GEOGRAPHY

> **Paper 9696/11**
> **Core Geography**

General Comments

The paper proved to be easily accessible to most candidates resulting in a very satisfactory outcome with a good spread of marks. Excellent marks were achieved by a significant number of candidates from across the geographical range of Centres. Although the discrepancy between the calibre of answers to Physical Geography and Human Geography questions continues, there were signs of some improvement in the Physical Geography answers. However, the imprecision in the use and understanding of Physical Geography concepts continues. This was especially noticeable in answers to **Question 7** and **Question 9**. There is still confusion between erosion and weathering and the description of specific weathering processes was sometimes inaccurate. Questions on mass movement continue to cause problems. Atmosphere and Weather continues to be the least popular option in **Section B** but **Question 2** in **Section A** was quite popular with good marks being achieved. It was still uncommon for all three Physical Geography questions in **Section A** to be answered. The accurate use of local examples continues to impress, especially in answers to the Human Geography questions, although there was a tendency to include examples that were either not relevant or too vague.

Although there is an improvement, many candidates are still not fully appreciating command words such as 'compare', 'overall', 'relationships', 'trend' and many more. The interpretation of 'trend' is still misguided; this was seen in answers to **Question 2 (a)**. Many candidates simply list everything without providing a general synthesis. Candidates are still explaining when all that is required is description. Also, there were many instances of pure description when explanation was required. Where questions ask for description and explanation, the description component is often ignored with candidates attempting to explain before they have described what they are trying to explain. Some of the questions had three parts and it was quite common for one of the elements to be ignored. This was especially true of answers to **Question 7 (c)**.

Comments in previous reports have stressed the importance of being able to evaluate issues with cogent arguments when answering questions in **Sections B** and **C**. There were again encouraging signs of an improvement in this respect, especially in answers to the Human Geography questions. It is worth repeating that it is very difficult to obtain a mark in Level 3 without some form of evaluation or assessment.

Overall the paper was completed by most candidates and time did not seem to be a major issue. Very few candidates answered all the questions in **Section A** or more than the one required in **Sections B** and **C**.

Comments on Specific Questions

Section A

Question 1

(a)   Virtually all candidates recognised that the photograph was of a meandering channel.

(b)   The question asked for a labelled diagram of the river channel shown in Photograph A. However, most candidates produced a stylised diagram of a meandering channel which bore little resemblance to the photograph. The line of thalweg was often omitted or, if it was shown, it was shown inaccurately, often with a series of lines rather than a continuous line. Thus, many candidates lost marks unnecessarily.

(c)   Explanation of meandering channels always causes problems. This reflects the imprecision in the use of terms noted in the introduction. Most candidates were aware that pools and riffles were somehow involved but were unable to use this information to explain meander formation. Also, helicoidal flow was known to be involved but few could describe how it operated or how it was

initiated. Many candidates started their explanation with an already sinuous channel. Erosion on the outside of river bends and deposition on the inner bends creating a slope-off slope or point bar was well understood. The formation of ox bow lakes was often the most impressive part of the answers. However, few candidates were able to link the development of meanders and the creation of ox bow lakes to receive good marks. Most candidates did not achieve more than half marks.

Question 2

(a)   The comments about the difficulty of describing a trend, noted earlier, applied to this question. Answers either simply referred to the increase in both components or went laboriously through every change through the years. This was clearly not answering the need to describe a trend and also wasted a lot of time.

(b)   The description of the causes of the increase in carbon dioxide was often impressive and it was encouraging to note the large number of candidates who recognise forests as carbon sinks. Unfortunately, explanation as to how this increase leads to global warming was less satisfactory. Too many candidates still write about holes in the ozone layer, despite comments every year about this. Most recognised that carbon dioxide is a greenhouse gas that traps heat, but few possessed the detailed knowledge of incoming short wave radiation and outgoing long wave radiation in order to achieve top marks.

Question 3

(a) (i)   Mostly correct.

   (ii)   Mostly correct.

(b)   Few candidates understood the process of heave.

(c)   Few candidates were able to explain how a **rotational** slide occurred but some candidates gained marks by explaining why slides *per se* occurred. Many recognised that the relationship between shear strength and shear stress was somehow relevant but were unable to articulate how these might change. Only a few candidates explained the process in terms of pore water pressure, but many realised that water was somehow involved. Shocks produced by earthquakes were recognised by some, interestingly often related to the recent Nepalese earthquake which was encouraging. Description of the effect on slope shape was helped by referring to Fig. 2. Thus, it was possible to obtain some marks without fully understanding the processes involved.

Question 4

(a)   Very few candidates answered incorrectly.

(b)   Most candidates produced two relevant reasons but lost a mark by not developing the reason, such as mentioning natural disasters, diseases, etc., without qualification.

(c)   There were many excellent, comprehensive answers to this part and high marks were quite often awarded. Most candidates were able to use specific examples with authority.

Question 5

(a)   Most candidates were able to gain both marks, although some candidates failed to use data from the resource.

(b)   Candidates experienced problems with the term 'main' and simply described the data.

(c)   Response was generally sound, but many candidates did not concentrate on economic reasons for migration and produced lengthy answers concerned with as many reasons for migration as they could think about. This was a failure to appreciate the main command in the question.

Question 6

(a)   Most candidates were able to describe sufficient features of the buildings for full marks.

(b)   Most candidates obtained full marks.

(c)   Candidates are very familiar with the characteristics and nature of shanty towns, often with first-hand experience. Thus it was rare to find a poor answer to this question. Some of the specific knowledge was very impressive.

Section B

Question 7

(a) (i)   This question demonstrated the lack of precision in defining Physical Geography terms noted earlier. It was clear from the hydrographs drawn for answers to part **(b)** that most candidates understood what lag time and peak discharge were, but were unable to articulate this knowledge. A minority of candidates suggested that lag time was the time period between start of the rainfall and the peak discharge and some thought it was the time between start of rainfall and peak rainfall.

(ii)   The same problem in explaining concepts was seen in answers to this question. Most candidates were able to achieve some marks but many did not provide the precision needed to achieve full marks. Often, precipitation was ignored, with answers simply referring to water.

(b)   Answers with respect to rock type often contained inaccuracies, inconsistency and incompleteness. Referring to rock as either hard or soft is not very helpful, especially in the context of water movement. Even referring to permeability and impermeability is not useful unless the characteristics of the rocks that govern permeability are explained. Also most candidates seemed to assume that it was bare slopes that were being considered, forgetting that most slopes possess a soil cover and that the nature of that soil might be influenced by rock type. Most of the emphasis was on infiltration when it was percolation that was the most important process. Permeability and impermeability only operate when the water reaches the rock after infiltrating the surface. It is the influence of rock type on the build-up or otherwise of water in the soil that is important. Some candidates equated rock type with tarmac.

The role of vegetation was answered more convincingly, although detail concerning the processes was sometimes limited. Few mentioned the reduction in water flow as a result of evapotranspiration and few considered the effect of different types of vegetation or the variation in vegetation cover. The emphasis was on land with vegetation and bare surfaces.

(c)   Answers were generally satisfactory, although few candidates covered all three elements in sufficient detail to achieve marks in Level 3. It was good to note that the role of recurrence intervals in flood forecasting was mentioned by many, even though the level of understanding was occasionally limited. It was also encouraging to note that catchment-wide procedures to limit flooding were mentioned.

Question 8

(a) (i)   Most candidates were able to offer basic definitions but detail was often lacking. The fact that temperature inversions were not normal was omitted by many.

(ii)   Most candidates were able to explain the formation of fog to some extent. The better candidates explained both advection and radiation fog very well.

(b)   Diagrams were often ineffective but the general issues were understood. Many candidates still write about the equator being closer to the sun, but most realised that deficit at the poles was created by the greater amount of atmosphere that the radiation has to pass through. The tilt of the earth was often overlooked as a factor. The role of albedo and cloudiness or a lack of cloud cover was mentioned by some candidates.

(c)   Answers tended to be either very authoritative or completely inaccurate. Description of lapses rates sometimes contradicted the diagrams produced. The best candidates also described the nature of conditional instability.

Question 9

(a) (i) Most candidates achieved both marks for this part.

(ii) The arcuate nature of the chain of islands was often overlooked, and some candidates referred to the convergence of an oceanic and a continental plate.

(b) The diagrams varied quite considerably in detail and accuracy. Convection currents were often ignored and the uprising of magma to produce volcanoes was often in the wrong place. Fold mountains were often forgotten. However, the level of detail and accuracy was better than in previous years for similar questions.

(c) This was quite a substantial question and answers were often very impressive, especially with regard to the chemical weathering of both granite and limestone. The main minerals in granite are well known and the detail concerning the hydrolysis process was impressive. Carbonation of limestone is always quite well understood. However, sometimes physical weathering processes were ignored or downplayed in importance. The relative effectiveness of factors and processes was often overlooked.

Section C

Question 10

(a) (i) Most candidates were able to give a partial definition but many omitted the 'per 1000' live births and some omitted the 'per year'. The age limit was often defined as 5 years. There was an occasional misunderstanding of the term 'mortality'.

(ii) The response was generally sound, although detail was often lacking. Better medical care and better nutrition were often mentioned but without sufficient detail to develop the points.

(b) This was a very accessible question which produced some very good, detailed answers. Most candidates achieved reasonable marks.

(c) Many candidates answered this question well, most using the example of the one-child policy in China, although some used Singapore as an example. Some answers were unbalanced between advantages and disadvantages and some were confused between reducing the growth of population and a reduction in actual population.

Question 11

(a) (i) The basic idea of stepped migration was well understood but the level of detail in the description and in the explanation was often limited.

(ii) Most candidates were able to provide two good reasons for stepped migration.

(b) This was a reasonably accessible question and good marks were often achieved. The balance between positive and negative impacts was sometimes lacking.

(c) The concept of counterurbanisation presented few problems except for the confusion between urban and suburban. There were four components in the question: negative and positive impacts for both the urban areas and the receiving rural areas. This comprehensiveness was often lacking with the answers being unbalanced in some respect.

Question 12

(a) Those candidates who understood the concept of functional zoning were able to articulate a number of creditable reasons for its occurrence. Those with little concept of functional zoning struggled to produce a coherent answer.

(b) Sensible answers were produced by many with the emphasis mostly on the advantages of moving. The disadvantages of location in the CBD were mainly the obverse of the advantages of a location near the edge of the urban area.

(c) The quality of the answers depended on knowledge of a specific city and the attempts to provide infrastructure. The level of detail was often quite limited and, even though what constitutes infrastructure was outlined in the question, some candidates strayed away into other developments. Some even wrote about the upgrading of shanty towns.

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Paper 9696/12
Core Geography

General Comments

Candidates continue to be well prepared for this examination. They frequently displayed a clear understanding of the geographical concepts involved, and the quality of many answers was reassuring. Excellent marks were achieved by a significant number of candidates, but the paper was also successful in testing candidates of wide ranging abilities.

Few candidates did not complete the required number of questions, which suggests effective planning in terms of time allocation. Rubric errors continue to decline, and only weaker candidates tended to attempt to answer all six questions in *Section A*. In *Sections B* and *C,* assessment and evaluation are usually required to reach Level 3. Answers are improving in this respect, but the sheer quantity of factual detail can sometimes obscure balanced conclusions. It is important that 'evaluation' is seen as a specific task within the demands of the question and that sufficient time is allocated to it.

The quantity of detail which appeared in many answers was impressive and to be commended. There is certainly an increasing understanding of topics such as Stability and Instability within **Atmosphere and Weather,** but Mass Movement within **Rocks and Weathering** continues to be a less secure topic for some.

There has been a marked improvement in terms of relevance of material used in answers, but balance in relation to the demands of specific questions remains an aspect needing further progress. Some questions demand a number of discussion points, such as **7(c)**, where abstraction, dams, and urbanisation are specified in relation to both 'flows' and 'stores'. An attempt to balance these demands certainly raises the quality of answers. Furthermore, although the question does not specify that examples are required, the use of relevant examples will enhance an answer, and be a possible Level 3 indicator. Where candidates draw upon local knowledge, it is often very effective.

There has been considerable improvement in recent years in terms of command words such as 'compare', 'describe' and 'explain'. Some candidates still embark on lengthy explanations when only description is required, but this appears to be a diminishing problem. The term 'trend', however, remains a point of weakness. A list of detailed changes within a given timescale does little to identify an overall trend. However, candidates are generally effective in using the figures and photographs provided in **Section A,** although cross-section diagrams are often not the most effective way of displaying the main features of a photograph. Plan diagrams will often be the better choice, particularly in respect of annotation.

Finally, as reported in November 2014, clarity of expression and handwriting are often impressive, even where English is not the candidate's first language.

Comments on Specific Questions

Section A

Question 1

(a)   Most candidates were able to identify evidence of braiding or meandering.

(b)   Diagrams often bore little resemblance to the photograph, and labelling was limited.

(c)   Braided channels are not clearly understood in terms of discharge variations. Meander explanations are more secure, and many candidates now understand the roles of pools and riffles, and helicoidal flow.

Question 2

(a) (i)   Very few were unable to calculate correctly the percentage of Carbon Dioxide.

    (ii)   Too many candidates did not use Fig. 1B as directed, and so responded fossil fuel use rather than energy supply.

(b)   This proved a challenging question, with candidates writing at considerable length on deforestation, but without clear reference to Fig. 1A and 1B.

(c)   There were some excellent answers, clearly referring to incoming short wave radiation and the trapping of outgoing long wave radiation by greenhouse gases. Unfortunately, some candidates drifted into detailed discussion of the ozone layer to the exclusion of the greenhouse effect.

Question 3

(a)   Candidates scored well.

(b)   Answers were often clear and detailed, and of a high standard. The frequent inclusion of island arcs as relevant landforms was therefore unfortunate.

Question 4

(a)   Very few candidates did not give the correct answer.

(b)   Many detailed answers, but some did not identify the overall trend.

(c)   Many excellent answers, often very detailed and containing relevant examples.

Question 5

(a)   Most could identify two relevant features, but references to birth/death rates were speculative.

(b)   Too many candidates drifted from description into explanation.

(c)   Well answered, often containing a wide range of economic benefits and a clear knowledge of Qatar.

Question 6

(a)   Some candidates were uncertain about the term 'urban renewal', and descriptions lacked range.

(b)   Many confined themselves to comments about the CBD. Not irrelevant, but limited.

(c)   Valid reasons given, but many did not identify the need for alternative accommodation during the period of urban renewal.

Section B

Question 7

(a)   Antecedent moisture and percolation were understood in general terms, but there was often a lack of precision. Transpiration was not always distinguished from evaporation.

(b)   The best candidates wrote succinctly and clearly, displaying impressive knowledge and understanding of the Hjulstrom curve. Those that chose to draw a cross-section diagram often offered a limited explanation.

(c)   A wide ranging question which many candidates found difficult. Abstraction was not widely understood, and few identified dams in terms of controlling the flow of water downstream. Even urbanisation was often muddled in terms of flows and stores within the drainage basin.

Question 8

(a)   Definitions were generally correct, but many did not understand the term 'mist' in **(a)(ii)**.

(b)   The best responses produced excellent detailed diagrams, but some were not clear on the links between short wave radiation, long wave radiation and temperature.

(c)   Pressure belts were widely known, but many drifted into detailed explanations of wind systems and lost focus of the question posed. Seasonality was not clearly understood, and few took the opportunity to discuss monsoon systems in the context of pressure changes.

Question 9

(a)   Marks easily accessible to many candidates, although explanation of heave was often vague.

(b)   Slope stability and instability were not secure in terms of understanding. Explanations were often simplistic, and in this instance many diagrams were unconvincing.

(c)   Weathering is a topic that many candidates are now comfortable with. There were some excellent answers with convincing detail, for both mechanical and chemical weathering. Granite and Limestone are correctly and widely used to illustrate relevant processes.

Section C

Question 10

(a)   Underpopulation is still too frequently confused with sparse population, but evidence offered in **(a)(ii)** suggests that overpopulation is a better understood concept.

(b)   Some very detailed and convincing answers.

(c)   Problems arose in defining 'economic' as a very narrow concept. Other factors were better understood, but the lack of general evaluation often confined candidates to Level 2.

Question 11

Some convincing personal accounts of migration enhanced many answers.

(a)   Many candidates understood forced and voluntary migration, and were able to illustrate these effectively.

(b)   Many answers focused on explanations for internal migration, which was not a requirement of the question.

(c)   Many answers simply concentrated on pull factors, and did little other than identify simple push factors as a way of making an overall assessment.

Question 12

(a)   There was some understanding of the term 'urbanisation', but many discussed why urbanisation is increasing rather than decreasing, as specified in the question.

(b)   The concept of spatial competition was not widely understood, and many simply drifted into the problems associated with living in urban areas, such as congestion and pollution.

(c)   A limited number of excellent case study examples, but many candidates simply made generic generalisations which confined them to Level 1.

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| Paper 9696/13 |
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General Comments

This report is not as comprehensive as normal because of the small number of candidates. However, it is possible to make some observations. The paper proved to be easily accessible to most candidates, resulting in a very satisfactory outcome with a good spread of marks. Excellent marks were achieved by a significant number of candidates from across the geographical range of Centres. Although the discrepancy between the calibre of answers to Physical Geography and Human Geography questions continues, there were signs of some improvement in the Physical Geography answers. However, the imprecision in the use and understanding of Physical Geography concepts continues. Questions on mass movement continue to cause problems; this was seen especially in answers to **Question 9**. Atmosphere and Weather continues to be the least popular option in **Section B** but **Question 2** in **Section A** was quite popular with good marks being achieved. It was still uncommon for all three Physical Geography questions in **Section A** to be answered. The accurate use of local examples continues to impress, especially in answers to the Human Geography questions, although there was a tendency to include examples that were either not relevant or too vague.

Although there is an improvement, many candidates are still not fully appreciating command words such as 'compare', 'overall', 'relationships', 'trend' and many more. Candidates are still explaining when all that is required is description. Also, there were many instances of pure description when explanation was required. Where questions ask for description and explanation, the description component is often ignored with candidates attempting to explain before they have described what they are trying to explain. Some of the questions had several parts and it was quite common for one of the elements to be ignored. This was especially true of answers to **Questions 1 (c)** and **7 (c)**.

Comments in previous reports have stressed the importance of being able to evaluate issues with cogent arguments when answering questions in **Sections B** and **C**. There were again encouraging signs of an improvement in this respect, especially in answers to the Human Geography questions. It is worth repeating that it is very difficult to obtain a mark in Level 3 without some form of evaluation or assessment.

Overall, the paper was completed by most candidates and time did not seem to be a major issue. Very few candidates answered all the questions in **Section A** or more than the one required in **Sections B** and **C**.

Comments on Specific Questions

Section A

Question 1

(a) Virtually all candidates managed to achieve full marks.

(b) This was a follow-on from part **(a)** and most candidates were able to explain the hydrographs in terms of the speed and volume of water reaching a specific point on the river.

(c) There were four components to this question, although description and explanation were often considered together. Explanations with respect to vegetation were more thorough and accurate. Analysis of the role of soils was usually simply in terms of permeable and non-permeable soils, although some candidates did refer to sand and clay to illustrate their answer. Explanations were mainly in terms of infiltration and overland flow. Very few mentioned the role of throughflow, and the effect on base flow was largely ignored. There tended to be an imbalance between flows and stores; stores were often omitted.

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Question 2

(a)   Both parts caused few problems.

(b)   Most were able to state and describe sublimation as the process.

(c)   Some candidates were a little confused as to how they could use Fig. 2 and simply wrote a general answer on the formation of precipitation. However, most used the information in the figure, even if some of the elements were omitted in the explanation. This question was quite a good discriminator in terms of the detail provided in the answers.

Question 3

(a)/(b)   This question caused few problems; **W** was the only feature to cause some confusion.

(c)   It was encouraging to note the explanations for mountain ranges becoming more realistic, incorporating the idea of marine sediments being crushed and folded on top of the continental crust. However, there are still a large number of diagrams which show two continental plates being raised in the air on collision. Some candidates still think that island arcs are formed because of the convergence of an oceanic and continental plate. Diagrams were not required, although most candidates did produce diagrams which helped considerably in the explanations offered.

Question 4

(a)   Most candidates obtained full marks with the anomaly of India being consistently spotted.

(b)   Most candidates produced two relevant reasons but lost a mark by not developing the reason. The emphasis was on less need for children in urban areas and the relationship between emancipation of women and decreasing fertility, prevalent in urban areas.

(c)   Answers were quite well balanced between positive and negative impacts and there were some excellent responses.

Question 5

(a)   Most candidates were able to gain both marks, although a few candidates did not mention the general trend of a decrease with distance, preferring to concentrate on the peaks and troughs.

(b)   Many candidates explained the first peak in terms of moving to the suburbs which might not have been the most appropriate reason. The idea of moving from the city but still within commuting distance was a popular reason for the first peak. Very few recognised the distance-decay idea.

(c)   Economic, political and social reasons were generally offered as explanation. Political barriers, visas, etc. were commonly referred to as well as the financial implications.

Question 6

(a)   The wording of the question confused some candidates, although most were able to describe the main features as well as identifying Nigeria as an anomaly.

(b)   Most answers stressed the better standard of living in urban areas with better health and technology. The main emphasis of the smaller percentage in rural areas was inaccessibility and the cost of providing sanitation for remote communities.

(c)   This was a very accessible question and the push v pull approach was mostly taken. Although sound to good answers were the norm, there was a tendency to emphasise the quantity and range of services rather than the quality.

Section B

Question 7

(a) (i) The only problem was the occasional confusion of throughflow with throughfall.

(ii) The problem in explaining concepts in Physical Geography was seen in answers to this question. Most candidates were able to achieve some marks but many did not provide the precision needed to achieve full marks. There was a little confusion over the term 'recharge'.

(b) This was a very accessible question with some excellent answers. Diagrams tended to be either a systems diagram or a stylised version of a hillside hydrological model. Both approaches were equally acceptable. There was a tendency to concentrate on infiltration and overland flow at the expense of percolation and base flow. Interception, throughfall and stem flow were often well described.

(c) Answers with respect to low flows often lack detail in comparison to other aspects of drainage basin hydrology. The response to lack of precipitation is well understood, but what is less well understood is the role of human activities. There was an emphasis on dams restricting the flow of rivers but little reference to over abstraction of water supplies. The stores aspect of the question received less attention.

Question 8

There were too few answers to be able to provide general comments.

Question 9

(a) (i) There are signs that description of mass movement types and processes is improving. This was true here, although understanding of slides was better than that of flows.

(ii) Generally sound answers were produced with diagrams helping the description.

(b) Most candidates referred, in some form or other, to Peltier's diagram, which was helpful, and there was usually a balance between physical and chemical weathering processes. Most answers were generic but some candidates did use granite and limestone to underpin their accounts. The emphasis should have been on explanation; however, the level of detail was sometimes limited, being just general statements of the role of heat and moisture.

(c) It was encouraging to note the increased detail in answers compared to previous years. The use of relevant examples has also increased. In order to obtain a Level 3 mark, the 'extent to which' component of the question needed answering. This meant a comparison of human activities with natural processes and events. This was often lacking or merely referred to in a simplistic way.

Section C

Question 10

(a) (i) Although candidates understood the term, very few were able to provide a precise definition. Some of the components of the definition were usually missing.

(ii) Good marks were obtained by the majority of candidates.

(b) This was a very accessible question which produced some very good, detailed answers. Most candidates achieved reasonable marks.

(c) Candidates were better able to describe and explain the problems rather than the benefits. This is probably understandable as the problems are more obvious. Because of this, few candidates achieved a Level 3 mark.

Question 11

(a) (i)   The basic idea of intra-urban migration was well understood but with the occasional misinterpretation with inter-urban.

   (ii)   Most candidates were able to provide two good reasons with emphasis being placed on the life-cycle model, even if it was not specifically referred to.

(b)   The emphasis in the answers was on LEDCs with an increase in rural-urban migration as cities and countries develop. As functions develop so does the attractiveness of pull factors to the more developed parts of the country. Some candidates referred to the increasing level of spatial inequality as some areas developed more than others. This was a reasonably accessible question and good marks were often achieved.

(c)   Some candidates struggled with this question, not being sure what government influence meant. However, forced migration as a result of government policies and various migration controls on international migration were often discussed.

Question 12

There were too few answers to be able to provide a comprehensive comment. Candidates had some trouble in providing a meaning for world city.

GEOGRAPHY

General Comments

The paper proved to be easily accessible to most candidates, resulting in a satisfactory outcome with a good spread of marks. Excellent marks were achieved by a significant number of candidates from across the geographical range of Centres. The use of diagrams causes some concern as they tend to be limited in detail and are often inaccurate. An exception to this was diagrams of the various types of breaking waves for **Question 3(a)**. The use of specific examples is encouraging, although in many cases they were somewhat simplistic, such as 'the coast of eastern USA' for **Question 4(b)**.

Overall the paper was completed by most candidates and time did not seem to be a major issue. Very few candidates answered more questions than was required.

Comments on Specific Questions

Tropical environments

Question 1

(a)   Most candidates provided a description rather than an explanation. The general differences between the climates were generally understood but the seasonal differences in the climate of the seasonally humid environments were often ignored. The variation within the seasonally humid environment, from the humid tropics to semi-arid areas, was generally ignored. Explanations tended to be very simplistic with only limited reference to the movement of the Inter Tropical Convergence Zone.

(b)   The tropical rainforest ecosystem was the most popular choice. Some candidates recognised that the nature of the climate and the soils were major factors limiting exploitation but the analysis was often limited. Many recognised that when the vegetation was removed then the nutrient cycle would be disrupted but were unable to provide the detail necessary for a good answer. The emphasis was on deforestation with the possibility of soil erosion and sediment reaching river channels. Ways to overcome these problems tended to be limited to re-afforestation, selective logging and various conservation policies. However, the examples tended to be very generic with little geographical input.

There were many fewer answers examining the problems of exploitation of savanna ecosystems. Seasonal drought and the infertility of soils were well understood with the formation of laterite cited as a major problem. The length of time it takes vegetation to recover from deforestation and overgrazing was also noted. Examples of where these problems have been overcome were as basic as the solutions offered for the tropical rainforest ecosystem. Some candidates offered examples which were more relevant to semi-arid environments, though it must be accepted that the dividing line between savanna lands and semi-arid areas is an imprecise one.

Question 2

(a)   There was a generally satisfactory response to the question with most of the elements in the figure noted and analysed. Perhaps there was too much emphasis on description rather than explanation, but description was an integral part of the explanation. There was a greater amount of detail in explaining the relationships between vegetation structure and soil with climatic characteristics being relevant here. The high value of biomass was noted but with little explanation apart from a brief mention of importance of the heat and moisture characteristics of the climatic regime.

(b)   In the past, a question on tropical karst would receive detailed accounts of karst landscapes more applicable to temperate environments. However, recently there have been encouraging instances of tropical karst landscapes (cockpit and cone) being more familiar to candidates. The response to this question continued this trend. Most candidates were aware of cockpit and cone karst and some were able to explain their nature and formation in some detail. However, quite often the descriptions were not precise enough and the explanations a little weak, but most answers were considerably better than in previous years. Diagrams, if used, were generally basic and lacking in detail and accuracy.

Coastal environments

Question 3

(a)   There were two parts to this question. Unfortunately, some candidates simply stated that waves are generated by the wind without explaining the process in detail. Friction between wind and sea surface was mentioned but the importance of wind strength and fetch was ignored by many. Some candidates believe that the potential fetch for the British Isles stretches all the way to the Falkland Islands. Description of the different types of waves can be confusing as a result of the many ways that waves can be classified; constructive-destructive, storm waves and swell waves, high energy and low energy. Most candidates opted for constructive and destructive and mostly demonstrated good understanding of wave length, wave height and frequency. However, there is still confusion over the steepness of the beaches associated with each wave type. Constructive waves tend to build up the beach producing steeper profiles, whereas destructive waves drag material down the beach producing a gentle beach. Some candidates did write about cut and fill beaches as a result of seasonal changes in the dominant wave type.

(b)   There was a marked discrepancy in the quality of the answers. Those candidates who understood the workings of sediment cells produced excellent examples with good geographical examples. The 11 major sediment cycles around the coast of the British Isles were often used as examples. Candidates who knew little about sediment cells clearly struggled with both parts of the question. If knowledge of the operation of sediment cells was good, then the second part of the question was quite straightforward, with disruption by human activity prominent. This led to high marks being awarded.

Question 4

(a)   Candidates seem to find the analysis of photographs of physical landforms difficult. There seems to be a lack of understanding about the care and attention needed to be able to identify the main features. Photograph A was a classic example. Most candidates spotted the stack at the end of the headland but ignored everything else in the photograph. The nature of the cliffs was only minimally considered, the horizontal jointing was very rarely mentioned and the contrast in forms of the upper part and low part of the cliffs not noticed. The identification of the stack led to a very simplistic sequence with little reference to processes or rock structure. If processes were mentioned, they were not explained nor their impact on the landforms discussed. Very few candidates attempted a diagram of the landforms shown; most produced basic sequences of cave to arch to stack, or the formation of headlands and bays. Answers to questions of this nature are always quite poor and it seems little progress has been made in the identification of features from photographs.

(b)   Some excellent examples of coasts where management problems existed were used. The Holderness coast of eastern England was prominent amongst these with good geographical knowledge exhibited. It was good to see examples from around the world, such as the coast of West Africa, Florida, Zanzibar and many more. Candidates with such knowledge and understanding produced good examples. Unfortunately, many candidates simply produced generic examples of hard and soft engineering approaches to management without reference to a specific stretch of coast. Some candidates did not achieve their potential by minimal evaluation of the success or otherwise of the schemes they discussed.

Hazardous environments

Question 5

(a) There were some excellent answers to this question, especially with respect to avalanches. Some candidates demonstrated knowledge and understanding of the nature of snow metamorphosis, the development of hoar frost areas with minimal stability and the impact of fresh snow, far beyond what could be expected. The differentiation between powder snow and slab/wet avalanches was also excellent. Unfortunately, this level of understanding was lacking in explanations of landslides. Most candidates realised that water was important but were not able to relate water to the processes that might lead to instability. Quite often the role of water was simply to increase the weight of material on the slope. Undercutting by human activities (rarely by natural processes) was often cited but how it affected landslides was rarely discussed. Interestingly, the recent Nepalese earthquake was mentioned with respect to vibrations causing landslides. The hazardous nature of both processes was well described.

(b) This question asked for an interesting comparison of hazards. The avalanche consideration followed logically from part **(a)** and some of the necessary detail had already been covered. Most candidates were aware of the hazardous effects of tropical storm surges but many did not enumerate the various hazards associated with them. The excellent knowledge of avalanches, shown in part **(a)**, continued with detailed discussion of wind baffles, snow fences, artificial explosions, land zoning, etc. Consideration of tropical storm surges was mostly in terms of monitoring, prediction and hard engineering procedures. The flooding of New Orleans by Hurricane Katrina was often used as an example. The most interesting comparison of the two processes was that tropical storm surges had the potential to affect larger areas than avalanches.

Question 6

(a) The response to this question was generally weak. There was great confusion over the nature of pyroclastic flows. Although most candidates understood their hazardous potential, few understood their nature in detail. Many confused them with lahars. Also, lava was often confused with lahars. The nature of lava was often confused. Candidates were more familiar with the nature and hazardous effect of ash clouds, using the eruption of Eyjafjallajokull in Iceland as an example. Some candidates overstressed the significance of acid rain.

(b) There were many excellent answers to this part of the question. Knowledge of the respective locations of earthquakes and volcanoes was extensive, although the lack of volcanic activity at continental plate collision boundaries was often forgotten. Knowledge of predictive techniques was also substantial in many cases with excellent examples to justify the argument. As a contrast, there were some candidates whose knowledge of plate boundaries, earthquakes and volcanoes was minimal.

Arid and semi-arid environments

Question 7

(a) This was a straightforward question and the main weathering processes were well known. The only discrepancy was in the level of detail, and many candidates ignored the second part of the question which referred to the effects on rocks. Insolation weathering was described very competently but with an emphasis on exfoliation rather than granular disintegration. There was a time when granular weathering as a result of the different heat capacities of different minerals, especially with respect to granite, was frequently described and explained. However, these ideas were generally absent from answers. Salt crystal growth was also commonly described, unfortunately with a lack of detail. Accounts mentioned water entering joints in the rock, evaporating, then leading to pressure on the rock. Salt crystal growth will only be effective if the water enters the pores of the rock and becomes trapped. This is why sandstones are especially affected by salt crystal growth.

(b) There were excellent answers to this question. The operation of the respective processes was well understood. However, the 'extent to which' was often ignored, thus the comprehensive assessment needed for a mark in Level 3 was rarely achieved.

Question 8

(a)   Answers varied in quality from the excellent to the very poor. In the latter cases, there was limited description of the locations of semi-arid climates and minimal explanation. This could be contrasted with answers providing a thorough description of the distribution with a detailed explanation of semi-arid climates using specific locations as examples.

(b)   Most were able to define desertification as the degradation of the environment and most understood that deforestation, overgrazing and overcultivation lead to land degradation and thus desertification. The fragility of semi-arid environments as a function of lack of rainfall and poor soils was noted by many. Thus, the first part of the question received a good response. The same could not be said for the second part. Few candidates knew specific examples in sufficient detail to provide a valid assessment of attempts to overcome the effects of desertification. Many simply reversed the processes of degradation, thus arguing for decreased deforestation, afforestation and restrictions on grazing with no specific examples to substantiate their points.

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General Comments

The overall quality of responses to this paper matched that of recent past examinations and many candidates displayed a good level of understanding of the processes involved in Physical Geography. In many cases, the responses demonstrated a wide knowledge of the topic chosen and a secure understanding of the effects of physical processes on specific landforms. Candidates were often keen to use case studies and exemplars to illustrate their ideas and the better answers integrated specific detail into their arguments. In a small minority of cases, candidates included details of specific examples which were largely unrelated to the wording of the question.

It was pleasing to see an increasing number of candidates that are willing to use sketch maps and diagrams. Many used these illustrations to increase the clarity and quality of their responses. With greater and more effective labelling and annotation combined with reference in the text, future candidates can elevate their answers to a higher level. This was most clearly seen with reference to **Questions 4(b)** and **8(a)** where the better answers incorporated the illustrative material with their text.

The paper contained an insert with a variety of stimulus materials. Good responses made reference to the figures in order to illustrate significant geographical patterns and trends, although weaker answers tended to merely describe the material or make very little use of it.

Overall, the Examiners were impressed with the standards of written English and the time management of candidates. Most responses were well planned and there were very few infringements of the rubric.

Comments on Specific Questions

Tropical environments

Question 1

(a) The vast majority of candidates used Gersmehl diagrams as the basis for their answer. The better responses related the diagram specifically to both the tropical rainforest and savanna ecosystems. Many answers drew reasonably accurate diagrams of nutrient cycling, with appropriate scales of stores and transfers, especially in relation to the TRF. Many were less secure with illustrations of nutrient cycling in the savanna, where the relative sizes of the stores were not often discriminated. Some of the better answers included a sustained reference to their diagrams and a detailed comparison of the significant differences between the two ecosystems.

(b) Successful answers focused on how vegetation and soils had been affected rather than mainly describing, often in detail, the characteristics of the human activities affecting the TRF or savanna ecosystem. Several good responses established appropriate linkages within the nutrient cycle and clearly explained the consequences of specific interruption. Stronger responses put their ideas within a specific geographical location and used their detailed understanding of human activities to explain how vegetation and soils had been degraded and occasionally conserved.

Question 2

(a) The better responses took the opportunity to identify the main climatic patterns shown in the climate data, and then explained them in relation to the movement of the ICTZ. Having explained the seasonality of the climate, thorough answers made accurate reference to the vegetation shown in Photograph A and related it to the climate previously discussed. Candidates would benefit from

frequent and accurate reference to the illustrative material provided, identifying specific climatic values and types of vegetation.

(b) Despite a tendency to focus mainly on a description of some relevant granite landforms, many stronger responses attempted to explain their formation using the processes of chemical and physical weathering. The use of clear and well annotated diagrams was especially helpful. At the highest level, the structure and composition of granite was accurately discussed and evaluated whilst explaining the formation of inselbergs, ruwares, tors, koppies and corestones.

Coastal environments

Question 3

(a) Some descriptions were very good at identifying the main sources of sediments, although the significance of rivers in coastal environments was often underplayed. Longshore drift was adequately described in the main, although an explanation of the direction and angle of swash and backwash was often lacking in clarity and accuracy. The best responses related sediment movement and deposition to wave energy and used diagrams to illustrate the processes.

(b) Successful approaches placed the interruption of sediment supply at the heart of the response. Candidates concentrated on a variety of human activities along the coast, but the quality of responses depended largely on how this was related to areas of coastal deposition. The techniques of coastal protection were largely known and understood but not always related to depositional coastlines. Only a small proportion of responses evaluated the relative success of specific protection schemes.

Question 4

(a) The vast majority of candidates used Fig. 2 to describe methods of both hard and soft engineering. The better answers explained how each method reduced coastal erosion through the creation of barriers and the diminution of wave energy.

(b) This was a wide ranging question which gave candidates the opportunity to make effective use of a case study to illustrate and elaborate on their ideas. Candidates were keen to identify and describe the various processes of sub-aerial and marine erosion producing a range of landforms such as cliffs, wave cut platforms, caves, arches, stacks, and stumps. The better responses delivered a clear evaluation of the significance of these processes in relation to other factors such as rock type and structure.

Hazardous environments

Question 5

(a) In previous reports, the importance of distinguishing between description and explanation has been highlighted. In this question, many responses did not recognise the important differences. Many answers focused on the main characteristics of tsunami and tropical storms, but the most effective responses clearly indicated how they developed over time and in specific locations. Here was another opportunity for candidates to integrate specific events and examples into their response and the best answers did this very effectively. Candidates showed a sound knowledge of several events such as Hurricane Katrina and the Boxing Day tsunami, but the understanding of how they developed varied significantly.

(b) Candidates showed that they are increasingly aware of the generally hazardous impact of tsunami and tropical storms. Once again a variety of exemplars were used in many answers, but not all concentrated on how and why they proved to be so hazardous to the specific coastal areas that were affected. Weaker answers often did not address the nature or effectiveness of methods of hazard reduction. However, those candidates with a secure understanding of these hazards often used specific examples to evaluate the impact of the events in the light of attempts to reduce the worst effects.

Question 6

(a)   Fig. 3 allowed most candidates to demonstrate their knowledge of erupted materials. Most responses contained the main characteristics of erupted materials, although some tended to dwell too much on simply describing Fig. 3. The better answers indicated a clear understanding of the specific hazards created by each element indicated in the key, although some underestimated the devastation created by pyroclastic flows. It was pleasing to note the use of specific examples of volcanic eruptions which produced lahars and tephra.

(b)   There was a wide range in the quality of answers to this question. Some were very simplistic and often inaccurate, whilst others included precise detail in order to illustrate a very secure understanding of the causes of earthquakes in different geographical locations. Most candidates correctly concluded that earthquakes were more difficult to manage than volcanoes, but, again, there was a wide range in the quality of evidence used to support this conclusion. The very best responses considered recent scientific monitoring techniques and assessed their usefulness in relation to recent earthquakes and volcanic eruptions.

Arid and semi-arid environments

Question 7

(a)   This topic required candidates to skilfully apply their understanding of arid and semi-arid environments. Although some responses dealt with the two climates separately, the vast majority described the similarities and differences clearly and effectively by using specific climatic data as a means of comparison. The explanations were more variable, but the stronger candidates were able to make clear reference to the location of arid and semi-arid areas in relation to the ITCZ, subtropical high pressure systems, continentality, rain shadow locations and ocean currents.

(b)   The focus of this question was vegetation, yet some poorer responses did not recognise this. The central point was the adaptation of vegetation to a lack of moisture, and the better answers made reference to xerophytic, phreatophytic, and halophytic elements. The more comprehensive answers considered the diversity of vegetation and the specific adaptations of named plants.

Question 8

(a)   Photograph B proved to be a demanding resource to analyse. However, most candidates managed to recognise some elements of the landforms shown, such as the infilled wadi, gullies and the boulder strewn slopes. Generally, candidates offered only tentative explanations for the development of these features. In some responses, vague and general description masked the candidate's uncertainty. The better explanations considered both the role of water and wind action as well as present and past climates.

(b)   Although a small number of candidates considered sustainability in both climate types, most showed a sound knowledge of the problems and solutions of their chosen climate in a suitable geographical location. The problems of aridity and the establishment of irrigation provided the focus for the most successful responses with the very best answers considering the future potential developments related to solar energy and water desalinisation along with greenhouse and hydroponic cultivation.

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Paper 9696/23

Paper 2 Advanced Physical Options

General Comments

The number of candidates who took this component is sufficiently small that generalisation is difficult. However, the general response was very good with some especially good answers to **Question 3** and **Question 6**.

Comments on Specific Questions

Tropical environments

Questions 1 and 2

There were no responses to these questions.

Coastal environments

Question 3

(a) There was mostly an excellent response to this question. The conditions for coral growth were well known and the detail for the explanation of atoll formation was excellent. All the main theories for atoll formation were described in a very authoritative manner.

(b) The knowledge and understanding shown in answers to part **(a)** were continued in answers to this part. Answers were detailed and accurate with good diagrams. The only slight downside was that the assessment of 'to what extent' was not as thorough as it could have been.

Question 4

(a) In comparison to answers to **Question 3**, this question received a poorer response. The relationship between wave type and longshore drift was examined in a minimal way. The role of longshore drift in creating spits was covered well, but sand dunes were sometimes ignored or given little attention.

(b) Answers to this part were better than for part **(a)** with some good geographical examples of management problems along a stretch of coast. Evaluation of solutions was less well examined.

Hazardous environments

Question 5

This was the least popular question in this section and the quality of the answers was less than those for **Question 6**.

(a) Candidates were able to describe and explain two different types of volcanic eruption but with varying detail. Most described and explained the differences between explosive and effusive eruptions with the occasional reference to specific examples such as Plinian, Hawaiian, etc.

(b) Most candidates knew what tsunami are and were able to explain them with reference to earthquakes on the sea bed. Their hazardous nature was examined with respect to the Boxing Day 2004 and recent Japanese tsunami. The reduction of impacts was discussed largely with respect to the different abilities of LEDCs and MEDCs to cope with these hazards.

Question 6

This question received an excellent response with many high marks being awarded.

(a)   Knowledge of tornadoes, their nature and formation, was excellent. The answers were often bolstered by detailed and informative diagrams.

(b)   Questions on mass movement quite often pose problems. However, this was not so in this instance. This may well have been because of the nature of the photograph which provided much that could be used by candidates. Description of the mass movement was generally good, although the explanation tended to focus on human activities rather than natural processes.

Arid and semi-arid environments

Question 7

There were no responses to this question.

Question 8

There were too few answers to offer detailed comments. Answers to part **(a)** were generally sound even if a little lacking in detail. The response to part **(b)** was limited by a lack of precise geographical examples.

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Key Messages

- Selecting and applying knowledge, directing it to the question set, are creditable skills.
- Integrating examples and/or case study content can transform sound generic or generalised responses into high level ones.
- Planning responses, not only the essays in parts **(b)**, is a good examination technique, saving time, building confidence and enhancing response quality.

General Comments

Candidate performance on this paper in this examination series reflected that in previous ones with many familiar attributes. One was the dominance of two of the options, *Environmental management* and *Global interdependence*, and another, the predominance of responses to **Question 3** on energy and **Question 6** on tourism. *Production, location and change* and **Question 1** came a strong third in Centres outside Europe. *Economic transition* continues to grow in significance as an option, with the two questions of approximately equal popularity this series.

As usual, the insert contained four resources of different styles to be used in different ways by candidates. Fig. 1 was a rare example of the use of a cartoon about land tenure. Table 1 was a table about percentage total energy use in some MEDCs in Europe. Fig. 2 was a bar graph about tourism in six countries in Asia Pacific and Fig. 3 a composite of information about the car industry in China. In terms of skills, Fig. 1 was a stimulus resource and although it helped with answering **Question 1(a)(i)**, it did not require interpreting in order to answer the question. Although one was a table and one a graph, both the questions, and the skills required for them, were similar for Table 1 and Fig. 2. Lower-skilled responses either simply took the highest and lowest in each case or rewrote the resource simply in words without addressing the variations in the data sufficiently explicitly. The use of Fig. 3 containing some text was prone to simple lifting, and many responses lacked appropriate evidence of candidates' own input.

Examiners commented on the number of candidates who started one question, only to get part way through it and abandon it in favour of another. One essential element of examination technique is to read the entire question before starting it and to consider what each part involves. Doing this for both questions in an option means that a secure choice can be made between them. This both builds confidence during the examination and avoids wasting time.

A small proportion of candidates used diagrams and sketch maps to enhance their responses. These were seen, for example, in relation to the definitions in parts **(a)** of **Questions 2** and **8**, and as locators for case studies in parts **(b)** of **Questions 3** and **6**.

Comments on Specific Questions

Production, location and change

Question 1

Overall, material for part **(b)** was more secure than for part **(a)**. Few candidates understood land tenure well.

(a) (i)   Land tenure is the way that farmers hold or own land. A variety of types of tenure exist such as owner occupiers, communal systems or tenancy. Many candidates equated land tenure wrongly with a single type, which then narrowed the response to **(ii)** as a consequence.

    (ii)   Few candidates picked up on the key element of 'land tenure systems' and wrote about one only, usually tenancy or the fragmentation of holdings by inheritance. Most responses were unbalanced, being more about the environment than the farmers, and the 'farmers' element was completely missing from some. Good work was seen, for example explaining how the need to pay rent makes farmers maximise production, leading to overcultivation and soil degradation and to anxiety and indebtedness for them and their families. A few responses contrasted this scenario with a communal system and 'the tragedy of the commons' in terms of lack of environmental stewardship and shared decision-making leaving no one responsible.

(b)   Effective responses deconstructed this question into its constituent elements and addressed each one. There were three elements: the context of increasing agricultural production, the success of specific attempts, and the assessment of the role of economic factors (and therefore of other factors) in this. Middle range responses tended to be narrative or explanatory of agricultural change with some small link made to the question, usually in the opening and closing paragraphs. Economic factors, such as land, labour and capital, could appear in the narrative without actually being identified clearly as the economic factors which the question was about. At the lower end, responses could be very brief, fragmentary or about agriculture quite generally without focussing on increasing production, and with little or no assessment (one of the generic descriptors for Level 1 responses).

    Some good use was made of the Green Revolution in Asia and attempts in the candidates' home countries. In other responses, place detail was in name only, "e.g. India". A well developed understanding of economic factors characterised the best responses, for example in terms of finance, capitalisation, loans and farmers' debt; or the profit motive itself and government assistance with ensuring crop quality and marketing, for example through a government-run board. Of the 'other factors' involved, physical factors were the most evident in responses, including climate, weather hazards, soil quality and issues of accessibility and remoteness. Many integrated the idea of the key role of farmers' attitudes, traditionalism and resistance to change.

Question 2

Responses to **(a)** tended to be of better quality than those to **(b)**, where knowledge recall of learned material about transport tended to dominate the writing.

(a) (i)   Economies of scale were best described as unit costs of production decreasing as the volume of production increases. Economies of scale can be internal, within an industry, or external, involving a number of companies. Companies may choose a location or relocate to enable either or both types of economies of scale, for example by rationalisation for a single company, or agglomeration for several companies. Some candidates knew the term satisfactorily, although the link to location was not made.

    (ii)   The concept of functional linkages was better described and linked to location than economies of scale in most cases. The typology of linkages was mostly secure and many recognised that there could be little effect on location because the linkages are *functional* rather than physical.

(b)   The majority of responses showed knowledge of transport and understanding of its locational significance, especially through the classic examples of weight-gaining and weight-losing products. Some provided a broader perspective combining this with other factors such as labour or government influence. This could produce an essay which was rather shallow and, in effect, a developed list of factors. Overall, response quality would have been enhanced in two ways: by considering one or more specific examples of manufacturing and related service industries, and by demonstrating contemporary realism about transport in relation to that context. One Examiner reported that "very few candidates are aware of the importance of transport in the modern world, where a globalised economy allows industry to locate almost anywhere". This could include the reality of relatively low transport costs in the 21st century and the massive trade in international transfers by container, for example. Conversely, contemporary reality may include logistical challenges in some LEDC contexts in relation to road quality, vehicle quality, fuel availability and the security of transport.

Environmental management

Question 3

This was one of the two most frequently chosen questions on the paper. All three elements differentiated responses effectively: testing data skills (AO3) in **(a)(i)**, understanding (AO2) in **(a)(ii)** and all four assessment objectives in **(b)**.

(a) (i) The best responses focused on the key word 'variations' in the question and outlined these for each of the three columns, identifying any patterns. This was more effective than taking Table 1 row by row which tended to lead to separate descriptions, country by country. An approach taking the highest and lowest for each energy type was marked using a maximum of 3 marks, as it was a restricted view of the data set.

(ii) The most important thing to report here is that the intention of the question was that candidates should use their understanding of energy supply and the energy mix for countries to answer this, with no knowledge of energy in any of the countries expected as it is not specified in the syllabus. Many candidates clearly believed that they had to know something about Poland or Iceland, which was not the case. A fully effective response could be developed based on factors such as cost, resource endowment, government policy and the environment. As with **(i)**, a country by country approach performed less well than a thematic overview as it tended to lead to shallowness and to repetition.

(b) The full range of answer quality was seen. The most noticeable characteristic of responses was that many candidates struggled to use their case study of an energy scheme in a manner other than that in which it had been learned, in this case with the necessary focus on groups and views. Examiners saw many examples of factual recall of the chosen scheme, often the Three Gorges Dam in China, without the necessary selection and application of material to address this specific question. Many essays told the story of the scheme and evaluated its success in general terms, both of which were of marginal relevance to the actual question set.

Many good and some outstanding highly-skilled responses were seen outlining the views of groups such as local residents, government, business and environmentalists. In most cases the assessment was that it was the government's view which prevailed over all others and that its success needed to be judged in terms of the priorities of each different group. For example, displaced people who had lost home and land and their traditional inheritance would judge 'success' differently from those who had made money from the scheme. Some pointed out, rightly, that ideas of 'success' may also vary over time with, for example, the true environmental impact of some schemes only becoming apparent after a number of years. In some responses, views were simply seen as a result of the scheme rather than as valid voices during its development. Nearly all candidates identified a suitable scheme to assess. In cases where the response was at the wrong scale, that of an energy strategy, the usual maximum of 10 marks was used.

Question 4

(a) Responses required a good understanding of demand as a concept and discipline to avoid supply, which the question did not ask about. Many candidates confused supply issues, such as the amount of precipitation or proximity to a river, with demand. The definition of demand is how much (quantity) of a product or service is desired by consumers. It is not the same as the need for water, so, for example, demand in hot desert areas is seldom high, although the need for water may be. The best responses explained how demand comprises that from different sectors: agriculture, manufacturing, services and domestic. They also explained how the needs of these sectors vary between LEDCs and MEDCs, between rural and urban areas and, maybe over time, for example with population growth or economic development making standard of living rise and manufacturing increase.

Some good knowledge of the variation in domestic demand was demonstrated, for example where affluent households use washing machines and dishwashers, water their gardens, wash their cars, and encourage each family member to take a bath or a shower daily. This could be contrasted with settlements which do not have mains water supply, where all water is carried by people or animals or pumped by hand, and where the poor live relatively simple lives with an associated lower domestic demand for water. The best integrated actual specific located examples and data (such as percentages) rather than generic examples.

(b) Some well developed responses focused on 'difficulties' and demonstrating good management understanding were seen on air quality and on water quality. Indicators of response quality included: a multi-dimensional approach (physical, social, economic and political); the integration of detailed examples; an appreciation of scale, from local accidents to transborder issues or the global as both water and air flow. Some candidates wrote convincingly about the complexity and dynamism of the hydrological environment and the atmospheric environment, and the conflicting motives and priorities of the different groups of people involved.

As part of the assessment some chose, appropriately, to consider some of the relevant 'good news', for example where an initiative has succeeded in improving water quality or air quality through negotiation, determination and the availability of sufficient finance. More frequently, the assessments comprised the difficulties with an emphasis on ignorance, corruption and a lack of care or will in many contexts. Some candidates misinterpreted the **either / or** structure of the question and answered about both water quality and air quality when they should have chosen one. In such instances, Examiners mark both separately and credit the candidate with the better of the two marks.

Global interdependence

Question 5

Of the question's three parts, it was **(a)(ii)** which candidates seemed to find the most difficult, perhaps because of its unfamiliar demand and the need to apply their knowledge and understanding in order to answer it.

(a) (i) Most candidates identified satisfactorily one way that Fair Trade can help producers, developing the point to achieve two marks. Fewer identified a second way effectively. Knowledge of fairer pricing by reducing or avoiding the share taken by middlemen was secure. Only a few candidates applied this, for example in terms of better quality of life for producers and their families; or added to it, for example in terms of the training provided to develop agricultural and business skills. Some of the best responses used specific examples of Fair Trade initiatives in named locations, for example involving cocoa in Ghana. For this case study, see http://www.fairtrade.org.uk/en/farmers-and-workers/cocoa/kuapa-kokoo

(ii) Responses about LEDCs as net exporters of primary products were satisfactory; reasoning as to why some LEDCs have become net importers was less robust, often overemphasising catastrophe and hazards and overlooking structural changes in demand as a consequence of population growth, the increase in affluence and the changing nature of the global economy. Both elements, of export and import, were needed to achieve more than 4 marks of the 6 available. Some candidates interpreted 'agricultural commodities' as meaning food only, when it includes other agricultural products such as raw materials, for example, cotton, and feed for livestock.

(b) This open question required no particular opinion from candidates who were free to answer in the manner they chose based on the evidence and understanding they had of debt reduction. The majority of responses demonstrated general knowledge about countries' debt and provided an opinion, often simply stating agreement or disagreement with the opinion in the question. Some weaker responses did not differentiate debt from aid effectively. Better quality responses in Level 2 tended to look at the outcomes of two or more specific attempts to reduce debt, such as the HIPC (Highly Indebted Poor Countries) initiative, launched in 1996 by the IMF and the World Bank. Some outstanding essays were seen which built up diverse evidence of attempts in named countries, were carefully focused on the idea of causing problems or solving problems, and provided an extended and perceptive assessment. Some good use was made of instances where debt relief had worked well, which helped provide a more balanced assessment. Up-to-date material relevant to international debt and its reduction can be found on a number of websites, such as that of ONE: see http://www.one.org/international/issues/debt-cancellation/

Question 6

The unfamiliar demands in **(a)** and the idea of 'real benefits' in **(b)** made this a challenging question. A considerable number of candidates wrote for **(b)** what they had revised and/or hoped for, about the life cycle model of tourism, with varying degrees of success in terms of linking it to the question's 'real benefits'.

(a) (i) Most candidates showed the basic skills necessary to read the bar graph, for example to identify tourism's significance in Vanuatu. Fewer directed the description to 'the varying importance of tourism' successfully as this required analysis, synthesis and accurate data support. Some used the MEDC, NIC and LEDC ascriptions on the *y* axis well, noting some patterns and some anomalies. Many missed the fact that Australia's share of tourism was greater than Indonesia's. As the data was static, i.e. a snapshot from 2012, the use of expressions such as 'trend' and 'increasing' was incorrect.

(ii) A number of different reasons were valid and could be developed. One of the most effective was that of stage or level of economic development and the relative importance of other industrial sectors, as shown by the Clark Fisher model. Another line of reasoning considered how LEDCs can make the most of their resource endowment by developing tourism through government policy and foreign investment by airlines, travel companies, etc., leading to high GDP and employment, with other policy and investment priorities in NICs and MEDCs. As in **Question 3(a)(ii)**, no knowledge of any of the six named countries was expected, or necessary, for a full response.

(b) Deconstructing this question shows that it had four key elements: tourist destination(s), real benefits (rather than simply 'benefits'), society, and economy. Some candidates used one destination in detail; others used a second destination to introduce new ideas and provide some contrast, such as between a mass tourism destination and ecotourism. Some weaker responses used more than one tourist destination, writing about the same costs and benefits in each. This approach demonstrated further knowledge without enhancing the assessment.

One element in the syllabus which was not found in the question was that of the environment. Many candidates, even those producing high quality responses, included the environment anyway in their essays. Examiners could only credit content about the tourist destination's environments if it was linked meaningfully either to society, for example in relation to the effect of restricted access to beaches on the lives of local people, or to economy, such as the negative effect of pollution from tourism on fishermen, or the financial cost of clean-up and remedial measures.

Most responses showed some sense of judgement about tourism, expressed in terms of advantages and disadvantages or cost/benefit. Fewer addressed the further element of judgement about <u>real</u> benefit at all. The best assessments weighed supposed benefits in a detailed way. For example, tourism is credited with helping to reduce unemployment by providing a large number of jobs, both directly and indirectly. The more critically analytical responses observed that these jobs may be low paid, menial and seasonal and that they may involve poor working conditions and separation of families, with medium to higher order jobs in management and leadership being filled by the already privileged members of society or by foreign or expatriate workers. This kind of analysis, applied to other characteristics of the tourist destination(s), provided a high quality response. Whilst not necessary, some skilled use was made of conceptual frameworks such as Doxey's 'Irridex', and a few candidates made carefully selective use of aspects of the life cycle model, showing how real benefits can be judged to shift over time in its different stages.

Economic transition

Question 7

(a) The key to an effective answer was to make good use of Fig. 3 and the information it contained to describe the growth of the car industry in China (of which previous knowledge was not required) and as a foundation for the associated explanation, without being limited to it. Of these two elements, it was the description that was weaker. Some candidates launched straight into explanation, ignoring the descriptive demand completely, and so limited the number of marks they could achieve. The best explanations were framed within a secure understanding of the global economy, of world development and the emergence of the BRIC countries, and of the character of TNCs in terms of profit maximisation, cost minimisation and market penetration. Weaker responses lifted material from Fig. 3 without 'own input' and were awarded a maximum of 4 marks.

(b)   Few candidates had a sufficiently global perspective or a 'big picture' approach to address this question effectively. Some narrowed it to make it answerable, for example by considering one or two measures of social wellbeing, such as literacy or quality of life, and the same for economic wellbeing, such as employment or GDP per person, and what they demonstrate globally, before considering the complex web of causation. Others took social and economic wellbeing together, which was also valid. Only a few candidates provided a clear assessment of which causes they considered to be the most important. Amongst these the colonisers and the colonised, modernisation, and governance issues such as the presence of corruption, financial (mis)management and political stability or instability, were articulated notably well.

Question 8

(a) (i)   This material was handled well and the concept of core areas was understood. Work about the growth of core areas was better than work about their dominance, with the second element not found at all in the responses of some candidates.

    (ii)   The term *spread effects* yielded many correct and a few totally mistaken answers. The idea of spatial spread was necessary, from the core to the periphery, as economic development spills over in a spontaneous or in a planned way, through industrial relocation, development of infrastructure, etc.

(b)   The full range of response quality was seen. At the upper end, some excellent work was seen considering aspects of both social development and economic development, carefully focused on difficulties in different dimensions (physical, social, economic, political and, perhaps, historical) at different spatial scales and on different time scales. Some very good use of detailed and specific examples was made, for example in relation to failed schemes and initiatives, marginalised or minority groups and entrenched cultural characteristics, such as traditional attitudes to women or caste in India.

    There was also some excellent use of a single country, which allowed for some depth and made a potentially large question more manageable. Whilst at the lower end of the spectrum of achievement, writing tended to be about everything that was 'bad' in a rudimentary way, others made judicious use of hazardous events, catastrophes and unforeseen events, from terrorism to severe earthquakes and their aftermath. The very best developed a general argument and overall assessment with a case by case, or theme by theme, approach to difficulty. Some candidates interpreted this as, or wanted it to be, a question about regional disparities in development, which is part of the content of this option. Such responses tended to be of limited relevance as a consequence, as seen in the first Key Message at the beginning of this report.

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Key Messages

- The importance of addressing the actual question set, rather than demonstrating knowledge in the subject area. Candidates need to be able to deconstruct a question and address each element with some balance. This is assisted by planning a response, and fortunately there is more evidence of this process being carried out.

- Certain commands – doing as the question says – need to be followed, such as 'Using examples' or 'With reference to **one** country'.

- The use of examples, support and evidence, with specificity, which enables candidates to demonstrate the knowledge that is required to lift a response from generality to Geography. Responses without exemplification – even where not specifically requested – will usually have a maximum of 6/10 in parts **(a)** and remain in Level 1 for parts **(b)**.

General Comments

Of the four options, **Environmental management** and **Global interdependence** remain the most popular with **Economic transition** the least popular. Within **Production, location and change,** agriculture is proving more popular than industry and there is evidence of candidates finding the agriculture question just as straightforward as any other question. The best marks do not always correlate with the most popular choices of questions.

The resources in the insert were generally interpreted well where candidates noticed the focus of the question. **Question 1(a)(i)** was well done by most candidates, who were able to use the photograph to describe the inputs into the agricultural system. Centres could consider the language to be used for describing images, incorporating locational terms such as foreground, background, centre, left, right, etc. In cases where the resource is referred to in a part **(ii)** question, candidates should still make reference to the figure; however, the part **(ii)** might not always require this. In **Question 4(a)** there were encouraging signs of candidates being able to pick out patterns from a world map, just as in **Question 8(a)** some were able to follow the demand to describe the 'differences'. In both of these questions, some candidates took a laborious approach describing in detail every continent, each category in the key or each bar and sub-category of the graph. Teachers are encouraged to use as wide a variety of resources as possible 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 (of sustainable tourism), which for many candidates will not have been seen before.

The vast majority of candidates provided two full responses in satisfactory to very good English. There was little evidence of candidates making rubric errors or using note form for part **(b)** responses.

Comments on Specific Questions

Production, location and change

Question 1

(a) (i)   Most candidates were able to describe inputs focusing upon the centre of the photograph, such as labour, capital and level of technology, i.e. human inputs, but were equally rewarded with comment about physical inputs such as the sunlight, water or addition of manure from the oxen to the soil. Few noted the flat nature of the fields and their step-like arrangement. Responses scoring well

clearly referred to the photograph, located the inputs, with comments such as 'in the foreground/background' and/or were able to discriminate with comments such as 'main input' or 'small input'.

(ii) Better responses referred to the photograph, and could explain how changes to the system would lead to increased production. References to mechanisation were common, along with higher yielding varieties of seeds, increased use of irrigation and the use of chemical inputs. Differentiation of response quality was seen with more basic comments such as 'better', 'more' inputs or higher level comments, which linked the suggestion to increased production by reference to efficiency, quantity or quality of output. Comments on extensification or changes from subsistence to a more commercial approach to the system were equally valid.

(b) The question had three demands: a more descriptive element, on the need for change, and an evaluation, with two elements, related to changes – the extent and success. Most candidates, who have knowledge of the management of agricultural change in a country, were able to describe the need for some changes. Better responses could describe the need for change at a variety of levels from national to individual holder or producer. They were then able to link the need for change to a specific solution to this problem, e.g. loss of competitiveness in global markets was addressed by reorganisation of production or diversification. Further, they were able to assess how far this change has gone and to assess its success. These evaluative comments were backed up with evidence. Candidates who take the Green Revolution as a base for this question can still be successful, as long as they have knowledge of its application in a specific country and, in this case, could address the three demands of the question. The one country aspect of the question could successfully be used for evaluation of the extent and success either spatially (e.g. between different regions, production systems or environments) or between groups of people (e.g. rich farmers and poor farmers).

Question 2

(a) (i) Most candidates know what is meant by economies of scale but are less precise in defining the term. The idea of lower costs with increasing size is commonly known, but the idea that this is related to costs per unit of production is less common. Some candidates were able to explain how fixed costs and variable costs are reduced through scale of operation but this explanatory element was sometimes disregarded – an example of key message 1.

(ii) More successful responses built on the knowledge of what industrial agglomeration is and could explain, rather than simply describe, some advantages of firms locating near to each other. Exemplification could be general in terms of type of agglomeration, e.g. industrial estate or Export Processing Zone, or elaborated with specific names or industrial areas. Some of the explanation remains quite simplistic, such as sharing of various inputs or aspects of infrastructure or reducing costs through bulk buying. Better explanation displays an understanding that reducing costs and raising sales and profits could be the result of either more competition amongst suppliers or a larger customer base. Additionally, the infrastructure costs are not only spread between the companies but also the infrastructure might already be provided by government funding or policies designed to attract companies.

(b) A key element to success in a broad question such as this is the ability to focus on the factor under consideration and to present a balance and contrast with other factors. Many candidates approached the question from either the market aspect or considered other factors but had little balance to the other. In the former case, a narrow view of what is meant by market in terms of manufacturing and related service industries was presented. There was also confusion with markets in terms of agricultural production and responses where Von Thunen's model is quoted in depth are self-limiting. The locational element for this topic is not strongly based on examples of real industries and locations. Good responses often considered how the importance of markets or factors such as raw materials have changed over time as transport technology has developed, and they were characterised by a focus on the dynamic nature of the global economy.

Environmental management

Question 3

(a)   Many effective responses were seen clearly addressing advantages and able to balance the response with one of each energy type. Most common were HEP and coal but some sound explanatory accounts of solar and wind and their flexibility at different scales were seen. Nuclear was mostly taken as a renewable (though its inclusion as a non-renewable was perfectly acceptable). Candidates who selected Biomass were able to explain how it can be regarded as renewable, if the crops or trees are replaced and grown in a sustainable way. One characteristic of a higher scoring response was the use of examples – key message 3 – and explanation of the advantages as well as a description. Candidates who selected oil or natural gas were less knowledgeable about the advantages related to portability and the wider variety of uses, other than combustion, to make electricity. There was a minority of candidates who selected more than one from each type, confused HEP and Tidal, used the broad umbrella of fossil fuels as the non-renewable type or used the term fuel instead of oil (a long term problem related to either language or vocabulary).

(b)   A question with a more descriptive element and an evaluative demand. Description of reasons were frequently well developed and candidates were allowed to present any reason for the development of the named located scheme. Better responses were able to assess the contribution of the scheme to the overall energy demands of the country and to remain focused on this aspect, even if the reasons for the development of the scheme went beyond this energy aspect – such as improved navigation or river flow control. This evaluative aspect was supported with data that was robust, with detail such as dates and percentages, and showed understanding of different outcomes either spatially within the chosen country or over time looking at past, present and future in the wider context of its energy mix and demands.

At the lower end, candidates were unable to select relevant information and ideas from their case study and presented descriptive accounts of a range of pros and cons of the scheme. Only a few confused scheme with strategy, such as EGAT in Thailand, or 'wind in Germany'. Overall support evidence for the scheme was more accurate than for the country's overall energy demands. Care needs to be taken over the difference between capacity and production and accuracy over the relative contribution from different sectors.

Question 4

(a) (i)   Candidates who noted that most of the world, especially but not only MEDCs have the highest percentage of population with access to safe water and that the lowest and greatest variations are found in Africa were able to consider most of the map in one sentence and successfully identified the pattern. A more time consuming approach was to describe each continent individually and did little to note the pattern unless a conclusion was added. There was some admirable naming of countries (not required by this syllabus). A different approach – and credited – was to use each class of the key instead of a global pattern. This approach, however, can be more time consuming and some overall pattern statement is needed. The no-data category is included so that the data is robust, but reference to these countries is not going to assist in describing the pattern.

(ii)   Candidates needed to recognise the importance in the question of the term 'at this scale', an example of key message 2, so that references to the date of the map were not relevant for this question. Robust observations seen were extensive countries such as China within which variation (rural/urban, regional, interior/coastal) is not known; and wide classes in the key, notably <50%. The former was more frequently seen, the latter less so, and therefore including both ideas was a characteristic of a higher scoring response.

(b)   Many candidates struggled to answer the question (key message 1) and reproduced their case study – causes, attempts, success. Overall knowledge of causes is better than attempts, which in turn is better than assessment of success. More successful responses were able to tease out the reference to 'understanding the causes' and to apply this to whether the environment was successfully improved or not.

Some careful, insightful responses were seen where candidates considered both success – for example, establishing that you can do something about deforestation, maybe by offering a simple affordable energy supply, or teaching about the importance of trees – and failure – not much can

be done about poverty, corruption, conflict, etc., whilst acknowledging that each makes a contribution to the causes of degradation of the environment. Again, like **Question 3(b)**, the data used to support a response is frequently seen to be better for the causes and extent of degradation but less accurate or missing in support of the assessment of attempts to improve environments.

Global interdependence

Question 5

(a) (i)   Most candidates know that visible trade involves goods which can be seen or touched, whereas invisible trade involves services, and could give examples of each. Frequently, however, they omitted to define *trade*, i.e. cross-border or international exchanges or buying and selling. Less frequently, in the case of invisible trade, responses did not refer to the idea that money is involved in the form of payment for services, remittances or financial transfers.

(ii)   Candidates who noted that the question asks them to 'explain how' were able to do well. Their responses concentrated on trade agreements, reduction of import tariffs and the function of the World Trade Organization (WTO) as a mediator when trade disputes take place. Common examples were issues related to the banana trade between members of the European Union, former colonies and other producers or, less common, the relationship between USA and Europe over trade in steel. There was little comment on the role of the WTO with LEDCs and on 'unfair' practices such as export subsidies or 'dumping' of products cheaply. So, in short, candidates focused on the import aspect of trade rather than the export aspect.

There was also some evidence of confusion about Fair Trade being WTO, as opposed to free trade, as seen in previous examinations.

(b)   The responses illustrated candidates' desire to use material which they do not make relevant to the question as it is asked – key message 1 – and to not illustrate with examples and support evidence, even though it is not overtly requested in the question – key message 3. It was reasonable to display knowledge of how the international debt crisis has arisen, but not to let this dominate a response. Many candidates equate aid with loans and increase of debt, rather than displaying understanding that this scenario can develop where aid is given with conditions and therefore the aid flows back to the donor in the form of resource exports from the receiving country. Therefore content on aid would have to be organised and applied carefully to the question. Candidates who offered a balanced coverage of debt and trade issues tended to do well. For trade they offered comment on issues such as fragility of trade, problems of dependence on primary products, and working of the global economy, whilst for debt, displayed technical knowledge of SAPs, HIPC initiatives, debt cancellation, etc., and deployed this effectively in the assessment offered. There were some sound accounts of progress in countries which have received debt relief, displaying a contempory knowledge of the issue.

Question 6

(a)   Better responses followed the demands of the question and noted the idea of continued popularity and importance of mass tourism, supported with examples. This support was essential for an award above 6 marks. Responses sometimes strayed into tourism in general and even into modern developments such as business tourism, ecotourism, and medical tourism rather than concentrating on the type of tourism responsible for most tourist numbers – mass tourism. The better responses also had a balance of comment on both continued popularity and importance. So, as referred to in previous Principal Examiner Reports for Teachers and in key message 1, it is important to deconstruct a question into its key elements and **address each one**.

(b)   Candidates generally know their case study well but have economic support data at a country level rather than for the specific tourist area or resort. Consequently, there are problems with using this data, unless the chosen area is taken as a country. There were some, but not many, responses where more than one tourist area or resort is referred to under this umbrella of a country. So whilst it is perfectly acceptable to consider beach tourism in a locality, if the scene then moves to the interior of the country, the content has to be linked to tourists from that coastal area also using the interior as part of their vacation stay and not a completely different group of tourists. Some wanted to reproduce their case study and write about the life cycle model without identifying aspects of the tourist area or resort and the stages of the model related to this model of sustainable tourism.

Candidates need to be able to write about the tourist area or resort without the life cycle model for a question such as this. This is an example of key message 1.

Others wanted to write about their case study and the concept of sustainability with only a brief reference to the model, a self-limiting approach. A number, however, engaged with the model and its use in part **(b)** and wrote perceptive, highly skilled analyses of elements of fit and non-fit, addressing the balancing of dimensions and providing specific detailed located evidence from the chosen tourist area or resort.

Economic transition

Question 7

(a)   This should have been a straightforward question based on a case study according to the demands of the syllabus. Very few candidates displayed the detail for this case study as they did, say, for **Question 3** and **Question 6**. Good responses were able to describe both the spatial organisation and the operation of a TNC, with some specific accurate detail. They were also able to explain with ideas such as profit maximisation, cost reduction, market penetration and regional customisation of products. Weaker responses were based on naming a TNC, with largely generalised ideas on spatial organisation and little comment on operation. The question could have been approached, in part, with the use of either a sketch map or schematic diagram, with perhaps the latter being a way of showing how a company operates – the less well covered of the two aspects.

(b)   As for **Question 2**, such a broad question requires planning and organisation of the content and ideas and a breakdown of the question into its component parts: key messages 1 and 3. An approach at any scale or a variety of scales was acceptable, so content at the global and/or national scale could be included. Good responses were able to establish social and economic inequalities robustly, explore economic development and its link to reducing or widening both social and economic inequalities, address the how-far-do-you-agree element, sometimes by providing one or more other factors, and illustrating with convincing exemplar content – where it worked or did not work. There were some effective, bold assessments arguing for what economic development cannot deliver or may do so very slowly, from the caste system in India to the stranglehold of corrupt elite families and dynasties in whose hands wealth and power are concentrated. Weaker responses tended to consider social and economic inequalities together and to have quite a narrow view of what economic development is, with little assessment, commenting on the cause of inequalities rather than the effect of economic development on reducing, or not, the inequalities.

Question 8

(a)   Candidates who noted that the question asks for a consideration of differences and focused their response on describing these differences by grouping the regions were able to provide a more concise and precise response. A region by region approach and description of each part of the key diverted attention from the focus of the question, which is about differences, and encouraged repetition of explanatory ideas or the use of simple opposites. Some good cultural and cross-cultural understanding of education was shown and sensitivity to the issue of gender. Comment on provision of facilities and general investment in teachers and equipment tended to focus on priorities of government spending related to levels of development, with less on accessibility and remoteness and rural/urban provision.

(b)   Choosing a question is an important examination skill. Here, candidates who have not studied specific attempts to reduce inequalities with a regional scale for a country would lack specific knowledge to address the question. They should have robust knowledge and understanding of 'attempts' in terms of actual named policies or initiatives and dates. Therefore it is easy to see how response quality could be enhanced in future. The scale of approach was also important; some candidates took the approach of considering inequalities between CBDs and peripheral shanty towns or just two places in a vast country such as China, rather than something which is truly regional. The latter was probably based on a core periphery approach. For this approach, knowledge of the core is frequently more developed and better supported than for the periphery. However, this is not broad enough for such a question. Regional means more than two areas with a specific identity, but does not have to cover every region within a country. Good responses were seen on countries such as Brazil, China, Malaysia and Indonesia, where candidates clearly described the region and its location with respect to the core and/or capital area and had specific

knowledge of attempts to reduce inequalities, and gave an assessment of the success or otherwise.

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Key Messages

- Knowing the meaning of command words, and following those commands, is an important examination technique.
- Skills in, and the language of, assessment are needed for effective answers to all parts **(b)**.
- The selection and integration of relevant detailed exemplar material is highly creditable and the use of home country material often notably real and convincing.

General Comments

The number of candidates who took this component is sufficiently small that generalisation is difficult.

All candidates' work was well produced, neatly written and legible and expressed satisfactorily. Technical subject vocabulary was used well in responses. The one term on the question paper that was misinterpreted by more than one candidate was *tied aid* in **Question 5(a)(ii)**. This was both linked incorrectly to the idea of colonial ties and ignored in some responses which were about aid in general, not tied aid.

The majority of candidates selected **Question 3** and **Question 6**. A number of different countries were chosen as the subject matter for **Question 3(b)**, principally China. Most wrote about tourism in the Cayman Islands for **Question 6(b)**.

Comments on Specific Questions

Production, location and change

Questions 1 and 2

There were no responses to these questions.

Environmental management

Question 3 was more popular than **Question 4**.

Question 3

(a) (i) An effective description comprised scale and location or spatial distribution, with some 'own input' in terms of interpreting and manipulating the data rather than simply expressing it in words. All identified correctly the dominance of oil reserves in the Middle East. A few candidates missed the small circle for Europe (12.6 billion barrels). Some recognised the mismatch between location of reserves and oil usage, for example for Europe.

(ii) The best responses identified more than one means of transporting oil (rail, road, ship, pipeline) and used specific named locations or incidents to explain different environmental impacts. The best explanations were developed in different ways. For example, a marine oil spill means that oil covers shellfish and disrupts the food chain, forms a coat on the surface of the sea impacting light entry and fish stocks, and gets into the feathers of sea birds.

(b) Most responses were secure in terms of knowledge and understanding of sources of electricity supply in one country, and in conceptual understanding of what renewable and non-renewable sources are. A few candidates over-emphasised oil, some including its use for transport and in manufacturing industry. One candidate compared one renewable source (HEP) with one non-renewable source (coal) in China. This, whilst pertinent, was an inadequate basis on which to respond. Indicators of higher quality responses included accurate and detailed recall, enhanced assessment, for example of trends in the use of renewable and non-renewable sources over time, and a wider context. For China, this could include foreign criticism of China's continuing reliance on coal, which is highly environmentally pollutative and injurious to health.

Question 4

(a) The main human sources of air pollution were covered in a limited manner. Some knowledge was shown of a few sources, but the approach was quite general and the significant contributions of manufacturing industry and the transport sector were lost in a broad treatment of fossil fuel combustion.

(b) This was answered effectively, candidates usually disagreeing with the statement and explaining in one or more contexts what was done to stop the degradation and to improve the environment. Most approaches were well informed but more factual, 'telling the story', than judging, the assessment remaining basic to moderate in quality. One candidate identified creditably the importance of finance and of co-operation in order to do something.

Global interdependence

Question 5

(a) (i) Fig. 2 was interpreted effectively by all candidates. Some responses would have been enhanced by the use of data from the *y* axis and by the use of names from the *x* axis for some of the countries shown in red.

(ii) No candidate had a sufficiently tight definition of *tied aid* in order to make an effective response. Tied aid is where a donor country gives aid (money, investment) in return for something, such as goods from the receiving country, or the purchase of goods or services from the donor country.

(b) This part-question was effectively answered. Better responses were balanced between tourism and trade and judging in terms of the advantages and disadvantages of each. A few responses used the life cycle model of tourism effectively to consider stagnation and decline, or used ecotourism to consider scale and sustainability. One indicator of response quality was the integration of some detailed and contemporary exemplar content from world trade and global tourism.

Question 6

(a) The key to success in **(a)** was a clear focus on 'high employment in tourism' rather than just on tourism in general. Several responses lacked pertinence by omitting the idea of high employment and a few started securely before starting to wander into the general economic importance of tourism. The best responses covered benefits such as the multiplier effect in local economies and increased tax revenue in national economies, and limitations such as seasonality and the inherent fragility of the sector in the face of competition, recession, hazardous events, terrorism, etc.

(b) Some good work was seen, notably on tourism in the Cayman Islands. The best responded to the present tense of the question to cover current issues, and interpreted 'issues' correctly as of greater concern and/or scale and/or complexity than just problems in tourist areas. Understanding of management, and the assessment made, were two further ways that response quality was differentiated. Several responses were narrative, factual and well informed without this higher order conceptual content and remained explanatory of what is being done rather than providing some assessment. A few candidates tried to use the life cycle model to track issues throughout the history of a tourist area or resort. Given the tense of the question, this was not an effective choice of approach until the most recent past and the present day.

Economic transition

Question 7

There were no responses to this question.

Question 8

Only one candidate selected this question.

(a)   A number of measures were needed for an effective response. There needed to be some measures of social inequality, such as doctors per 1000 people, literacy rates or average calories consumed per day, and some measures of economic inequality, such as GDP per person, or percentage employment in agriculture. Only single criterion measures were introduced: multiple criterion measures, such as MPI, the multidimensional poverty index, could have been described and explained to enhance the response.

(b)   The country chosen was Brazil, with a focus on the industrialisation of the SE region in the 1960s, later spread effects into other regions and the continuing relative isolation and underdevelopment of the peripheral regions. There was secure factual content but limited assessment of what 'success' meant in terms of development and the chosen policy.