A

Question 1

- (a)** Many responses did not focus on 'differences' as stated in the question. A general description did not clearly identify differences, and unlinked separate descriptions of forested and urban areas was not a valid approach. Those who did answer correctly picked up marks very easily. A simple list of four differences was sufficient for full marks.
- (b)** Candidates displayed good understanding, but too many realised they had already answered this in part **(a)**. Nevertheless, explanations were accurate and suggested sound understanding of this topic. Some were distracted by references to flooding and lag times.

Question 2

- (a) This was reasonably well answered, and it was clear that most candidates understood the question. However, few were able to say more than temperature increases towards the centre and refer to supporting data. More reference to the pattern and detail from the diagram was needed for all of the marks, which should have been apparent from the mark allocation.
- (b) There were some very convincing answers. Albedo was discussed by many, and thermal capacity by most. Human sources of heat were understood, and wind calmness and pollution were also discussed. Rather too many felt it appropriate to mention CO₂ emissions and the greenhouse effect – not something that could account for temperature differences at this scale. More explanatory comparison with rural areas and the variations within the urban area were needed for full marks.

Question 3

- (a) This part was not particularly well answered. Candidates must expect to offer more than just ‘slide’ or ‘flow’.
- (b) This part was also not particularly well answered. Answers tended to focus on what humans could do, rather than explaining how these activities affected mass movements. Too many quoted slope wash and soil erosion.

Question 4

- (a) Most could identify the largest age group.
- (b) There were some very competent answers. Most candidates were confident in using the data. The better answers approached the question systematically, looking at the bottom, middle, and top, and comparing as they went. Explanation of the data was not required.
- (c) This was not so well answered. There were many generic answers on high birth rates and a failure to identify periods of high birth rates related to baby booms, population policies, migration, etc.

Question 5

- (a) Answers were mostly correct.
- (b) The term ‘trends’ was correctly interpreted. Some answers gave too much detail, obscuring the overall patterns, but these were in a minority. Most answered effectively, and supported with appropriate data.
- (c) Answers were very encouraging. A variety of impacts were identified, although with perhaps a little too much emphasis on ‘brawn drain’.

Question 6

- (a) Many answered this correctly.
- (b) Most candidates were able to score at least two marks.
- (c) Candidates struggled with this question. Labour to work on farms is not appropriate for a question directed at youthful population in cities, and neither is simply a high birth rate without some accompanying discussion of death rate, etc.

Section B

Question 7

- (a) The terms 'abrasion' and 'saltation' were clearly understood by many and good definitions were given. In (a)(ii) most candidates were able to describe 'turbulent flow' very effectively and in some detail.
- (b) As suggested earlier, the diagrams used were not always very effective. There were often too many diagrams and these were poorly annotated. Effective answers would need to give more detail.
- (c) Meanders remain a difficult concept and there is no precise consensus. However, there is no doubt that answers displayed an improved understanding of this topic. Helicoidal flow is now often discussed, but not always related clearly to pools and riffles. Better candidates used diagrams to support their answers.

Question 8

- (a) Reasonable attempts were made at definitions, with orographic uplift being the more convincing. In (a)(ii) most understood that winds blow from high to low pressure, but did not elaborate.
- (b) Fog seemed to be understood, but not temperature inversions. The link to local energy budgets was largely ignored.
- (c) Global warming remains a topic which appears frequently, but candidates are still not secure in their knowledge and understanding of it. Very few discussed other climatic impacts effectively and some incorrectly discussed melting ice caps.

Question 9

- (a) Candidates scored well in both parts of (a). Island arcs and subduction are now much better understood than in the recent past.
- (b) Fortunately, only a few candidates answered both granite and limestone, and the general standard has certainly improved. Some answered very well, and showed good understanding of the need to mention both chemical and physical weathering, together with how structure has influence. Candidates know the chemical processes well and understand them.
- (c) There were some very good answers. Plate tectonic processes and landforms are clearly understood. More able candidates used relevant examples and illustrated their answers effectively. There were often valid assessments and many candidates scored well.

Section C

Question 10

China and Singapore were the most used case studies for this question.

- (a) Responses were often very generic and rather superficial. Many candidates included 'government attempts' in this section in an attempt to find relevant detail.
- (b) This was answered well. Candidates know the China/Singapore case studies, and used them effectively.
- (c) Once again, this was well answered. Many candidates discussed both the successes and failures of the policies, which enabled valid assessments to be made.

Question 11

- (a) Candidates scored well on both parts of (a).

- (b) The understanding of 'intra-urban' was often poor, and many answers drifted into generic comments that could equally apply to migration generally. Exemplar material was limited, and valid causes were often confined to job change and pollution. The impacts of such movements were equally unconvincing.
- (c) There were many good attempts at part (c). Candidates displayed a thorough knowledge of the impacts of rural-urban migration; better answers distinguished between LEDCs and MEDCs, and used examples to back up their statements. Answers were detailed but rather descriptive, and lacked an overall assessment. Weaker answers were confined to LEDCs and gave a simple list of problems such as loss of labour, age/sex imbalance, etc.

Question 12

- (a) There was little understanding of 'spatial competition'.
- (b) This was quite well answered, and the most impressive answers used case study material of Auckland.
- (c) The most effective answers contained detailed exemplar material.

GEOGRAPHY

<p>Paper 9696/21 Advanced Physical Options</p>
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General Comments

The number of candidates who took this component is sufficiently small that generalisation is difficult. The response was very variable, ranging from the very good to the very poor. Understanding of basic physical processes was limited.

Comments on Specific Questions

Tropical environments

Question 1

There were too few answers to make comment appropriate.

Question 2

There were too few answers to make comment appropriate.

Coastal environments

Question 3

There were too few answers to make comment appropriate.

Question 4

- (a) The analysis of fore dunes was the best of the three landforms. The offshore bars caused the most problems.
- (b) Questions concerning corals are always popular and usually answered in a competent manner. Responses to this question were no exception. The conditions for coral growth are well understood and thus the threats to those conditions are also answered well.

Hazardous environments

Question 5

- (a) Mass movement questions often seem to cause a few problems for some candidates. Candidates need to have a thorough understanding of the causes of mass movement. Simple statements to the effect that mass movement occurs when shear stress is greater than shear strength do not fully explain why mass movement occurs.
- (b) Most candidates were able to describe and explain some of the hazardous impacts of tornadoes, although the intense rainfall and also hail storms associated with them were often omitted. Many good answers included the effect of pressure differences in affecting buildings. Some candidates were clearly confused with hurricanes and wrote about storm surges. The assessment of the extent to which hazardous effects of tornadoes could be managed was generally done well.

Question 6

- (a) There was a good response to this part of the question. Candidates usually chose to describe and explain the differences between an effusive (Hawaiian) eruption and an explosive (Plinian or Vesuvian) eruption. Only occasionally were the respective characteristics confused.
- (b) There was also a good response to this question, although the analysis of the hazards tended to be more descriptive than explanatory. The prediction of earthquakes occasionally lacked detail of the techniques involved. The assessment of the extent to which earthquakes can be predicted was sometimes limited. The techniques were described without an assessment of their effectiveness.

Arid and semi-arid environments

Question 7

- (a) Some candidates struggled to find three examples of animals that are adapted to the climate of hot arid environments. Camels were described and explained well. The adaptations of lizards were also discussed.
- (b) Responses to this question were mixed. Many answers made only a passing reference to the process of desertification. Even those answers that did attempt an analysis provided little detail apart from brief mention of overgrazing, overcultivation, etc. Candidates were clear about the role of human factors but were less clear about natural factors leading to desertification apart from brief mention of periods of drought. Better candidates pointed out that even periods of drought might have a human influence with the possible effect of global warming.

Question 8

There were too few answers to make comment appropriate.

GEOGRAPHY

Paper 9696/22
Advanced Physical Options

General Comments

Coastal and Hazardous environments were the most popular sections, singly or in conjunction. The response of candidates to some of the questions was very good. Most of the questions had several components and in order to achieve marks in the higher levels candidates need to ensure that all parts of the question are answered. Diagrams and sketches were often of a poor quality.

Many of the answers would have benefited from a few brief sentences outlining the issues that were being discussed, especially with respect to the part (b) elements in the questions. This was generally lacking, thus making the answers unstructured and the logic of the discussion difficult to follow. To give one example, the first part of **Question 7(b)** concerned the process of desertification to be followed by a discussion of schemes to manage arid or semi-arid areas sustainably. Many candidates answered the second part without discussing the process of desertification. This also tended to occur in answers to **Question 6(b)**. Some of the answers contained little detail and seemed to pay no attention to the number of marks available.

Comments on Specific Questions

Tropical environments

Question 1

- (a) This question was in two parts. The first asked for a comparison of the two climate graphs. Many candidates still have problems with the 'compare' command. Many simply described the two climate graphs with little explicit comparison. Explaining the seasonal pattern of rainfall presented few problems; most candidates recognised the significance of the difference in latitudes of the two stations and were able to explain the patterns with respect to the movement of the Intertropical Convergence Zone.
- (b) The two key words in this question were 'assess' and 'different'. 'Assess' implied that factors other than weathering processes needed to be discussed and 'different' implied that several landforms needed discussing. In general, candidates' knowledge of weathering processes was quite basic and the detail provided in describing and explaining the landforms was very basic. A discussion of granite landforms was more popular than discussing limestone landforms. Even so, the variety of granite landforms examined was small. Very rarely were the characteristics of granite understood in sufficient detail to assess the importance of the weathering processes. However, there were good answers which realised that other factors could be quite significant such as climate change and the change in erosional process to exhumate some of the granite landforms. Knowledge of limestone landforms was limited.

Question 2

- (a) Very few candidates knew what a soil catena was. As a result, there were few answers that achieved more than a few marks. Some marks were awarded for knowledge of the nature of soil profiles, even if there was no understanding that the question required discussion of the downslope variation.
- (b) This was a straightforward question and answers demonstrated good knowledge and understanding. There was the common confusion over the meaning of structure which is not quite the same as general characteristics, but this slight confusion did not detract from some good answers.

Coastal environments

Question 3

- (a) Answers to this question were very encouraging. Many candidates were able to describe how waves were generated, sometimes in great detail. It is also encouraging that the majority of candidates were able to describe the breaking waves in terms of surging, spilling and plunging, thus moving away from the somewhat confusing terms constructive and destructive. Also, most candidates realised that surging waves required a gentle beach and plunging waves required a steeper beach profile to act efficiently. This automatically leads to the conclusion that surging waves build up the beach and plunging waves decrease the angle of the beach.
- (b) There was a mixed response to this question. Most candidates were able to discuss marine process, but knowledge and understanding of the nature and role of sub-aerial processes was often limited. Thus, discussion of their interaction was minimal. The question also implied that factors other than the relevant processes needed discussing. This was often lacking, although the better answers did discuss the role of rock type and structure.

Question 4

- (a) Questions on corals are always popular and the conditions needed for coral growth are well known. However, this was a slightly different coral question and was not answered as well as coral questions usually are. Few candidates had any understanding of sea level change apart from the relatively minor adjustments which result from current global warming and the melting of ice caps. Knowledge of sea level changes related to glacial and interglacial conditions was displayed in very few answers. The difference between eustatic and isostatic sea level changes was rarely discussed. The general theories of atoll formation were better understood except for confusion about which theorist (Darwin, Dana, Daly, Murray) was responsible for which theory.
- (b) The syllabus requires the study of a stretch or stretches of coastline. Many answers were essentially generic and unrelated to a specific coastline. If a coastline was stated, it was often 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 sometimes erroneous. Also, there was often little attempt to assess why that coastline needed protection. Thus, as noted previously, the first part of the question was not adequately addressed. There were also some excellent answers to this question with detailed description and excellent assessment. However, there were answers where inappropriate stretches of coastline were chosen, such as the entire east coast of North America, or coasts where the range of problems was limited. There were also some generic answers which were not related to any specific stretch of coastline.

Hazardous environments

Question 5

- (a) This question received a generally good response. The development of tropical storms is well known and most candidates were able to explain the development of storms in the locations shown on the map. Assessing the paths that the storms took following their development was sometimes omitted or could have been addressed in a more detailed way.
- (b) Most candidates were able to describe and explain some of the hazardous impacts of tornadoes, although the intense rainfall and also hail storms associated with them were often omitted. Many good answers included the effect of pressure differences in affecting buildings. Some candidates were clearly confused with hurricanes and wrote about storm surges. The assessment of the extent to which hazardous effects of tornadoes could be managed was generally done well.

Question 6

- (a) Questions on mass movement are often answered in a very general and simplistic way. The response to this question was no exception. The important word in the question was 'contribute'. The question was not about how human activities cause hazardous mass movement. The causes of mass movement relate to factors and processes that either decrease the strength of slope materials or increase stress or, most likely, both. This should have been the main thrust of the answer. Thus, arguing that building on slopes increases the weight is not a sufficient explanation unless the way this increase in weight affects shear strength and shear stress is examined. Loading a slope on its own will not cause mass movement. In a similar vein, arguing that deforestation removes roots and leads to instability is insufficient unless there is a discussion as to how roots help to stabilise slopes. Also, many candidates confused mass movement with overland flow and slope wash. Many candidates wrote about soil creep which is not a hazardous mass movement.
- (b) Answers were generally good, although there was a tendency to downplay the first part of the question by simply noting the hazards without a detailed explanation. Explanations for earthquakes and volcanic activity were often very simplistic. Good case studies were provided for the second part of the question, although a minority of candidates provided detail on more than one hazard.

Arid and semi-arid environments

Question 7

- (a) There was a good response to this question with the four main reasons for the development of hot arid environments being well known. However, there was sometimes confusion as to where these hot arid environments were located. The question asked for hot arid environments, thus using the Gobi desert as an example was not really appropriate.
- (b) The response to this question was mixed. Many answers made only a passing reference to the process of desertification. Even those answers that did attempt an analysis provided little detail apart from brief mention of overgrazing, overcultivation, etc. How these lead to desertification was often unclear. Answers to the second part of the question were also mixed. There were some excellent discussions of specific case studies, with the Eastern Cape of South Africa being analysed in a very sound manner. However, many attempts simply wrote in a very generic way about irrigation and re-afforestation.

Question 8

- (a) This question produced a number of creditable responses, although the detail concerning the operation of the processes of wind erosion was sometime limited. A variety of dune types was used in the second part of the question.
- (b) There is a tendency for candidates to assume, when analysing a photograph, that particular landforms are present just because it is a desert and those landforms must be present. Thus landforms were identified that did not occur in the photograph. Also, even if apposite landforms were identified, the diagrams produced to aid an explanation were generally poor. Understanding of the formation of the landforms was often limited. Some candidates thought that plateaus and mesas were the result of wind erosion. The poor response to the first part of the question was continued in answers to the second part. If there is uncertainty over the development of the landforms, then candidates are likely to find it difficult to assess the extent to which these landforms are the result of past climates.

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<p>Paper 9696/23 Advanced Physical Options</p>
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General Comments

The overall quality of responses to this paper was in line with that of past examinations. Many candidates displayed a reasonable knowledge of physical processes but they should strive to demonstrate a clearer understanding of why these processes can lead to the development and formation of specific landforms within particular environments.

Candidates should try to use named examples in order to illustrate their ideas. However, a more detailed use of appropriate case studies, integrated into the response, would gain more credit and add greater quality to the answer.

Although some candidates used diagrams and sketch maps, more candidates should be encouraged to do so in order to increase clarity and geographical perspective. Accurate labelling and effective annotation would then provide the basis for a strong response.

It is important that candidates do not merely repeat or describe the graphs and photographic images but interpret and elaborate on them in order to develop their ideas.

Comments on Specific Questions

Tropical environments

Question 1

- (a) Most candidates successfully described the main characteristics of the graph. Greater use of specific amounts and its annual distribution would have improved some answers. There was a wide range in the quality of explanation of the patterns and trends indicated on the graph. Some merely discussed atmospheric pressure systems and their development, whereas the better responses explained the movement of the ITCZ and its associated weather systems within a specific geographical context. Candidates should be encouraged to identify patterns and trends shown on the graph rather than simply quoting figures for every month throughout the year.
- (b) Most successful responses identified the correct weathering processes operating in tropical environments and their relative importance. However, a significant proportion of candidates tended to relate carbonation and solution to landforms found in temperate climates. Stronger answers concentrated on the development of cockpit and tower karst with the relative significance of climate, weathering and jointing in their development.

Question 2

- (a) This question focused on the main characteristics of a soil profile developed in a tropical environment. Basic responses tended to include a very generalised diagram with limited detail concerning the characteristics of the different soil horizons. However, the clearer answers not only used detailed and accurate annotations on their soil profiles but also explained the reasons for the development of the significant characteristics. The very best answers integrated the main features of the soil profile with a detailed explanation of the specific processes responsible for them.

- (b) Better responses provided a wide range of significant problems and integrated a detailed analysis of possible solutions. Some candidates tended to offer a rather generalised description of management ideas, but the strongest responses used a range of case studies and examples to evaluate the levels of success.

Coastal environments

Question 3

- (a) A significant proportion of the answers gained low marks because candidates did not apply their knowledge to *cliff profiles*. When discussing the relevance of rock types and their relative resistance to weathering and erosion, many candidates applied this to the development of headlands and bays. Many responses then discussed the formation of natural arches, stacks and stumps and made limited or no reference to cliff profiles. The better responses used clearly annotated cross sections to indicate how rock type and structure produce a range of different cliff profiles.
- (b) The vast majority of responses showed a good understanding of a specific coastal management scheme. Some of the better answers included a labelled or annotated sketch map to aid the explanation. The evaluation of the scheme produced a wide range of responses but the better answers analysed the success of their chosen scheme in terms of the environmental, social and economic impact.

Question 4

- (a) This was a very popular question but many responses included no diagram at all or included generic 'text book' diagrams. The best diagrams were the ones based on the photograph, but most of these tended to be simply labelled rather than fully annotated. Spits and tombolos featured quite a lot but neither of these features appeared in the photograph. Headlands and bays, together with caves, arches, stacks and stumps all featured prominently. Candidates who chose both stacks and stumps limited their chances of the highest mark as the explanation of their formation is quite similar.
- (b) There were some very good responses to this question as most candidates seemed to be familiar with the requirements for the development of coral. Many relevant threats were listed but the evaluation of the threats tended to be rather simplistic, e.g. 'this will destroy the coral'. The best answers included the sound reference to the symbiotic relationship existing in healthy coral. Global warming was rightly seen as a significant threat, but few candidates were able to separate out the difference between the impact of increased sea temperature and the rising sea level. The destruction of the ozone layer is still being wrongly quoted as a reason for global warming.

Hazardous environments

Question 5

- (a) The vast majority of candidates could describe or list the triggers for avalanches but only the better responses included an explanation of the fundamental reasons for slope and snow failure. The hazardous effects were occasionally ignored or dealt with in a very simplistic way, e.g. 'will cause death and damage'. The stronger responses included accurate and specific case studies and examples in order to illustrate the description of a range of hazardous effects.
- (b) There was a wide range of responses to this question. Most candidates were able to describe undersea earthquakes but few explained how the earthquake generated the tsunami wave and the vertical displacement of water. There was some confusion between predictions and warnings, and some candidates restricted themselves to the prediction of the causal earthquake. There were many good responses which quoted specific examples, but there was little real understanding of the way in which the Pacific Tsunami Warning System operates.

Question 6

- (a) This was a very popular question and there were many good responses. The key to success was a thorough understanding of the processes operating at the different types of tectonic plate boundary, and candidates who demonstrated this did especially well. Weaker answers did not include the point that plate movement can be restricted by friction, leading to the build-up of stress and its sudden release. Anthropogenic causes of earthquakes needed to be explained and not just listed.
- (b) Most candidates were familiar with the various products of volcanic eruptions and many of them were able to state the more obvious hazardous effects. Relating the products to the different *types* proved to be a more difficult task. The prediction of volcanic eruptions was dealt with quite well but some candidates did not relate the phenomenon being monitored to the imminence of the eruption. There were many good responses from candidates who used specific volcanic eruptions to illustrate their ideas.

Arid and semi-arid environments

Question 7

- (a) Candidates were able to describe several factors and processes that lead to the development of barchan sand dunes. The main discriminators were the range of factors and the accurate detail included in the processes. Most candidates were able to name or describe other types of desert dune, although only the better responses focused on explanation of the unique causal factors.
- (b) Many responses left scope for a wider range of historical evidence. In the second part of this question, the contribution of water was often acknowledged but not always assessed. The best responses discussed a range of landforms that are features from past pluvial climates.

Question 8

- (a) The better responses used specific values to illustrate the main characteristics regarding both temperature and rainfall. The explanations varied considerably. However, there were many good responses which referred to pressure systems, continentality and the rain shadow effect. The best responses also included reference to cool ocean currents and offshore winds.
- (b) Most candidates acknowledged the difficulties of a reliable water supply in establishing sustainable management in arid or semi-arid environments. However, the unreliability of rainfall was not highlighted as much as the low annual totals. Although most candidates understood the general concept of sustainable development, few candidates were able to assess the success of specific schemes environmentally, socially and economically. The best responses used case studies in relevant geographical locations and used evidence to support their judgements.

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<p>Paper 9696/31 Advanced Human Options</p>

Key Messages

- It is useful to prepare for the examination by using past papers, mark schemes and Example Candidate Responses from Cambridge as an indication of what the standards are at A Level.
- The use of case study length examples is important for success in some part **(b)** questions.
- Examination technique involves using the mark allocations (in square brackets) as an indication of how best to allocate time.

General Comments

The number of candidates who took this component is sufficiently small that generalisation is difficult. Teachers are encouraged to read the reports on Papers 32 and 33 this examinations series for a fuller perspective on 9696 Advanced Human Options. Together these reports aim to assist teaching and learning and to give an indication of what the examiner is looking for.

Some responses needed to be longer, especially for parts **(b)** where an essay is required. Some responses to the shorter demands in **(a)** needed to be fuller in terms of the detail offered and the development of the reasoning or explanation.

The resources in the Insert were interpreted effectively, especially Fig. 1 for **Question 3** which was handled very well. Candidates demonstrated good data skills in reading the divided proportional circles and providing their own input, such as the percentage change in total proven oil reserves between 1993 and 2013.

Comments on Specific Questions

Production, location and change

Question 1

- (a) (i)** Reasoning was secure, especially about the need to meet growing demand for food and earn more income. Most responses could have been enhanced by developing ideas from simple statements into fuller reasons.
- (ii)** Candidates interpreted Photograph A effectively. Some good outlines were seen of environmental problems stemming from the application of chemical fertiliser and from manual application, rather than mechanical application. A full response comprised problems (plural) in more than one dimension (social, economic, environmental, political).
- (b)** Candidates identified the key ideas in the context of agricultural change effectively. These were 'role of the government' and '**one** country'. As such, responses were well-focussed. All offered an evaluation and a named example. Few candidates were able to develop a piece of extended writing (an essay) sufficiently for high reward as the case studies were limited in detail, scope and development. It should be noted that it is only possible to evaluate past government actions, not possible future ones.

Question 2

There were too few answers to make comment appropriate.

Environmental management

Question 3

- (a) (i) Fig. 1 was interpreted very well with full marks commonly achieved. Candidates demonstrated a high level of data skills, for example being able to handle absolute and relative data, rank, and increases and decreases in percentage shares.
- (ii) All candidates were aware of global concerns about the use of oil, such as its depletion and polluting nature. Good responses provided developed explanations. They also identified three concerns clearly, rather than providing an undifferentiated paragraph.
- (b) The phrase 'one located scheme' in the syllabus should be interpreted at the local level, such as a named power station, for example Huntly Power Station in New Zealand (thermal power) or a specific solar or wind installation, such as the Eurus Wind Farm in Mexico, one of the largest in Latin America. Examples at the wrong scale, often national, for example wind in Germany, did not perform well. Candidates identified groups of people effectively, such as government, environmentalists and local residents. Most responses were about the general viewpoints held by these groups about generating power in one way (such as by wind) rather than about the success of a specific scheme.

Question 4

All candidates had a suitable case study of a degraded environment. These ranged in scale from the Canadian tundra to a named resort degraded by an accidental fire.

- (a) Responses combined 'causes' and 'consequences' appropriately. Higher quality responses provided descriptions of causes and explanations of consequences in more than one dimension (social, economic, environmental, political) supported by specific case detail. They also made links between these elements and showed how they interacted. Response quality would have been enhanced by greater detail and/or development of the ideas presented.
- (b) All candidates took the evaluative approach that this part-question required and showed understanding of what 'effectiveness' would mean for their chosen environment. All responses would have been enhanced by further detail of attempts, by the inclusion of clear criteria by which to measure improvement, and by greater depth at this level.

Global interdependence

Question 5

There were too few answers to make comment appropriate.

Question 6

- (a) (i) Ecotourism can be defined in a number of ways, one of which is 'responsible travel to natural areas that conserves the environment and improves the wellbeing of local people'. This improvement comes through their involvement in decision-making, through empowerment, through income generation from ecotourism and through the preservation of society, community life and culture. Ecotourism is usually small scale and carefully managed. It should be differentiated from forms of mass tourism in natural environments such as cruises and most safaris which may have negative impacts on the environment, indigenous people and the local economy.

Some candidates explained concern about the environmental impact of other forms of tourism; boredom with other types of holiday and the desire for something different; and the role of media in making people aware of ecotourism as an idea and/or specific locations associated with it.

- (ii) The word 'recent' in the question was the key to an effective answer. So, for example, adventure tourism was creditable, whereas city tourism was not. Whilst visiting cities is not recent, heritage tourism in an urban area would have been creditable if linked to an appropriate example. A similar question on Paper 32 this series saw responses about community tourism, dark tourism, medical tourism, sex tourism, sports tourism and wilderness tourism.
- (b) In choosing a tourist area or resort, scale is important and contributes to response quality. So for example, a response at the scale of a country, such as Kenya, is difficult to handle. A single named resort, such as Whistler, performed better. Better responses recognised the key idea of 'development' of the tourist area or resort and its timescale. Seasonal changes were therefore not valid. Candidates used Fig. 2 carefully, referring to each of its named and numbered stages, although this could have been more detailed in terms of the links made to the chosen example.

Economic transition

Question 7

- (a) (i) An index of social and economic inequality combines a number of measures, which is one of the main advantages. Creditable examples included the Human development index (HDI), the Multidimensional poverty index (MPI) and the Human freedom index (HFI).
- (ii) The difficulties of measuring inequalities in the world's poorest countries were explained well.
- (b) An effective response had a global perspective, was focussed on social and economic wellbeing and made meaningful links to political factors, both government activity and other political factors such as instability, conflict and corruption. The best considered other factors as part of the overall assessment, such as the effects of globalisation on the development gap or the realities of life in harsh physical environments in which water may be scarce and disease endemic.

Question 8

There were too few answers to make comment appropriate.

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Key Messages

- The best way to start a response is to read the whole question (both parts) at least twice and then plan what to write in answer to each part. This avoids repetition and helps to maintain focus, both of which save time overall.
- It is important to use paragraph structure for all parts **(b)** as they are essays (extended writing).
- Only past attempts or initiatives, i.e. those which have already happened, can be evaluated in **(b)**.

General Comments

The majority of candidates were from Centres in Africa and, because of this, many of the examples and case studies used were from countries in Africa which were home to, or familiar to, the candidates. This is good to see as there is greater facility and familiarity, both cultural and locational, with local examples and case studies.

Examiners noted that examples and case studies from China are increasingly used. At best, for example in response to **Question 3(b)** about renewable energy sources, these were detailed, relatively up to date and astute in the comments and evaluation made.

Almost all candidates answered two questions as required. A very small number of rubric errors were seen where more than two questions were attempted. Many responses needed to be longer, 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 detail offered and the development of the reasoning or explanation. This may be associated with the need for better understanding of what the different command words mean. For example, whereas **Question 4(a)(i)** had 'Outline', a proportion of candidates simply listed the sources.

In the Insert, Figs. 1 and 4 were general stimuli to candidates that did not require reading and interpretation for credit. (Teachers should note that in the new revised 9696 syllabus, stimulus resources will not be used and candidates will have to answer a compulsory resource-based question in each of their two chosen Options). Fig. 2, a compound graph, required interpretation in **Question 3(a)(i)**, and Fig. 3, an unfamiliar resource about the ripple effect in tourism, needed to be used to answer **Question 6(b)**. Few candidates had the skills to read the compound graph robustly, both for trends and for data support (see question-specific comments that follow). Fig. 3 was interpreted reliably.

Comments on Specific Questions

Production, location and change

Question 1

- (a) (i) Descriptions were largely secure. Most candidates recognised the benefits of working faster and more efficiently using machines. Some described the benefit to the farmer of reducing the cost of labour (wages) and of being able to do more work in the time. A few described the benefit of an increase in quality of agricultural production or the reduction in waste, for example during harvesting. Some included the mechanisation of irrigation and the potential and precision of systems such as drip feeding. Most responses could have been enhanced by developing ideas from simple statements into fuller descriptions, especially if linked to one or more named machines, such as tractors. As the word 'mechanisation' was used in the question, other technological changes, such as improvements in chemical fertilisers, pesticides and herbicides were not creditable, unless the benefit was clearly linked to mechanised application or delivery of these substances to the crop(s).
- (ii) Possible problems arising from the mechanisation of agriculture were understood well. For full marks, three different problems needed to be explained briefly. Many candidates explained the loss of agricultural jobs, with the consequences of rural unemployment, falling standards of living and possible unrest or increased crime. Some explained environmental impacts such as soil compaction from the weight of machinery. Again, the problem needed to be clearly linked to mechanisation (the use of machines), so, for example, eutrophication from overuse of, or runoff from, chemical fertilisers could not be credited. As the question was about 'problems which may arise from the mechanisation of agriculture', the high costs to farmers of the initial purchase of machinery could not be credited. The costs of maintaining or replacing agricultural machines were credited as was explaining how the costs of mechanising took farmers into debt. A few candidates explained how farmers could not escape from this debt because as more food was produced, so prices fell and so income was insufficient to pay back loans.
- (b) Most candidates were able to use one or more examples of actual past agricultural change, such as the land reform in Zimbabwe, the Green Revolution in India or the transformation of Jamaica's agricultural economy. Response quality could have been enhanced in a number of ways:
- by a tighter focus on 'can be difficult' in the question (so success stories were of limited relevance here)
 - with fuller understanding of what 'management' means and involves in agriculture generally and in connection with agricultural change specifically
 - by greater detail about the actual change(s) and the actual difficulties, and
 - where more than one example was used, by not repeating the same or similar difficulties for each one, such as 'lack of funds' and 'ignorance'.

A small percentage of candidates wrote loosely and hypothetically about possible future changes in agriculture. The best essays were structured as assessments, had a good overall perspective of difficulty and appreciated what management involves. This could include planning the change, promoting it, delivering it, addressing problems, confronting entrenched attitudes such as traditionalism, and handling finances. Many responses showed good geographical understanding of the demanding nature and comprehensiveness of agricultural change (social, economic, environmental and political dimensions).

Question 2

- (a) (i) Many candidates described well one type of manufacturing industry which may locate near to its raw materials, such as weight-losing processing industry. Few candidates were able to develop two or more types of these manufacturing industries and so achieve good marks. The classic cases are weight-losing or where the raw materials are bulky, such as construction materials, or perishable, such as in agricultural processing, packing and freezing.
- (ii) The economic concept of markets is not understood by all candidates. The term *markets* as in this question means where manufacturers sell products at a larger scale. These markets could be regional, such as Asia Pacific, national, such as Kenya, or local, for example, a named city or transnational corporation (TNC) as buyer. Some candidates wrote incorrectly about retail markets for goods, where individual buyers and sellers meet and money changes hands at a market stall. The best responses explained how the classic significance of markets for most goods has changed as more manufacturers become footloose in the global economy and as their markets become increasingly global. Being near to the market, such as the European Union (EU), can cut transport costs, increase market share and allow the manufacturer to respond to demand and fashion, such as customising cars or electronics for European tastes. For these reasons, industrialists may today choose locations with good access to airports and seaports, to improve transport and connectivity.
- (b) Good awareness was shown of the informal sector, its character and location by most candidates. Examples that were used included Mbare, Harare, Zimbabwe and the Jua Kali sector in Kenya. Balance was not needed between effects on workers and effects on government as it was to be expected that there was more to write about the workers. The best writing was clearly structured workers/government and positive/negative for each. Some wrote perceptively about survival for workers and their families, about skills training and the encouragement of entrepreneurial talents as positives. They then considered some associated negative effects such as uncertainty about income, working in hazardous environments or involving child labour and abusive practices. Most candidates recognised that the informal sector pays no taxes to government, whilst also employing a large percentage of people gainfully. Most responses were written in a style that was explanatory or sometimes narrative (telling the story of Jua Kali, for example). The best responses were an assessment in that they were written in an evaluative or judging way and provided a summarising overview in conclusion.

Environmental management

Question 3

- (a) (i) Most candidates understood that the term *trends* in the question means changes over time. Most commented on several world regions not just the one in which they lived. The reading and interpretation of Fig. 2 was weak and faulty with few candidates understanding the construction of compound graphs so that they could read this one accurately.

A compound graph comprises separate sections which, visually, are stacked vertically on top of one another. Fig. 2 comprises absolute data, measured in MTOE (million tonnes of oil equivalent), a standard measure for energy. This measure led some candidates to write about oil mistakenly rather than coal. The method of graph construction is that each world region is shown in a different colour and stacked one on top of the other. This stacking has two important effects: firstly, on reading data on a compound graph. Taking Africa as the example, the data (yellow) only consisted of the small band of yellow that was visible. Many candidates thought wrongly that Africa was behind and partly hidden by the world regions below it. In fact, the narrow yellow band for coal consumption in Africa in 1988 was less than 100 MTOE and increased slightly to approximately 100 MTOE in 2013. Secondly, the effect that this stacking has on reading trends on a compound graph. The effect of stacking data is that fluctuations low down on the graph affect the data above. Again taking Africa as the example, the fluctuations (small bumps and dips in the yellow band) are largely the result of fluctuations below in the data for North America and South and Central America. (For further practice in reading compound graphs, another example can be seen in Fig. 1 for Paper 33 this series, also about energy. There, the bar for each world region is made up of a stack of sections for different types of energy sources totalling to 100%).

On Fig. 2, most candidates managed to read the increasing trend for Asia Pacific, especially after 2002, and the quite steady trend for North America with fluctuation and slight decrease after 2009. Some also interpreted the decrease in coal consumption in Europe and Eurasia from the narrowing green band. In most cases, the only correct data given were for North America because it was the first world region above the x axis on the graph, so the reading started at zero.

- (ii) The reasoning offered was sound and could be very good. Most candidates provided reasoning about increased demand for energy from population growth and industrialisation, with coal being available, easy to use, and the cheapest source. Some offered reasons such as political choices over energy, newly discovered coal reserves or investment in coal-fired power stations (thermal power) and so-called 'clean coal' technology. Some linked this to knowledge of recent changes in China, India or Australia, but such factual knowledge was not necessary to achieve full marks. A generic response was fully acceptable given that the syllabus does not specify the study of energy consumption in Asia Pacific.
- (b) Knowledge and understanding of renewable and non-renewable energy resources was largely secure with HEP, wind and solar energy dominating the responses. Two resources confused some candidates. One was fuelwood, which is conditionally renewable when replanting and tree growth balance wood collection and tree removal. The other was biogas, which is renewable, as distinct from natural gas which occurs with oil underground and is non-renewable.

The best responses provided an assessment of renewable resources in the chosen country based on considerations such as total amount, trends, types, research and development, future plans, potential and limitations. This was best done in comparison with non-renewable sources (coal, oil and natural gas). Many candidates explained what renewable resources were used in the chosen country without giving an assessment. A large number of candidates wrote a response at the wrong scale based on the 'named located scheme' studied, such as the Three Gorges Dam in China or Kariba in Zimbabwe. Although some included some wider context, this approach limited achievement. Indicators of response quality included the use of data, for example recognising that, despite all initiatives, approximately 70% of China's energy still comes from coal. They also include specific detail, for example naming and locating wind farms, solar arrays or identifying by name specific energy policies, plans or initiatives. At the lower end of the spectrum of achievement data were absent or heavily inaccurate, for example that the Three Gorges Dam generates half China's energy, and the country example could be in name only with generic description of types of renewable resources and how electricity is generated from them.

Question 4

All candidates had one or more suitable examples of a degraded environment for (b). These ranged in scale from the global atmospheric environment to a named lake or dump site.

- (a) (i) Most candidates made the important link to combustion (burning) in manufacturing processes, vehicle engines, waste incineration and, in some responses, use of fuelwood, deforestation by burning or veld fires. As the question was 'main sources', individual behaviours such as smoking cigarettes or using perfume or deodorant were not creditable. Many of the best responses linked source to substance, such as carbon monoxide, sulphur dioxide or particulates. Weaker responses either omitted the substances or wrote generally about 'smoke'. A full response consisted of two or more sources, although most candidates outlined four or five. The command word 'Outline' means give essentials or main characteristics and so a simple list of sources was not enough.
- (ii) Many candidates took the sensible approach of linking the 'ways' to reduce air pollution here to the sources of air pollution outlined in (i), although this approach was not required. Popular ways included explaining the use of legal limits, fines and penalties; encouraging the use of public transport rather than private cars; and replacing non-renewable sources of energy with alternative renewable ones. Some explained how afforestation helps because trees remove carbon dioxide by photosynthesis. The relocating of industry was not credited because this moves the air pollution rather than reducing it. The 'ways' had to be different, so two examples of the same way could not be credited. When a question asks for a number of answers, three in this case, it is important to provide three. Two ways could only achieve 4 of the 6 marks available, and explaining four or more ways wastes exam time.

- (b) All candidates provided suitable examples of a degraded environment. An effective response was clearly located in the context of improving environmental quality and had difficulty as its focus. The best essays were multi-dimensional, comprising social difficulties, such as people's attitudes and behaviours; economic difficulties, such as great demands for finance; environmental difficulties, such as drought or extreme damage; and political difficulties, such as the need for international cooperation or the pervasive effects of corruption. Where more than one example was used, it was important not to make the same points about why it can be difficult (such as money and ignorance) for each example and, instead, to further develop the explanation. Lower-achieving responses tended to be rather loose, maybe not naming any specific place, or they seemed to be answering a different question, usually about the success of what had been done. It is important to read the question set carefully (see first Key Message) and to develop skills in using material in a way other than that in which it was taught and learned. These are the information skills of selection, application and direction.

Global interdependence

Question 5

- (a) There were many effective responses about Fair Trade, describing its nature and explaining its role for producers and consumers appropriately. The best used specific examples, for example Kuapa Kokoo in Ghana with links to Divine Chocolate, see www.kuapakokoo.com. Further information about Fair Trade can be found in a number of places including the work of the Fairtrade Foundation, see www.fairtrade.org.uk. Confusion between Fair Trade at the scale of the producer and the consumer, and free trade which tries to be fair (with a lower case f) to countries, as pursued by the World Trade Organization (WTO), continues amongst the candidature and this limited many responses.
- (b) Most candidates provided their own opinion as to the extent to which the statement in the question was true. The best responses were structured as an assessment throughout, were perceptive in argument, well grounded in conceptual understanding of aid and used knowledge of examples of aid selectively and effectively to support their argument and assessment. Common arguments about aid causing problems included dependency, corrupt practices and inhibiting local businesses and the country's development. Common arguments about aid solving problems included the use of relief (emergency) aid to save lives after disasters and infrastructural improvements by international bodies such as UN-Habitat, <http://unhabitat.org>, or by NGOs such as WaterAid, www.wateraid.org.uk. In the middle of the spectrum of achievement, candidates tended to explain the advantages and disadvantages of aid in a developed list without actually addressing the question set. All responses needed examples of aid being received and of its effects, rather than just a general and typological approach. Some candidates wrote about international debt rather than international aid and were overly concerned about issues of paying back loans when aid is a much broader and more diverse issue. The syllabus lists relief aid, development aid, tied aid, bilateral aid and multilateral aid.

Question 6

- (a) (i) The full spectrum of response quality was seen. A full answer comprised three different, distinct reasons which were developed either in the explanation given or by the use of an example. Reasons that were commonly given included boredom with beach holidays, the marketing of new types of holiday experience, and the decline in quality of coastal tourist destinations linked to mass tourism and stagnation or decline in the life cycle model of tourism. Some mentioned concerns about the risks of skin cancer linked to sun exposure or choosing sustainable tourism which is more ethical and more environmentally friendly.
- (ii) Types of tourism are becoming better known. Whilst ecotourism was chosen by many candidates, a range of other types were seen including business tourism, community tourism, dark tourism, medical tourism, niche tourism, sex tourism, sports tourism and wilderness tourism. The word 'recently' in the question was important, and for this reason mass tourism and religious tourism were not credited.

- (b) Fig. 3 was correctly interpreted by almost all candidates, with 'new money' being like a drop of water sending out ripples which affected the local area in three ways of increasing distance from tourism and increasing magnitude. Some candidates identified this correctly as a different way of representing tourism's multiplier effect. The most effective responses to (b) were carefully economic avoiding social and environmental effects, addressed both positive economic impacts and negative ones, integrated the use of Fig. 3 and exemplar detail and provided an overall evaluation. This evaluation was either made throughout the response by the way it was expressed and structured or in an extended summarising conclusion. Most other responses tended to be overly positive about tourism, for example writing about the creation of direct and indirect employment in tourism whilst ignoring issues of its seasonality, leakage and low rates of pay. Most responses would have been improved by further use of examples which were located, detailed and contemporary and some use of data as evidence of economic impact. Some candidates were able to name places, events, hotels or hotel chains, provide statistics of income for a given year and give currency, price or employment data creditably. Compare this with a response written in the style 'In Kenya ...', with the broad impacts of 'boosting income' and creating 'many jobs'.

Economic transition

Question 7

- (a) (i) Knowledge of the new international division of labour (NIDL) was almost always secure. Candidates understood the spatial organisation of different functions to make the best economic use of labour. A full response comprised manufacture/assembly and at least one other function such as research and development (R&D). Some candidates described the global shift of manufacturing production rather than NIDL.
- (ii) Candidates who understood what foreign direct investment is answered this well. A number of conditions were explained including political stability, government incentives, access to raw materials, the availability of good transport infrastructure and market potential. One or more examples needed to be integrated into the response, such that a well-developed explanation without the example(s) could achieve 4/6 marks.
- (b) The idea of cost minimisation is understood as part of TNCs' operating behaviour and provided the focus to most responses. The highest scoring responses were carefully focussed on spatial organisation globally and assessed minimising costs alongside other aims such as profit maximisation, market penetration and the need for market information and customer contact. So, for example, location within the European Union (EU) may not be the least cost location, yet it gives access to markets in all the member countries which are MEDCs and enables customisation, for example, of cars for the European market. The examples of TNCs used were largely appropriate. Some candidates gave limited information about where the chosen TNC is actually located and so 'spatial organisation' was more assumed than made real. Others seemed to write out their case study rather than try to answer the question. It is always important to read the question set carefully (see first Key Message) and to develop skills in using material in a way other than that in which it was taught and learned. These are the information skills of selection, application and direction.

Question 8

- (a) (i) In the process of cumulative causation, initial advantages are the natural advantages a location starts with which, when used, encourage development and growth there. Classically these initial advantages are understood to be of two types: a resource, such as fertile soils or a mineral; and a locational advantage, such as a natural harbour. A full answer used one or more example(s) to reinforce the explanation. What are known as derived advantages, such as a manufacturing industry or productive agriculture, were not creditable as these develop later and so are not therefore 'initial'.
- (ii) Backwash effects were less firmly explained than initial advantages. Some candidates wrote about spread effects rather than backwash effects. Those who explained backwash tended only to see it in terms of migration and the flow of people from the periphery to the core looking for employment. This flow results in brain gain and/or brawn gain in the core and brain drain and/or brawn drain from the periphery. A full understanding of backwash effects involves three types of periphery-core flows and their impacts: labour, capital (finance) and goods including food and raw materials.
- (b) This was a two-stage part question. Candidates were more successful in describing how regional disparities were tackled than in assessing the extent to which regional convergence had been achieved. Some omitted the second element (see the first Key Message). The best responses were clearly regional, that is they related to named and located regions or parts of the chosen country. A significant proportion of candidates wrote about tackling other disparities such as those between urban areas and rural areas or rich and poor. Where these differences had some regional foundation or support, they could be credited; where they were social or socio-economic, they could not be credited. One example would be rural electrification in Zimbabwe which could be given an appropriate regional basis by reference to named areas and/or regions compared to the core region (Harare) and sub-core (Bulawayo). When writing about regional convergence, response quality could be enhanced by the classical economic understanding that as a country develops regional divergence (increasing regional disparities) occurs before regional convergence when lagging regions catch up as the result of government intervention and economic growth.

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Key Messages

- Case studies and examples need detail, precision and development for good reward. Candidates who use 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 **Question 6**, 'one or more tourist destinations', but examples are also vital when there is no explicit request, as in **Question 3**.
- Paragraphing is important in communicating ideas. Examples were seen of extended texts where paragraphing would have aided the communication of ideas and examples of paragraphs which were randomly created.
- The importance of selection, direction and application of learned material to the actual question set needs to be emphasised. Skills are needed to use material in a way other than that in which it was taught, learned and maybe used previously.
- In parts **(b)**, the approach should be evaluative (to meet syllabus AO4) and the structure and language analytical, providing an argument which provides assessment. A few candidates still concentrate on part **(a)** of a question and produce a fragment for part **(b)**. It is important that candidates use the mark totals as guidance.

General Comments

The resources in the Insert were interpreted better in **Questions 3** and **6**. **Question 1(a)(i)** was generally not well done by most candidates. Centres could consider the language to be used for describing images, incorporating locational terms such as foreground, background, centre, left, right, etc. In **Question 3(a)(i)**, most candidates could pick out the main features of energy consumption. In **Question 6**, the resource was used for part **(b)** of the question, with successful responses able to assess the usefulness of the model rather than treating it as a data response exercise. In **Question 8(a)**, the skill of describing *pattern* needs to be developed. Teachers are encouraged to use as wide a variety of resources during the course, both from past papers and from other materials, to develop skills of close observation, interpretation, suggesting explanation and critical appreciation. The latter point is illustrated in **Question 6(b)** by the inclusion of a model (a spiral of decline), which many candidates will not have seen in this form before.

The vast majority of candidates provided two full responses in satisfactory to very good English. The fact that most part **(a)** questions were broken down seemed to help many candidates, but this did not determine success, particularly when a faulty understanding of a concept in part **(a)(i)** was important for part **(a)(ii)**. 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 recognised machines as inputs and realised that there must be labour inputs in driving the machines. Better responses took this further and considered physical inputs such as the climate or further inputs such as capital to buy the machines or to be used for inputs such as chemical fertilisers or pesticides. Very few noted and understood the significance of the reference to 'the agricultural system' as stated in the stem of the question.
- (ii) Productivity was not understood securely. Most wrote about production and did not recognise that the photograph is of an extensive system. Both terms, productivity and extensive agriculture, needed to be understood. Some considered productivity from the point of per person/unit of labour but few knew that it is also measured in terms of per hectare/unit of land.
- (b) An open question which allowed candidates who had knowledge of agricultural change to achieve well. Specific examples of agricultural change were required for a strong response, whether it was introducing Green Revolution techniques and intensification or land reform or introducing or altering cash crops. Success required one or more specific examples of actual agricultural change, such as the Green Revolution, and some detail. Other obstacles that were considered included issues of finance and governance. Obstacles such as finance for access to modern equipment or techniques often received little attention or none. The best answers tackled 'obstacles' broadly rather than just considering the role of tradition and concluded with a valid decision concerning obstacles. Weaker responses often did not provide a clear idea of the change occurring and traditions were rather general or vague.

Question 2

- (a) Poor interpretation of the question tended to produce weak answers. Candidates need to securely understand what is meant by 'manufacturing industry'. Content might have included comment on constraints within urban areas and/or advantages of locations further out, with material from the Human Core in terms of understanding functions in settlements.
- (b) Good answers could call on economic, social, political or even historical reasons for appropriate difficulties and could relate these to their chosen example(s). Comment on management was expected in the form of references to things such as: the players, e.g. the state/government or companies; actions carried out or actions which are beyond control; finance or the time scale involved. To successfully address the question, candidates need a firm and robust case study as per 1.4 in the syllabus, the management of change in manufacturing industry, and/or to select examples related to the factors affecting the location of manufacturing industry. Too often responses were vague and were based on a lack of specific knowledge on likely changes or locations.

Environmental management

Question 3

- (a) (i) This was largely well understood and most candidates read the data accurately. The best answers recognised the main features such as dominant sources or comparisons between fossil fuels (non-renewable) and renewable sources. They also had global reach (more than Asia Pacific on its own) and breadth (not just oil with or without natural gas). Weaker responses concentrated more on the highest and lowest for different sources rather than the main pattern.

- (ii) The question did not require description of the pattern detail but asked candidates to suggest reasons for the pattern; hence a generic approach to coal consumption was fully acceptable. Candidates were not expected to have knowledge of coal use in the world regions – ‘power in China’, ‘steam trains in Africa’ – but to reason from their understanding of factors affecting energy consumption. They might have used reasoning related to factors such as: resource endowment, costs/prices, demand, environmental concerns, resource depletion, energy policy, energy security, etc. Weaker answers often restricted their answer to the presence of alternative sources or just trying to explain the pattern for specific regions and repeating the same suggested reason for each region. One quality of a better response was the inclusion of several suggested reasons, whilst another was the presentation of a world view recognising the variable nature of coal consumption or the minimal importance in two regions.
- (b) Two approaches were commonly seen where candidates displayed their knowledge about the topic without addressing the command ‘assess’ in the response or by briefly coming to an assessment at the end. These approaches were either source by source and for each source describing the advantages followed by the disadvantages, or an approach of two halves – advantages followed by disadvantages. These approaches tended to repeat themselves without deepening the assessment. A true assessment needed skills in holding one against the other. For example, whereas advantages of wind energy are that wind is free and blows at sufficient strength in most places, its disadvantages are that power cannot be generated in very high wind conditions for safety and some days are calm, making wind an unreliable and intermittent source requiring back-up from other sources of power.

The best responses were thematic, e.g. considering cost, locational factors, use by LEDCs. They were also characterised by sound case study material and valid exemplar support. Some valid ideas involved general information about renewable energy sources compared with fossil fuels or nuclear power or a world overview of concern over greenhouse gases. A variety of points on both sides strengthened the response. Comments on the balance of advantages and disadvantages for individual countries and/or the world improved the assessment.

Although this question was, on the surface, quite straightforward, some candidates did not have a clear focus. Some explained more about the problems of non-renewable sources than the benefits of renewable sources or they did not develop or support ideas using examples. Some responses used very simple points such as the need to provide ‘clean’ energy without explaining this. Many answers explained a few advantages and disadvantages and then simply stopped without any comment about, for example, the likelihood of use of renewable sources now or in the future.

Question 4

- (a) (i) Causes could be approached by activity or conceptually. Most responses took a source approach, with industry and agriculture as the popular choices, whilst others made sensible points about domestic waste, especially sewage. Some responses developed the causes by considering conceptual aspects such as: poor management; weak law enforcement; accidents and lack of education. Those who only listed sources achieved up to two marks. A few candidates ignored the ‘rivers and lakes’ part of the question and wrote about obvious marine pollution which was not relevant. Since the question referred to pollution, the results of mass movements were not usually relevant.
- (ii) Some element of explanation was needed, as per the command of the question, so simple statements about diseases or eutrophication needed elaboration and/or exemplification. Some candidates chose to use the same consequence: disease leading to death but wrote separate accounts for each of: people, animals and marine life, which takes time but does not add to the quality of the response. More successful responses took the consequence a step further, for instance by considering the cost element of water treatment to prevent disease.

- (b) Environmental protection could be interpreted specifically to mean protecting one or more named located environments, such as a forest or a national park, or more broadly often considering the atmospheric environment at the global scale. Successful responses had specific environments in mind, such as limited areas of rainforest, located agricultural land, certain stretches of river or the atmospheric quality of named cities. They broke down finance into key elements such as wages of wardens and costs of hard engineering, and also considered 'other factors' and so were able to comment on the fact that one may be the 'key' or most important in one or more areas. A few candidates struggled to use their knowledge on environmental degradation to answer this question.

More was needed for a good standard than descriptions of degradation. The vital concept was 'protection' so that responses needed some idea of trying to reduce damage. Another approach was one looking at protection but simply considering success or failure. This often meant that the focus on factors affecting protection was lost.

Global interdependence

Question 5

- (a) Mixed responses were seen with some more secure on resource endowment and others more secure on locational advantage. For resource endowment, some candidates took a simple approach such as: 'The Middle East has oil, Germany has cars and Switzerland has watches'. Locational advantage in some responses was simply seen as trading with neighbours. Better responses produced good examples of each concept and related them to trade, for example: 'Australia has a comparative advantage in the production of mineral commodities stemming from a rich and diverse mineral endowment. World economic growth in recent years, particularly in China and India, has increased demand for mineral products which Australia can export for profit.' Other better approaches looked at negative aspects of the two factors but turned this round clearly to influences on trade such as: a lack of resources leading to the development of other forms of trade such as tourism, an invisible export.
- (b) The best responses considered both advantages and disadvantages of aid and trade and constructed an argument in favour of one or the other. The value of trade linked to exploiting a country's physical and human endowment and the investment of profits into necessary imports and development projects was hinted at by a few. The best answers could also suggest that this question may be answered differently in different countries and at different times. Some stronger responses integrated the two with assessment comment throughout, for example differentiating types of aid and showing good understanding of the limitations of trade for LEDCs in the uncertainties of the global economy in the twenty-first century. Weaker responses were often only able to make some basic comments about each separately. Trade was often little developed or only seen as positive or negative. Aid was often only seen as a financial transaction with eventual negative results. Some confusion with loans and debt here narrowed the overall view of aid.

Question 6

- (a) (i) Many candidates did not understand the concept of seasonality. They simply wrote about how seasons may impact generally (e.g. winter sports in the Alps) or occasionally about the benefits of tourism as a whole, or explained the differences in the year between hot summer holidays and cold winter ones. Others did not note that the question also demanded that the response should consider the 'can affect tourist destinations'. Better answers could describe the seasonal pattern of some locations such as warm and cold or wet and dry which highlighted certain times of the year only as the main tourist time (season). The best responses referred to both problems of peak and out of season and even the positive side of a quieter time of year. Those who showed a clear understanding of seasonality were usually able to suggest suitable answers to (a)(ii).
- (ii) The key to success here was to recognise that the question is about managing seasonal demand and that there are two ways which are different – not two case study examples but the management way being the same. Some good responses were seen about making a seasonal trade an all-year-round one by ways such as business tourism, new activities and attractions, etc. A different approach was to look at issues such as overcapacity in peak seasons and managing this through ways such as pricing. However, some candidates seem to think that peak season can be managed by offering cheap rates to encourage people to come to a destination – possibly confusing managing seasonal demand with creating seasonal demand.

- (b) Good responses recognised the spiral as a reverse multiplier and therefore largely economic. Successful responses directly addressed the ‘usefulness’ of the model and used a range of ideas to develop the assessment. These included: the cause of decline being competition but that there were other reasons why a tourist destination may decline; this diagram only addresses decline whereas some destinations are more recently developed or are of a type which is not subject to competition in the same way as that shown, such as ecotourist venues or niche areas; this pattern could be different if resorts reinvented themselves (rejuvenation). There were some good responses which combined one example of a tourist destination which fitted the model and one which did not, such as where rejuvenation occurred. Weaker responses tended to ignore the diagram or copy a few sections without using them to relate to the question. Others strung together the words in the boxes on Fig. 2 or wrote the Butler case study they had learned without reference to the question. Some tried to apply both, but all too often missed the lead-in lozenge ‘new destinations emerge ...’. The problems were usually ones of relating learned material about resorts without referring to the picture shown on Fig. 2.

Economic transition

Question 7

- (a) (i) Secondary industry was usually understood.
- (ii) The benefits of adding value and export earnings and the problems of pollution and lack of skills were the usual points chosen. A few candidates did not address ‘explain’ or the need for two of each.
- (b) Better answers referred to examples of NICs with a sound knowledge of the factors behind emergence and growth, and considered factors other than cheap labour such as government support, ease of trade, investment, access to markets, etc. They also understood how the factors changed over time as the NIC developed. Weaker answers tended to answer generally and provide little or no evidence for points made.

Question 8

- (a) (i) The skill of describing a pattern still needs to be improved on. Successful responses were able to use compass direction correctly and noted that the pattern is complex, with an overall pattern of worse in the centre and north east and better in the west. Few commented on the element of mixing. A narrow approach was to pick out the cities and comment about what was near to them.
- (ii) A few referred to three reasons, although more struggled to go beyond the practical difficulties of collecting such data in LEDCs. Some good responses were seen with a range of reasons from difficulty of definition, what to include, the personal nature of wellbeing, accessibility and government interference.
- (b) Better responses used exemplar information, especially regarding actual disparities and possible or actual attempts to reduce them. Some wrote about core and periphery in a valid manner and had support examples of specific core areas in countries and especially of specific peripheral areas. Engaging with the view expressed in the question was crucial for a high-level response. Weaker answers struggled to provide details of disparities, especially regional patterns of disparity, or to address specific difficulties. Too often difficulties were generalised and little was made of changes over time.