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. The improvement in answers to the Physical Geography questions, noted in previous reports, seems to have stalled and the discrepancy in calibre of answers between Physical and Human Geography is still quite large. Atmosphere and Weather continues to be the least popular option in **Section B** but the question 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 imprecise use of technical terms continues. Good examples of this are the definitions of heave and slide and the incorrect interchange of the concepts of weathering and erosion. As noted later, the misunderstanding of the various plate boundaries and the processes involved continues to be prevalent. 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.

Many candidates are still not appreciating command words such as 'compare', 'overall', 'relationships', 'trend' and many more. Description of patterns appears to cause difficulties. Many candidates simply list everything without providing a general synthesis. This was especially true of **Question 2**. 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. This was true for part **(b)** of **Question 1**. Previous reports have stressed the need for all the information in the resources to be used. Although there were still many cases of limited analysis, there are signs that candidates are making better use of the resources. However, some candidates do not read the question carefully enough and discuss the wrong table or the wrong data. 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.

Comments on Specific Questions

Section A

Question 1

(a)   The response to this question was very mixed. Many of the features were incorrectly identified and there was especially confusion between bluffs and levees. Floodplain was usually identified correctly but the bluff/terrace caused the most problems. Many candidates identified feature D as an oxbow lake whereas it was the straight channel or cut through that was the feature indicated.

(b)   Answers to this part of the question were a prime example where description was often negligible with candidates offering explanations for features that had not been described. This was especially true of the analysis of levees. There was often little indication of what the levees were like. Floodplains were the exception with generally good descriptions but the explanation was in terms of overbank flow and deposition of fine sediments. This is the result of the floodplain and not its creation. Very few candidates understood that floodplains are caused by the movement back and forth across the floodplain as the river channel changes its direction. Almost 80% of floodplain deposits are in-channel deposits and not overbank deposits. Most candidates understood the formation of a channel cut off, although the specific mechanism by which this is achieved was often lacking in accuracy.

Question 2

(a)   Universally correct.

(b)   Answers to this question demonstrated the difficulty candidates have in describing a pattern. In many responses, the pattern was described in very vague terms whereas in others there was a lengthy description of virtually every hour with the appropriate temperature data.

(c)   Certain aspects of the urban heat island are well understood such as the different albedos of the respective surfaces. Only occasionally were the albedos reversed. The release of heat at night was often overlooked. The role of buildings in preventing wind action was often mentioned. But, as usual, there were far too many accounts of the greenhouse effect. The hole in the ozone layer was used by quite a few candidates to explain the increased temperatures. It was interesting that a significant number of candidates described the importance of the sky view factors in CBD with high buildings.

Question 3

(a) (i)   Most candidates calculated the difference accurately.

(ii)   Most answers were correct although some quoted 2000mm.

(b)   Most candidates identified freeze-thaw weathering as the most likely weathering process. The description was usually satisfactory but many did not emphasise the need for repeated cycles and some did not mention the volume increase as water turned to ice. Exfoliation was quite commonly described and some credit was allowed although the climatic conditions were not ideal for the process. Candidates simply described a physical weathering process without reference to the climatic parameters shown in the resource.

(c)   The lack of reference to the resource was evident in answers to this part. Thus, the presence of high temperatures and precipitation amounts was often ignored. However, there were some excellent responses noting that chemical weathering can occur at depth whereas physical weathering was mostly a surface phenomenon. The role of vegetation was mentioned by some candidates. There was the usual confusion over the processes involved, although carbonation was quite often correct.

Question 4

(a)   Very few candidates answered incorrectly.

(b)   Most candidates produced a good analysis of the relationship using data to substantiate the trend. However, only a very few noted the discrepancies, especially that of Bosnia-Herzegovina.

(c)   There were many excellent, comprehensive answers to this part and full marks were quite often awarded. Most candidates were able to describe and explain three factors, usually with good detail. Overall the response to the entire question was very good.

Question 5

(a)   Most candidates were able to gain reasonable marks. Some candidates did not extract data from the resource and described the main features in a very general way. The difference in the numbers between male and female was sometimes overlooked. Also some candidates provided an explanation, only to repeat themselves in part **(b)**.

(b)   A considerable number of candidates ignored the fact that this was an age/sex pyramid of immigrants and answered as if it referred to the whole country. Thus, there were explanations for the small number of very young migrants in terms of low birth rates and high death rates for the low number of older people. Many candidates struggled with the concept of more females migrating in the working age population.

Question 6

(a)   Most candidates were able to identify two changes.

(b)   Most candidates obtained full marks.

(c)   Most candidates suggested counterurbanisation and/or decreasing natural increase. However, some candidates struggled with reasons as to why counterurbanisation might occur. There was the usual problem as to whether suburbs are part of the city or not. Many described the movement to suburbs.

Section B

Question 7

(a) (i)   The definitions of surface storage and groundwater storage caused many problems. Many candidates simply repeated the terms in the question. There is a general point here in that simply repeating the elements of the question will receive no marks. This will be seen to have been a problem in **Question 11**. For surface storage there needed to be some indication of the nature of the storage such as in puddles etc. Rivers are not surface stores. There also needs to be some indication that it was water that has not infiltrated. The same issue occurred with groundwater storage. It was not sufficient to simply state that groundwater storage is storage in the ground. The key element is that groundwater storage is water stored below the water table. Water stored in the soil is not groundwater storage. Also, there was confusion between infiltration and percolation.

(ii)   The description of saturated overland flow caused similar problems. Very few candidates were able to describe it accurately. Most candidates were aware that the soil had to be saturated. The two types of overland flow are Hortonian overland flow where rainfall intensity is greater than the infiltration capacity of soils, but that infiltration still takes place, and which can occur anywhere on the slope, and saturated overland flow which requires the soil to be saturated which usually occurs on the lower portions of the slope where the soil is saturated by throughflow moving downslope through the soil. Thus water often rises to the surface as saturated overland flow. Many candidates described Hortonian overland flow. Candidates also did not describe the direction in which overland flow occurs. This is an example of the imprecise understanding of some fundamental physical geography concepts.

(b)   Most candidates understood the main difference between the hydrographs but many were unable to draw relevant hydrographs. Often, lag time was omitted or portrayed incorrectly and the rising and falling limbs of the forest hydrograph were too steep. Explanation for the differences was generally sound although sometimes lacking in detail.

(c)   Most candidates realised that the question was asking for situations where even quite light rainfall events could produce flooding, although very few expressed it in these terms. Thus, answers were based on the factors, such as urbanisation and deforestation, which might allow this to happen. The more astute candidates realised that other circumstances, such as snow and glacier melt and dam failure, could also lead to flooding.

Question 8

(a) (i)   Most candidates were able to offer basic definitions but often omitted the visibility characteristic to differentiate fog from mist.

(ii)   Most candidates know what albedo refers to and were able to provide convincing examples. The fact that it is an index was missed by most.

(b)   Diagrams were mostly ineffective but the general concepts were well 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)   Although there was no specific reference to lapse rates in the question, it was expected that a full explanation of the formation of clouds and rainfall would involve discussion of these rates. Most candidates did but there were many who simply wrote about uplift and condensation without reference to lapse rates. Thus, it was very difficult to explain the formation of rainfall. There was often confusion involving the rates, especially the relative rates need for instability and thus uplift, condensation and possibly rainfall. Some candidates had exceptional knowledge of the two main theories for rainfall production. This was very impressive. As usual with these questions, answers were often good or very poor.

Question 9

(a) (i)   Mass movement definitions often seem to cause problems and heave and slide were no exception. Most candidates knew that heave had something to do with soil creep but were unable to provide a clear definition of the movement. Slides were better understood but often either the mention of a slip plane or the movement en masse was missing. Diagrams often provided the information lacking in the description.

(ii)   The same problems were manifest in the explanation of mudflows. Most candidates understood the need for high water contents but were unable to translate that understanding into reasons for the loss of strength and movement. The confusion was further evident when candidates wrote about mudflows sliding down the slope. There seemed to be no realisation that this was a contradiction in terms. Diagrams, as with slides, often added considerably to the explanation.

(b)   Most candidates were able to answer this question in a satisfactory manner, although the diagrams were often ineffective. There was only the occasional answer that tried to explain ocean ridges in terms of converging plate boundaries and ocean trenches in terms of diverging boundaries.

(c)   Unfortunately knowledge of rock type is poor. Candidates are still writing in terms of hard and soft rock, with limestone as an example of a soft rock, which, of course, it is not. This is because of confusion between weathering and erosion. The role of joints and bedding planes being influential was mentioned by some candidates. The role of vegetation was understood more thoroughly, with trees having the capability of both increasing and decreasing the strength of slopes and therefore having an influence on shape. However, there was confusion as to whether strength caused slopes to steepen or decline. Human activities were explained mostly in terms of mining, road construction and house building with an occasional reference to activity that protected and increased the stability of slopes.

Section C

Question 10

(a) (i)   Most candidates were able to state the definition although many forgot the per year.

(ii)   The response was generally sound, although some of the stages were misinterpreted. Diagrams were often good and added considerably to the answer.

(b)   Quite a large number of candidates misunderstood the term mortality rate and wrote a completely wrong answer. Also, mortality was sometimes interpreted as infant mortality only. Most of the elements in the Mark Scheme were mentioned and many of the answers were nicely balanced between MEDCs and LEDCs. Those that interpreted the question correctly produced good answers.

(c)   Many candidates answered this question well, with argument that was well balanced between the two elements. The China one-child policy was used as an example of how difficult it is to decrease birth rate. Decreasing death rate was thought to be much easier with advances in medicines, hospitals and general hygiene and sanitation.

Question 11

(a) (i)   This was a good example of candidates not adding anything beyond the statement in the question. A very high number simply repeated the terms rural and urban without specifying what they meant. This will receive no marks. Also, many forgot that migration involves a stay for over one year. Thus marks were needlessly lost.

   (ii)   Most candidates were able to produce two circumstances in which rural to urban migration might occur but the detail was often disappointing. Simply stating that movement was in order to get a job will not receive many marks. Examples were often lacking.

(b)   Understanding of stepped migration was generally good, although the detail varied quite considerably. Examples were often lacking. Some candidates confused stepped migration with movement as a result of the life-cycle relationship, although there was some similarity. Most candidates were able to score quite good marks on this question.

(c)   This was a very accessible question which received an excellent response with good, specific examples. The only limitation was the lack of balance between losing and receiving countries and between advantages and disadvantages.

Question 12

This was the least popular question in **Section C**. However, there were some excellent answers with detailed examples often, clearly, from first-hand experience. Answers to all parts depended on the extent of knowledge and understanding of the chosen shanty town. Some candidates simply wrote in very generic terms with little detail and received few marks.

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General Comments

There were excellent performances from some candidates, and very competent performances by many. The standard of written English is impressive. There has been evidence in recent years of an improvement in map and diagram drawing, but appropriate annotation would further enhance these skills. Few candidates did not complete the required number of questions, and this suggests effective planning in terms of time allocation. There were few rubric errors, other than answering all six questions in **Section A**.

Making effective use of the diagrams in **Section A** remains a priority. Candidates often display a clear understanding of the information provided, but do not use the data available to enhance their answers. For example, the description required in **2(b)** should include specific information from Fig. 2. Some questions, such as **9(c)**, do not specify the requirement of a diagram, but a clearly annotated diagram could be very effective in supporting the text in this instance.

Candidates are certainly improving their understanding of command words such as 'trend', 'relationship', and 'comparison'. 'Description', however, continues to cause problems. Candidates, who are clearly capable of simply describing, may obscure the description with detailed explanation. 'Pattern' also continues to cause some problems. Some candidates detail every change, or use all the data available, so that a clear general pattern fails to emerge.

In general, however, candidates strive successfully to discuss and evaluate. There is often a level of sophisticated reasoning.

Comments on Specific Questions

Section A

Question 1

A surprising number of candidates made careless errors in their answers to **(a)**. Calculations for lag time were too often incorrect, and discharge figures were read from the rainfall scale. Part **(b)** was well answered by many candidates. This is a topic clearly understood, and some descriptions were very detailed. The danger here was lack of explanation after very lengthy descriptions.

Question 2

Part **(a)** was correctly identified by most candidates. Not all candidates appreciated the direction of shortwave and long wave radiation in **(b)**, and this was an instance where a detailed list of changes too often obscured the general pattern. Part **(c)** was not answered well. A tilted earth diagram, with atmosphere, would have effectively explained areas of surplus and deficit, but such a diagram was not generally used.
Too many candidates still claim that the Equator is closer to the sun than the Poles, and use that as the focus for their explanations.

Question 3

Most candidates were successful in gaining marks in parts **(a)** and **(b)**, but answers to **(c)** were much more variable. Many were able to correctly explain 'flow', and displayed clear understanding of this process. 'Slides' were sometimes confused with flow, and the concept of a block of material moving down slope on a slide plane was not understood by many. Once again, however, it is 'heave' which causes greatest difficulty. Too many simply concentrate on the speed of the process, without a valid explanation of the process itself.

Question 4

Population questions are often well answered, and this was no exception. Most correctly identified two features of 'low fertility' in **(a)**, and also scored successfully in **(b)** if '20 years of age' was correctly identified. A wide variety of pro-natalist policies were offered in **(c)**, but the best answers focused on developing a few reasons, rather than stating many. Very detailed description could at times obscure the 'aims' as stated in the question. However, overall, answers were of a good quality.

Question 5

Most candidates scored well in **(a)**, although some gave percentage difference in **(a)(ii)** rather than the year. Answers to **(b)** varied considerably. There were some excellent answers with great comparisons and accurate use of data. Unfortunately, many candidates did not appreciate the fact that the question was only directed at the prediction part of the graph, and wrote about all changes from 1950. There remains a problem with the term 'comparison'. Just listing data separately for Mexico and the USA, does not lead to comparison. In **(c)** there were some very comprehensive answers, with an excellent use of specific case studies. However, there was some confusion between emigration and immigration, and too few appreciated the fact that emigrants tended to be the most fertile part of the population.

Question 6

Most candidates found this a straightforward question and scored quite highly. There were no problems with **(a)** or **(b)**, and usually a wide variety of 'consequences' were identified in **(c)**. Answers could be rather unstructured, perhaps reflecting the nature of the question, but it was pleasing to see that both positive and negative consequences were frequently considered.

Section B

Question 7

In **(a)**, 'entrainment' caused problems, but 'traction' was widely understood, as was 'abrasion' in **(a)(ii)**. Answers to **(b)** reflected ability in diagram construction. Oxbow lakes, levees, river cliffs, and point bars were clearly understood, but not river bluffs.

In **(c)** it was apparent that many did not fully understand braiding. Most were aware, that in some way, eyots were involved, but there was no general recognition that variations in discharge and sediment content were crucial aspects of any explanation. However, to their credit, many candidates argued that the processes were essentially the same. Helicoidal flow was identified as a significant process of meandering channels, but comparisons with braided channels were limited.

Question 8

Definitions were clearly understood in **(a)(i)**, but answers to **(a)(ii)** were often just about water vapour.

Answers to **(b)** were very encouraging. Many were able to link higher temperatures to convection heating, and hence to increased precipitation. Also, the role of higher temperature in dispersing mist was generally understood. The concept of the urban heat island is understood, but explanations are too often to be sought in global warming rather than specific heat capacity.

Questions involving lapse rates, as in part **(c)**, are not well answered. Sometimes, the understanding was present, but not the ability to convert the understanding into coherent text. There was some good understanding of DALR and SALR, but candidates were less certain of their relationship to the ELR. However, saturation point was used effectively to explain condensation level, but the links to specific weather types were limited. There were some good attempts to draw, and incorporate lapse rate diagrams into the answers.

Question 9

In **(a)**, there was clear understanding of salt crystal growth – evaporation linking to crystal growth in cracks and crevices over time, exerting pressure where there was structural weakness. Spheroidal weathering tends to be confused with exfoliation, but pressure release was also clearly understood. There were some excellent answers on limestone, displaying a clear understanding of carbonation. There were also many competent answers on granite, but a tendency to confuse hydration and hydrolysis. In **(c)** candidates did successfully identify the relevant landforms, but explanations of fold mountains are at best indifferent. Answers should obviously be enhanced by a diagram, but these were often of limited quality, and confirmed lack of understanding of fold mountains.

Section C

Question 10

Candidates answered part **(a)** successfully, although not all identified net migration gain in **(a)(ii)**.

There were some excellent answers to **(b)**, although resources featured more prominently than population increase. The evaluative aspects of **(c)** proved difficult, but many did recognise the significance of Malthus and Boserup. Many effectively discussed new technology (Green revolution, Irrigation, HYV etc.) in establishing a more secure resource base.

Question 11

Urban-urban migration was generally understood, but the link to duration was often missed. In **(a)(ii)**, answers were usually correct, but not sufficiently developed for high marks. In **(b)**, answers were often too generic, and there was little discussion of how the factors 'work together'. Nevertheless, causes of rural-urban migration were clearly understood and identified. In **(c)** there were some excellent and well thought out answers, which addressed 'to what extent'. A range of circumstances of intra-urban migrations were clearly linked to education, marriage, old age, divorce, etc., with some pertinent references to their own families, and illustrated with specific named places within their home cities.

Question 12

This question was generally not well answered. Most candidates accumulated marks in **(a)**, but both **(b)** and **(c)** depended upon the quality of the case study material. Too often, answers tended towards the generic, but there were a few outstanding answers in **(b)**. Very few candidates could rise above Level 1 in **(c)**. There were few ideas, and little evaluation.

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> **Core Geography**

General Comments

Very few candidates sat this paper; therefore evidence of performance is very limited. There were signs that candidates were using the resources, provided for questions in **Section A**, in a more thorough manner. There were still instances where understanding and definition of Physical Geography terms were imprecise, with confusion between porosity and permeability and confusion between hydration and hydrolysis. **Question 9** was the most popular Physical Geography question and **Question 11** was the most popular Human Geography question.

Some candidates are still not appreciating command words such as 'compare', 'overall', 'relationships', 'trend' and many more. Description of patterns and trends appears to cause difficulties. Many candidates simply list everything without providing a general synthesis. 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. It is worth repeating that it is very difficult to obtain a mark in Level 3 without some form of evaluation or assessment.

Comments on Specific Questions

Section A

Question 1

(a) Almost universally correct.

(b) Mostly correct answers were received although there was some confusion over lag time.

(c) This was answered well although there was a tendency to explain before describing the differences. Most of the elements in the Mark Scheme were discussed although the quality of explanation did vary quite considerably. Evapotranspiration was the least well understood of the components.

Question 2

(a) Most candidates were able to identify the components X and Y.

(b) Most candidates were able to complete both parts satisfactorily.

(c) Candidates seem quite able to describe and understand the nature of the Inter Tropical Convergence Zone and the air circulation within cells. The transference of heat by these cells is also quite well understood in terms of the rising and falling of air. Good marks were generally obtained by candidates who chose to answer this question.

Question 3

(a)   This part proved very accessible and few candidates did not identify mudflow and creep.

(b)   This part was not answered as well. There still seems to be a difficulty in describing the basic characteristic of mudflows. Most candidates realised that mudflows tend to be wet but the nature of the movement is less well understood. Few candidates are able to describe the internal movement and deformation that is characteristic of mudflows. Confusion is evident when candidates describe mudflows as sliding down the slopes. The same confusion exists with the description of soil creep. The slow, particle by particle movement, often involving some form of heave, is rarely described succinctly.

(c)   Candidates concentrated on the physical effects such as mining, house building, quarrying, and road construction. Some candidates attempted to assess the effect of deforestation on slope stability but were unable to decide how slope stability might be affected. A sizeable minority attempted to bring global warming and acid rain into the analysis by arguing for increased weathering. However the effect of weathering on slope stability was rarely answered in a convincing manner.

Question 4

(a)   Most candidates were able to provide a convincing description of the trend although, as noted in the introductory remarks, some did not understand the term trend. Some candidates described the trend in resources or described both.

(b)   The most frequent consequence discussed was the possibility of famine followed by disease. War, as a consequence was discussed by some but very few argued for a technological response.

(c)   As with the answers to part **(b)**, most of the responses concentrated on ways of reducing the birth rate such as various forms of population control. Emancipation of women and education were also frequently discussed. Answers were rarely balanced in the sense that population control should work in conjunction with increased efficiency in resource development. Some did introduce the ideas of Boserup.

Question 5

(a)   Most candidates identified short distance movement especially that to Kenya. The relative size of the movements was stressed by many.

(b)   The most frequent reasons were distance decay, cultural or historical links and countries that would accept them. The emphasis was again on the reasons for moving to Kenya and answers were linked to the features described in part **(a)**. Thus, most candidates were able to achieve good marks.

(c)   Most candidates used Kenya as the example, having used Kenya as an example in part **(b)**. The emphasis was almost entirely on the short term effects such as refugee camps, food supplies, health issues and friction with the local population. The long term impacts were treated less thoroughly although possible political unrest was sometimes mentioned. There was little mention of potential positive impacts; the emphasis was almost entirely negative.

Question 6

(a)   Most candidates were able to describe changes in two of the indicators in the figure.

(b)   The marking of this question had to be flexible because there was no indication in the question that the reasons had to be related to the fact that they represented inner city areas.

(c)   There was a reasonable response to this question with most candidates being able to produce some sensible suggestions although detail was often lacking. The answer did not specifically stress the CBD although many candidates interpreted it as such.

Section B

Question 7

(a) (i)   Many candidates confused porosity and permeability. Although the question specifically referred to soils, many candidates related them to rocks. This was thought acceptable as it was the properties which were important. Clay causes some confusion because it has a low permeability but a high porosity. It cannot be assumed that porosity and permeability are positively related.

(ii)   Responses to this question were very weak. A number of candidates wrote about length of streams but without relating it to drainage basin area. This meant that a significant number of marks were lost.

(b)   Although it was expected that Hjulstrom's diagram would be used to underpin answers, this happened in very few cases. That being so, diagrams of channel cross-sections were accepted if there was some indication of transport and deposition related to river velocity and sediment characteristics.

(c)   Landforms of meandering channels were frequently described and explained with waterfalls less popular. Rapids received very little attention. Description and explanation of processes were generally sound but with the usual confusion of abrasion and attrition and cavitation and hydraulic action. Few candidates picked up the 'discuss the extent to which' part of the question. This meant that few candidates achieved marks in Level 3.

Question 8

(a) (i)   Most candidates were able to define condensation and sublimation.

(ii)   There were few problems with this part, although detail was often lacking.

(b)   The diagrams were often uninformative but the more enterprising candidates managed to produce effective illustrations. Most understood the different surface albedos between urban and rural areas. However, the detailed explanation was limited in some respects. Many still write about carbon dioxide forming a blanket over urban areas and global warming. Holes in the ozone layer are still used as an explanation for the urban heat island.

(c)   There was a poor response to this question with respect to local energy budgets and few of the elements in the Mark Scheme appeared in answers. There were better responses with respect to land and sea breezes. These have always been popular with candidates although sometimes they were reversed in their action.

Question 9

(a) (i)   Answers to this question were mostly correct, especially carbonation. Hydration was sometimes confused with hydrolysis and many wrote about rocks absorbing water rather than specific minerals.

(ii)   A straightforward question that was answered well.

(b)   Most candidates concentrated on arid climates and cold climates, thus exfoliation and freeze-thaw weathering were frequently described. Some good marks were obtained.

(c)   Diagrams still cause problems and are usually not well constructed or not very useful. Diagrams here were no exception. The better candidates did realise that if sea-floor spreading was acting in one place then there had to be subduction going on somewhere else. However, this was not a requirement for a good answer.

Section C

Question 10

(a) (i) Although the general concept was understood there was some confusion over the age ranges and which way the ratio was expressed.

(ii) The response was generally sound, although the level of detail was sometimes limited. Both ageing population and high birth rates were discussed.

(b) There were excellent responses to this question. Most candidates were very familiar with the concept of aged dependency although some thought it related to the youthful section of the population as well.

(c) Most candidates wrote about pro- and anti-natalist policies but struggled with the ways these policies might affect population structure. Many argued that it was very difficult to affect population structure and gained some assessment marks for this.

Question 11

(a) A straightforward question with answers only varying in terms of the depth of detail. Far too many candidates are still simply reversing the push and pull factors adding little to the answer. The best candidates provided specific examples.

(b) Generally well answered with few problems.

(c) Most candidates were able to score quite good marks on this question with good detail concerning specific urban settlements. As mentioned in the Mark Scheme, an over emphasis on the growth of shanty towns limited the marks awardable.

Question 12

There were no answers to this question.

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General Comments

This paper elicited a wide range in the quality of responses. Some candidates were able to demonstrate a wide knowledge, detailed explanation and appropriate exemplification. At the other end of the scale were some responses which appeared to have made little preparation for an examination of advanced options in physical geography.

Opportunity is always given in all of the environments covered by the paper for candidates to make full use of examples and case studies that they have prepared. It is pleasing to note that more candidates are taking this opportunity and thus gaining credit. A word of caution, however, must be issued. It is important that the chosen example, be it of a particular coastline or the occurrence of a particular hazard is made relevant to the question that has been asked. Often the case study is described in great detail much of which is not made relevant. For example, in **Question 3(b)**, detailed descriptions of coastal stretches of the Isle of Purbeck or of Holderness were often given with little reference to the contribution of marine and sub-aerial processes to the formation of land forms. Similarly, in **Question 8(b)**, case studies of development schemes in semi-arid areas, such as Almeria or the Sahel, were given with little or no reference to either climate or to sustainability.

Whilst the use made of resource material provided for some questions has improved, the response to photographs remains disappointing. Diagrams should be based on the photograph and not on "textbook" types of landforms. Credit will always be given for both observation and the intelligent use of annotation.

This syllabus and examination paper makes due recognition of the fact that human activities have a profound effect upon today's physical environment. It is important, however, that candidates recognise the vital role of the physical systems that underpin the environments that characterise this syllabus. Often candidates produce answers that dwell upon human responses to hazards or to coastal erosion, rather than developing an explanation of the physical systems that impact upon the environments concerned. Clearly, the best answers are those that balance and evaluate both physical and human influences.

As has been the case in recent examinations rubric errors were few and the allocation of time sensibly achieved by most candidates. The clarity of handwriting and use of English is, by and large, good and often exemplarily in Centres where English is not necessarily the candidate's first language.

Comments on Specific Questions

Tropical environments

Question 1

(a)   Tropical climates appeared to be an area of difficulty for many candidates. Only the best answers were able to describe the ITCZ and to explain how its movement could affect both temperatures and rainfall in areas such as Central Africa or the impact upon the monsoon of SE Asia. The seasonal location of the ITCZ could be ascertained from the diagram and its impact upon wind direction could have been described and utilized in explanations of the resultant weather.

(b)   Candidates performed better in the first part of this question, while many struggled with the second demand concerning climate and sustainable development. Accounts of vegetation adaption to climate in the TRF were generally competently achieved with descriptions of the various layers and emergents featuring in the better answers along with the more common descriptions of drip tip leaves and buttress roots. In the case of savanna vegetation, Baobabs featured strongly although better accounts related grass lands to seasonal draught. Sustainable development rarely extended beyond descriptions of slash and burn agriculture.

Question 2

(a)   Very few answers demonstrated any appreciation of soil fertility or of the nature of tropical soils. There is a wide spread misconception that tropical rainforest soils are intrinsically fertile, which they are not. A handful of better answers linked soil fertility to nutrient cycling in both tropical rainforest and savanna areas.

(b)   Only a handful of answers demonstrated an understanding of the weathering processes that operate in the development of granite land forms. Better answers recognised the role of high temperatures and heavy rainfall as well as the operation of humic acids and chelation related to the rapid decay of vegetation in TRF areas. The development of land forms was often poorly understood with very few answers that developed the key roles of granitic joint patterns, deep weathering and regolith stripping.

Coastal environments

Question 3

(a)   There were some excellent responses, but many answers were unbalanced in that they did not cover all three zones, namely the beach, dunes and salt marsh. Sometimes, beaches were ignored whilst others gave overlong accounts of constructive and destructive waves, off shore bars, longshore drift and the subsequent formation of spits. Dunes rightly featured prominently in most accounts with better answers explaining the role of vegetation and an understanding of the various stages of development. Saltmarshes were the least well explained with only the best answers emphasising tidal ranges, deposition of mud and the colonisation by salt tolerant vegetation.

(b)   Most candidates demonstrated a good understanding of the marine processes that operate along the coastlines. Less successful was the description of sub aerial processes. Freeze-thaw was often given prominence despite the fact that it is generally rare in coastal locations. The role of mass movement and the slumping of cliffs were introduced only in better answers. Most examples of coastal land forms were generic, although there was far more realisation of the role of geology than has been the case in the past. Better answers were those that evaluated the contribution of marine and sub aerial processes as well as geology to the formation of specific land forms along coastal stretches that had been studied.

Question 4

(a)   Characteristics of coral reefs and the conditions that are required for their existence are now well appreciated by most candidates. The problem with many responses to this question was the inability to relate this knowledge to the importance of sea level change. The better answers explained the influence of sea level on the conditions for coral development and then explained the theories of reef and atoll formation as suggested by Darwin and Daly in terms of sea level change and the corals ability to keep pace.

(b)   Many candidates experienced difficulty in explaining the factors that make coastlines at risk from erosion. Some weaker answers develop little beyond 'hard and soft rocks' and the impact of destructive waves. Better answers explained the role of rock type structure as well as the significance of high energy wave environments. Many answers to the second demand gave generic accounts of hard and soft engineering methods. Better answers related the risk of erosion to solutions undertaken along particular stretches of coastline such as the Holderness coast or Barton on Sea or the east coast of the USA. Evaluation was then made of the relative effectiveness of these solutions.

Hazardous environments

Question 5

(a) Most correctly associated the generation of tsunami with earthquakes or volcanic activity. Far fewer, however explained this in terms of the large scale displacement of sea water. Better answers utilized the tabulated information to explain how the impact of tsunami varied with distance from the epicentre and with the nature of the coast. Weaker answers dealt only with the human impact of tsunami and often completely ignored Table 1 and the location of tsunami within the Pacific.

(b) This produced a very wide range of response. Many dealt almost exclusively with the human responses to volcanic eruptions contrasting MEDCs and LEDCs in their ability to predict eruptions and evacuate at risk populations. Often all erupted materials were assumed to be equally hazardous. Better answers distinguished between different types of eruption and classified the hazardous effects of erupted materials. Examples were used to demonstrate the hazardous impact and the various steps, including prediction, which can be taken to limit volcanic hazards.

Question 6

(a) As has been noted in past examinations, the generation and nature of mass movements are not well understood. This proved to be the case in this examination. Avalanches were the most popular choice but both the causes and nature of snow avalanches were rarely described with any accuracy. Landslides and mud flows were often treated as synonymous features and their causes were simply ascribed to heavy rainfall or deforestation. The role of geology was only mentioned in the best answers.

(b) The nature and development of tornados is now much better understood than was the case in the past. The generation of tornados is very complex and there were a number of excellent attempts at explanation that included the meeting of warm moist air and cold dry air, rapid uplift, upper air inversions with wind sheer inducing a rotating vortex and funnel. Weaker accounts glossed over the generation of tornados and concentrated on their dramatic impact in terms of uplifted cars and exploding houses. They often ignored the high wind speeds, torrential rain and extreme low pressure.

Arid and semi-arid environments

Question 7

(a) A minority of answers sacrificed marks by not producing a diagram, whilst others merely reproduced a textbook panorama of a desert piedmont. Those that recognised the mesa/butte gained marks for accurate representation and descriptions. Explanations, however, were very limited as only a handful of responses made any attempt to explain the processes of pedimentation.

(b) This was generally well answered with some very good responses. Most were able to explain xerophytic and phreatophytic adaptations of plants and better answers exemplified these well and included other adaptations such as seed dispersal to allow germination in infrequent periods of rainfall. Animal adaptations are now much better understood and often very well exemplified. The better accounts organised these examples into particular classes of adaptations.

Question 8

(a) The relatively few answers made little distinction between arid and semi-arid climates apart from annual rainfall totals. It was assumed that both climates had precisely the same causes such as sub-tropical high pressure, rain shadow or continentality. The role of the ITCZ in producing rainfall in semi-arid areas was developed in only the best answers as were annual and diurnal temperature ranges, seasonal and episodic rainfall and wind energy.

(b) Many candidates saw this as an opportunity to describe the detailed case study that had been prepared to explain the causes of desertification and the means to overcome its effects. Whilst these studies could have been made relevant, relatively few were. Climate was often completely ignored as was sustainable development. Those that had not prepared a case study often gave lists of activities such as nomadism, car rallies and developments such as the Aswan Dam.

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Paper 9696/22

Advanced Physical Options

General Comments

There were a number of quality responses to this paper where candidates displayed good levels of understanding of the processes of physical geography and were able to exemplify their answers in a cogent and appropriate manner. At the other end of the scale were a number of responses that were entirely based upon questions from previous papers that displayed only passing relevance to the actual questions being asked.

Candidates should always be encouraged to prepare examples and case studies for each of their chosen study areas. Care must be exercised, however, that the use of such case studies are made relevant to the questions being asked. For example, in **Question 4(b)**, the coastline management being described should relate to an evaluation of the success of strategies. Similarly, in **Question 1(b)**, the management of TRF or savanna should have been related to both sustainability and the nutrient cycle.

Candidates who select questions that contain a resource should be encouraged to use the resource more effectively in their answers. In this examination, many answers to **Question 1(a)** completely ignored Fig. 1 and wrote in general terms about monsoon climates. Similarly in **Question 5(a)**, the classification of hurricanes was often ignored in favour of descriptions of the effects of particular hurricanes.

Whilst it is important that candidates recognise the human impact upon physical environments it should be remembered that this is a syllabus in physical geography. Therefore a good understanding of physical processes in each of the topic areas has to be demonstrated in order to gain the upper levels of credit. Very often candidates answers are very unbalanced with little attention given to the physical environment and processes that frame and shape both hazardous and coastal environments.

As has been evident in recent examinations, the allocation of time and the avoidance of rubric infringements has been well maintained. The use of English and the clarity of handwriting have also been exemplary particularly considering that English is not necessarily the first language of many candidates.

Comments on Specific Questions

Tropical environments

Question 1

(a)   Tropical climates remain an area of some difficulty for many candidates which was reflected in the quality of the answers to this question. There were a few good answers where the example of SE Asia, particularly the case of the Indian sub continent, was well used to explain the processes of the monsoon and some description of the resulting patterns of weather. Generally, however, weather was completely ignored apart from convectional rainfall and no distinction was made between the weather experienced in Australia and that experienced in India. Most realised that the basis of the monsoon was seasonal pressure change induced by surface heating, but only the better answers involved the movement of the ITCZ and referred to differences in the specific heat between land and sea.

(b) Most answers gave reasonably accurate diagrams of nutrient cycling in the TRF with appropriate scales of stores and transfers. Many were less secure with diagrams of nutrient cycling in the savanna, where the relative sizes of the stores were often not discriminated. The main difference in quality was in the level of explanation of the operation of nutrient cycles rather than a simple description. The second demand concerning the effect of nutrient cycling on sustainable management was ignored in a number of answers. Those that did attempt it often reversed the question i.e. how development would affect nutrient cycling through deforestation. Many better answers used the MILPA system in Mexico to illustrate how the balancing of different crops could be employed to sustainably manage nutrient levels and recycling.

Question 2

(a) There were relatively few answers many of which confused weathering profiles with soils. These gained limited credit as they ignored weathering processes in favour of soil horizons and leaching. Better answers detailed chemical weathering processes and explained the accelerated effects of high rainfall and temperature together with the impact of humic acids and chelation in producing deep weather profiles.

(b) Many provided detailed accounts of the process of carbonation but the development of land forms was very weak in a lot of responses. Better answers explained how dolines could develop into cockpit and tower karst features. At times the stages were not convincingly explained but there was some very effective use made of examples from South China and Vietnam.

Coastal environments

Question 3

(a) Some descriptions were very good in detailing the processes of swash and back swash leading to LSD movement. However many candidates became too involved with constructive and destructive waves where the latter led to erosion of the coast. The net result was unbalanced answers in many cases; too much and irrelevance in the first part and merely brief descriptions of the contributions to coastal land forms. Good answers restricted description of the processes to the essentials and then explained the formation of spits, tombolos and dunes and salt marsh. Diagrams often reflected the degree of understanding and explanation.

(b) The conditions that encourage the growth and development of coral reefs are now very well known by candidates. Unfortunately, there is a tendency to give a lengthy description of these conditions at the expense of other aspects of the question asked. Thus the distribution of coral reefs and atolls was often overlooked. Human actions that can lead to the destruction of coral were usually given in considerable detail, but only the better answers effectively explain the cause and nature of natural stresses.

Question 4

(a) For many candidates rock type and structure do not extend beyond the distinction between 'hard' and 'soft' rocks. Clearly this limits the impact on land forms to such things as bays and headlands together with simple cliff profiles. Better answers contrasted clay with limestone and granite, citing concordant and discordant coastlines. Cliff morphology was accurately related to structure describing the impact of jointing and bedding planes. The use of cave-arch-stack-stump sequence received credit when related to rock type and structure.

(b) The approaches to management strategies for coastal protection were frequently given as hard and soft engineering applications. These were often well described but relatively few accounts developed why these applications were needed. This could be, for example, because a particular coast was vulnerable to erosion due to the instance of high energy waves or because of the nature of its geology and relief. Better answers made good use of particular examples, Barton on Sea and the Holderness coast often being well developed. Weaker answers named places to fit particular strategies such as hard or soft engineering, managed retreat or 'do nothing'. Neither the nature or the effectiveness of such strategies were explained.

Hazardous environments

Question 5

(a) Very few responses made effective use of Table 1. Many merely repeated the contents of the table without any attempt to give an overview as to how hurricanes were classified. Others ignored the table altogether and only addressed the second demand as to the types of hazard produced. Better answers made reference back to the table together with an explanation of the hazards in terms of storm surges, high winds and heavy rainfall.

(b) There was a full range in the quality of responses to the question as to how hurricanes form and occur. Most knew the general location but the understanding of the processes which lead to the development of hurricanes varied from the detailed and accurate to the confused. In terms of prediction, most recognised that hurricanes can be tracked by satellite image as well as ocean buoy weather stations and radar. The distinction in quality came from addressing 'to what extent it is possible to predict their path' with better responses citing examples where hurricanes had suddenly changed course. Attempts to limit the hazardous effects of hurricanes are well known, with better answers being well organised and gave consideration to the effectiveness of sea walls, levees, land use control and well laid plans for warning and evacuation.

Question 6

(a) Most candidates answered this sensibly with reference to different types of plate boundaries together with hot spots. There was some confusion between types of plate boundary and the associated nature of their volcanic activity. The distribution of volcanic activity was less well accomplished with many accounts only giving the Pacific ring of fire and Hawaii 'hotspot'.

(b) The best answers were those that provided some balance between physical causes of earthquake hazards and the human reaction to them. Thus magnitude, level of ground shaking, liquefaction, landslides and tsunami were all addressed as well as preparedness, population density, and infrastructure often expressed in terms of MEDCs as contrasted against LEDCs. Many answers, however, were far too heavily weighted towards the human responses, although they did often employ relevant examples such as the contrast between the hazardous effects experienced in Haiti as against those experienced in Kyoto or similar cases where comparable magnitude of earthquakes had occurred.

Arid and semi-arid environments

Question 7

(a) Most of the few responses merely repeated the material given in the flow chart (Fig. 3). Very little explanation was given and no account made of additional causes of desertification such as drought. It was expected that answers might have included the depletion of water tables through bore holes or the diversion of water supplies such as that which has occurred around the Aral Sea.

(b) Soils were rarely described beyond a sandy and dry nature. Descriptions of vegetation adaptations occasionally made mention of xerophytic and phreatophytic features but were more often limited to cacti. The contrast with semi-arid areas was presented as the differences between cacti and baobab trees. No mention was made of the laterisation of soils or of the adaptation of vegetation to seasonal but uncertain rainfall.

Question 8

(a) Candidates confidently dealt with the task of describing wind erosion, transport and deposition in desert environments. Abrasion, creep, saltation and deposition could all be illustrated with reference to the formation of yardangs, zeugans, mushroom rocks, deflation hollows and dunes.

(b) Simple diagrams could be employed to illustrate wadis, alluvial fans and pediments. If well annotated these diagrams could go a long way to providing explanation as to the formation of these desert landforms. All of these landforms can be ascribed to the action of running water with reference to climatic change that could account for the large amount of geomorphological work that has been accomplished.

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General Comments

This paper elicited a wide range in the quality of responses. Some candidates were able to demonstrate a wide knowledge, detailed explanation and appropriate exemplification. At the other end of the scale were some responses which appeared to have made little preparation for an examination of advanced options in physical geography.

Opportunity is always given in all of the environments covered by the paper for candidates to make full use of examples and case studies that they have prepared. It is pleasing to note that more candidates are taking this opportunity and thus gaining credit. A word of caution, however, must be issued. It is important that the chosen example, be it of a particular coastline or the occurrence of a particular hazard is made relevant to the question that has been asked. Often the case study is described in great detail much of which is not made relevant. For example, in **Question 3(b)**, detailed descriptions of coastal stretches of the Isle of Purbeck or of Holderness were often given with little reference to the contribution of marine and sub-aerial processes to the formation of land forms. Similarly, in **Question 8(b)**, case studies of development schemes in semi-arid areas, such as Almeria or the Sahel, were given with little or no reference to either climate or to sustainability.

Whilst the use made of resource material provided for some questions has improved, the response to photographs remains disappointing. Diagrams should be based on the photograph and not on "textbook" types of landforms. Credit will always be given for both observation and the intelligent use of annotation.

This syllabus and examination paper makes due recognition of the fact that human activities have a profound effect upon today's physical environment. It is important, however, that candidates recognise the vital role of the physical systems that underpin the environments that characterise this syllabus. Often candidates produce answers that dwell upon human responses to hazards or to coastal erosion, rather than developing an explanation of the physical systems that impact upon the environments concerned. Clearly, the best answers are those that balance and evaluate both physical and human influences.

As has been the case in recent examinations rubric errors were few and the allocation of time sensibly achieved by most candidates. The clarity of handwriting and use of English is, by and large, good and often exemplarily in Centres where English is not necessarily the candidate's first language.

Comments on Specific Questions

Tropical environments

Question 1

(a)   Tropical climates appeared to be an area of difficulty for many candidates. Only the best answers were able to describe the ITCZ and to explain how its movement could affect both temperatures and rainfall in areas such as Central Africa or the impact upon the monsoon of SE Asia. The seasonal location of the ITCZ could be ascertained from the diagram and its impact upon wind direction could have been described and utilized in explanations of the resultant weather.

(b) Candidates performed better in the first part of this question, while many struggled with the second demand concerning climate and sustainable development. Accounts of vegetation adaption to climate in the TRF were generally competently achieved with descriptions of the various layers and emergents featuring in the better answers along with the more common descriptions of drip tip leaves and buttress roots. In the case of savanna vegetation, Baobabs featured strongly although better accounts related grass lands to seasonal draught. Sustainable development rarely extended beyond descriptions of slash and burn agriculture.

Question 2

(a) Very few answers demonstrated any appreciation of soil fertility or of the nature of tropical soils. There is a wide spread misconception that tropical rainforest soils are intrinsically fertile, which they are not. A handful of better answers linked soil fertility to nutrient cycling in both tropical rainforest and savanna areas.

(b) Only a handful of answers demonstrated an understanding of the weathering processes that operate in the development of granite land forms. Better answers recognised the role of high temperatures and heavy rainfall as well as the operation of humic acids and chelation related to the rapid decay of vegetation in TRF areas. The development of land forms was often poorly understood with very few answers that developed the key roles of granitic joint patterns, deep weathering and regolith stripping.

Coastal environments

Question 3

(a) There were some excellent responses, but many answers were unbalanced in that they did not cover all three zones, namely the beach, dunes and salt marsh. Sometimes, beaches were ignored whilst others gave overlong accounts of constructive and destructive waves, off shore bars, longshore drift and the subsequent formation of spits. Dunes rightly featured prominently in most accounts with better answers explaining the role of vegetation and an understanding of the various stages of development. Saltmarshes were the least well explained with only the best answers emphasising tidal ranges, deposition of mud and the colonisation by salt tolerant vegetation.

(b) Most candidates demonstrated a good understanding of the marine processes that operate along the coastlines. Less successful was the description of sub aerial processes. Freeze-thaw was often given prominence despite the fact that it is generally rare in coastal locations. The role of mass movement and the slumping of cliffs were introduced only in better answers. Most examples of coastal land forms were generic, although there was far more realisation of the role of geology than has been the case in the past. Better answers were those that evaluated the contribution of marine and sub aerial processes as well as geology to the formation of specific land forms along coastal stretches that had been studied.

Question 4

(a) Characteristics of coral reefs and the conditions that are required for their existence are now well appreciated by most candidates. The problem with many responses to this question was the inability to relate this knowledge to the importance of sea level change. The better answers explained the influence of sea level on the conditions for coral development and then explained the theories of reef and atoll formation as suggested by Darwin and Daly in terms of sea level change and the corals ability to keep pace.

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(a)   Most correctly associated the generation of tsunami with earthquakes or volcanic activity. Far fewer, however explained this in terms of the large scale displacement of sea water. Better answers utilized the tabulated information to explain how the impact of tsunami varied with distance from the epicentre and with the nature of the coast. Weaker answers dealt only with the human impact of tsunami and often completely ignored Table 1 and the location of tsunami within the Pacific.

(b)   This produced a very wide range of response. Many dealt almost exclusively with the human responses to volcanic eruptions contrasting MEDCs and LEDCs in their ability to predict eruptions and evacuate at risk populations. Often all erupted materials were assumed to be equally hazardous. Better answers distinguished between different types of eruption and classified the hazardous effects of erupted materials. Examples were used to demonstrate the hazardous impact and the various steps, including prediction, which can be taken to limit volcanic hazards.

Question 6

(a)   As has been noted in past examinations, the generation and nature of mass movements are not well understood. This proved to be the case in this examination. Avalanches were the most popular choice but both the causes and nature of snow avalanches were rarely described with any accuracy. Landslides and mud flows were often treated as synonymous features and their causes were simply ascribed to heavy rainfall or deforestation. The role of geology was only mentioned in the best answers.

(b)   The nature and development of tornados is now much better understood than was the case in the past. The generation of tornados is very complex and there were a number of excellent attempts at explanation that included the meeting of warm moist air and cold dry air, rapid uplift, upper air inversions with wind sheer inducing a rotating vortex and funnel. Weaker accounts glossed over the generation of tornados and concentrated on their dramatic impact in terms of uplifted cars and exploding houses. They often ignored the high wind speeds, torrential rain and extreme low pressure.

Arid and semi-arid environments

Question 7

(a)   A minority of answers sacrificed marks by not producing a diagram, whilst others merely reproduced a textbook panorama of a desert piedmont. Those that recognised the mesa/butte gained marks for accurate representation and descriptions. Explanations, however, were very limited as only a handful of responses made any attempt to explain the processes of pedimentation.

(b)   This was generally well answered with some very good responses. Most were able to explain xerophytic and phreatophytic adaptations of plants and better answers exemplified these well and included other adaptations such as seed dispersal to allow germination in infrequent periods of rainfall. Animal adaptations are now much better understood and often very well exemplified. The better accounts organised these examples into particular classes of adaptations.

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(a)   The relatively few answers made little distinction between arid and semi-arid climates apart from annual rainfall totals. It was assumed that both climates had precisely the same causes such as sub-tropical high pressure, rain shadow or continentality. The role of the ITCZ in producing rainfall in semi-arid areas was developed in only the best answers as were annual and diurnal temperature ranges, seasonal and episodic rainfall and wind energy.

(b)   Many candidates saw this as an opportunity to describe the detailed case study that had been prepared to explain the causes of desertification and the means to overcome its effects. Whilst these studies could have been made relevant, relatively few were. Climate was often completely ignored as was sustainable development. Those that had not prepared a case study often gave lists of activities such as nomadism, car rallies and developments such as the Aswan Dam.

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| **Advanced Human Options** |

Key Messages

- Deconstructing each question into its constituent elements and ensuring that each one is addressed is recommended.
- In choosing which questions to answer, questions which have resources to interpret are no less demanding than those without resources and should not be viewed as easier.
- The mark allocation for parts **(a)** of 10 marks and parts **(b)** of 15 marks indicates how to divide the time available to best effect. Some candidates write as much or more for **(a)** than they do for **(b)**.
- Arguments in response to parts **(b)** need to comprise analysis based on evidence rather than just stating an opinion or view without the groundwork of argument and support.

General Comments

Of the four Options, **Environmental management** and **Global interdependence** remain the more popular. **Economic transition** is growing in popularity and can be combined successfully with **Production, location and change** in relation to its industrial content.

Amongst the resources contained in the Insert few candidates interpreted the compound graph, Fig. 2, effectively, see comments on **Question 5(a)(i)** below. Most choosing **Question 8** managed to read Figs 3A and 3B, it was the comparison of their patterns in **(a)(i)** which proved challenging. Teachers are encouraged to use as wide a variety of resources during the course, both from past papers and from other materials, to develop skills of close observation, interpretation, suggesting explanation and critical appreciation.

The majority of candidates provided two full responses in satisfactory to very good English. Some need to be reminded to structure their response in paragraphs in the extended writing for part **(b)** rather than writing continuously. It remains the case that those who produce notes or some form of separate points for **(b)** receive an award within Level 1. A few incomplete scripts with parts missing and a few unfinished scripts which finished mid-sentence were seen. The few rubric errors were committed by those with very little to say who provided three or four brief responses, usually one per Option.

Comments on Specific Questions

Production, location and change

Question 1

(a) (i) This was an opportunity to demonstrate knowledge and understanding of agricultural production by integrating it with content from Fig. 1 from the unfamiliar context of Burkina Faso. Some very good developed reasoning was seen especially in relation to seasonal drought, poverty and issues of remoteness and accessibility. At the lower end of the spectrum of achievement, candidates simply lifted one or more key words from the text in Fig. 1, providing statements rather than reasoning.

(ii) A full answer consisted of three developed 'ways'. There were many valid responses including HYV seeds, chemical fertilisers, irrigation schemes, improved breeding programmes for cattle, and education and skills training for farmers. Some candidates put this in the context of a shift from subsistence to commercial agriculture, or from pastoralism, which could be partly nomadic, to a mixed settled system of agriculture. Some candidates gave more than three ways which is not good practice. In other responses the 'ways' were embedded in an undifferentiated paragraph leaving the Examiner to identify them.

(b)   Of the two elements in the question, management and the evaluation of success, there was little management content in many responses. In the case of agricultural change, management could comprise an outline of the policy or initiative in terms of where, when, by whom, how it was funded, how it was organised. So, for example, a local initiative in a named area, organised by a Ministry of Agriculture in collaboration with a particular agricultural training college and agricultural extension officers, funded by national government and a major donor such as UN FAO and organised through informal networks based in villages where training was located and through which marketing is organised by the initiative. Beyond this 'how the change was managed' in the question could include some value judgements, such as 'very well from start to finish' or 'poorly, given farmers' resistance to change and the bad reputation of project leadership in the local media'. Candidates chose appropriate cases of agricultural change, although some, especially the Green Revolution, could be vague, lack detail and be about the chosen country in name only. Some smaller examples from a specific area, named location or particular holding, performed very well indeed both in terms of management content and in terms of the evaluation of success. The best evaluations were based on and supported by evidence, rather than just giving a view or appraisal. Evidence of positive outcomes could include increased productivity, higher outputs, greater product quality and diversity and improvement in income or standard of living. Negative evidence could include elements such as soil erosion, diminishing returns, salination, indebtedness and increase in income disparity between producers. Examiners credited detail such as data, analysis and argument as well as the overall evaluation.

Question 2

(a)   All candidates had an appropriate industrial policy to use from the case study in the Syllabus (**1.4**). Some used content from more than one phase of that policy, which was valid but not necessary. It is possible that this approach made explaining 'changes' easier, as one could be compared and contrasted with the other. Most responses could have been improved in either or both of the following two ways; firstly, by ensuring that all three elements, 'character, location and organisation' were covered in the explanation. Examiners were looking for the presence of each of these elements rather than perfect balance in coverage between them. Of the three, location was often the strongest. The use of place names, SEZs, EPZs, etc. assisted this. The second way in which responses could have been improved, and time saved maybe, was in the structure of the responses. It was common to find a description of the country's industrial policy in general first, sometimes extending to more than one side of answer paper, followed by an explanation of similar length about changes. Higher-skilled responses integrated the two components after an initial introduction and before a brief summarising conclusion. This tended to produce more concise and more pertinent writing.

(b)   Many candidates produced a straightforward developed list of locational factors, 'One factor is raw materials … Another factor is markets … Another …' with limited reference to the necessary examples and little or no assessment. This approach demonstrated theoretical knowledge of the location of manufacturing and related service industries, without satisfying two key elements of the question. Better responses tended to be example-based rather than factor-based. Whilst many candidates used text book examples from other countries, such as Cambridge, UK, or Silicon Valley, USA, some good use was made of exemplar content from candidates' home countries such as Kenya and Zimbabwe. These tended to be more up-to-date and more accurately deployed, perhaps because of familiarity with location and context and understanding of culture. The word 'recent' was included in the question to avoid historical treatments and to encourage a contemporary approach, for example in which transport and government policy for example in attracting FDI could be significant. The syllabus dateline is 1970 for guidance. A much more up-to-date approach, for example over the last decade, or during the life of a country's particular 5-year plan, was fully acceptable and, where taken, performed well.

Environmental management

Question 3

(a)   Most candidates produced two fundamental explanatory factors affecting demand: level of development and population size, with appropriate examples of countries. Beyond this many only considered domestic demand for cooking, heating, lighting and appliances, contrasting poor households in a tropical country with the energy-hungry demands of the USA for example, requiring heating in winter, air conditioning in summer and running multiple appliances, computers and gadgets in home, home office and garden. Better responses considered total energy demand from all sectors, notably transport and manufacturing. Few included demands from services, such as schools, hospitals, shops and tourism. Valid links could be made to resource availability and resource exploitation however in so doing it was important to link this to demand for energy, rather than to write about energy supply. A significant proportion of responses addressed 'country to country' but omitted 'year to year' and were written in a static way. Others included time but on the wrong timescale, focussing on seasonal changes for example in the agricultural sector or for heating homes. The highest-scoring responses to this element were framed in a dynamic way and considered two or more elements of change, such as industrialisation in LEDCs and NICs and population growth increasing demand, and deindustrialisation in MEDCs and energy conservation initiatives working to reduce total energy demand however slightly. Catastrophic explanations based on conflict and hazardous events tended to perform less satisfactorily.

(b)   Deconstructing this part question identified three key elements: the environmental impact of energy production, changes in energy strategies and the need for evaluation of extent. Of the three, it was the environmental impact of energy production, especially in relation to the burning of fossil fuels, which was covered the best. At the top end, some excellent summaries of global warming and environmental degradation of terrestrial environments were seen. Some included the environmental impact of the nuclear disaster at Fukushima in 2011. Lower down the spectrum of achievement there was satisfactory reference to atmospheric pollution and global warming, although at times this was confused with the hole in the ozone layer. One discriminator was the ability to link environmental impact to changes in energy strategies. Some made big claims about "all countries" or that "many strategies have changed" without supporting evidence. Others took a careful look at a changing strategy such as that of China, before making briefer comments on others, such as Germany or the UK, creditably. The highest-scoring responses addressed the element of extent directly by considering factors other than environmental impact and/or by considering energy strategies which remain unchanged despite their environmental impact. For both of these arguments, issues of energy security, cost and political decisions were pertinent. In providing evidence many responses operated at the level of country name only. The best provided detail such as dates, percentage data, named locations and initiatives, and costs. Providing detailed evidence of environmental impact was more difficult, although a few provided data of greenhouse gas emissions and specific information about targets of the Kyoto Protocol, for which see http://unfccc.int/kyoto_protocol/items/2830.php for reference.

Question 4

(a)   Many answered this satisfactorily, combining human factors and physical factors and interpreting the two photographs robustly and creatively. As knowledge of the two locations was not expected, sometimes called 'unfamiliar contexts', Examiners credited reasonable interpretations of the evidence and reasoning that was geographically robust. Overall, reasons related to Photograph A were more numerous and of higher quality. The best responses addressed the idea of vulnerability directly and consistently, building up a fabric of interactive reasons in a number of dimensions. For example, in Photograph A, the location on the edge of a town (human settlement) and by a road (passing traffic, dumping) made it vulnerable. So, too, did a combination of lack of provision of waste disposal by the authorities; ignorance of the implications of illegal dumping; and population pressure as the limited systems or means of disposal struggled to cope with an increase in waste. In Photograph B the strongest responses considered the consequences of deforestation and of profit motivation and market demand where valuable mineral resources are found. Credit was given to reasoning which extended beyond the photographs identifying to other environments at risk but this was not necessary for a full response. At the lower end, candidates tended to describe what could be seen in the photographs, rather than suggest reasons as asked.

(b) Some excellent analysis and argument was seen which addressed the issue of extent directly and contrasted attempts at protection in two or more named locations in some detail. In so doing the role of factors facilitating or supporting environmental protection, such as secure funding and the co-operation of different groups of people were highlighted. So, more commonly, were constraints such as conflict, indebtedness, transborder issues, lack of education, spatial scale, corruption, vested interests, etc. assessed. Middle quality responses characteristically took a narrative approach, often spending too much time telling the story of a degraded environment and what caused it, instead of focussing on the key idea of protection of the environment. This was an example of not being able to use a case study in a manner other than that in which it had been learned or used previously. At the lower end, responses were often vague, for example about the Amazon or the Sahel in a broad manner, or, again, about environmental degradation rather than environmental protection, so obscuring the question. Some offered a simple view, such as 'to a certain extent' or 'it is possible but difficult', without giving the evidence or providing the argument to support this.

Global interdependence

Question 5

(a) (i) A full response required a focus on changes in some (but not necessarily all) the components of government aid shown in Fig. 2, with some data support. Providing this data support effectively involved years read from the x axis and US$ billions read from the y axis or some manipulation of this data, such as 'humanitarian aid more than doubled between 2000 and 2009'. It was the y axis which many candidates did not understand. In this sort of graph, a compound graph, the components are stacked one on top of the other. So, for example, total government aid in 2000 was approx. US$79 billion, but debt relief in 2000 (in red) was only approx. US$2.5 billion. Many recognised the main changes occurred in debt relief, especially in the period 2004–07, and in bilateral aid (in the darker blue). Fewer could support these and other changes accurately.

(ii) A full response consisted of two or more valid reasons for the changes in aid, such as international commitments to debt relief (G8, UN, HIPC), the incidence of disasters requiring humanitarian aid or the impact of the global recession on aid budgets in MEDCs. Some perceptive reasons were offered with evidence. At the lower end responses were vague and had little explanatory vigour, such as 'they needed less help' and 'because more aid was needed'.

(b) Most candidates outlined the role of the World Trade Organization (WTO) in promoting fair trade and resolving trade disputes satisfactorily. Some provided sharp accounts of its role, supported with detailed evidence such as dates, activities, countries and a few candidates integrated quotations from politicians, leaders or economists to enhance the quality still further. In almost all responses the element of trade agreements was briefer and formed a subsidiary part of the writing. Most used a trade bloc, such as the EU, NAFTA or ASEAN. Some used material about a particular product such as cocoa, cotton or bananas. Most candidates pursued the WTO's role in promoting fair trade between countries. Some candidates also considered Fair Trade as another type of trade agreement. For an introduction to Fair Trade see, for example, http://www.fairtrade.org.uk. Higher-scoring responses maintained a focus on the key idea in the question of 'in promoting economic development through trade', making links between trade and economic development. These links included export earnings as finance and who is advantaged and disadvantaged by trade. Many offered the view that MEDCs dominate the WTO and that LEDCs still lose out despite activity in changing terms of trade in their favour. Others considered the dumping of goods in LEDCs by producers in MEDCs and its negative impacts on the national economy and local producers. A few mentioned the failure of the Doha Round of talks creditably as part of the evaluation offered. Middle quality responses could in general have been improved in two ways; firstly, by incorporating some illustrative detail, although a broad approach was legitimate, and, secondly, with more evaluation. Many wrote what they could recall about the WTO and trade agreements first, on one or two sides of paper, and only offered a brief evaluation in a final concluding paragraph, which limited the overall outcome within Level 2 (7–11/15 marks).

Question 6

(a)   The tightest responses were carefully worked to feature a combination of factors influencing growth and development. Some concentrated on attractions and supply factors too much. The most effective explanations combined supply factors, e.g. the environment, hotel provision; demand factors, e.g. fashion, longer paid holidays, the emerging middle class in China and India; and facilitating factors, e.g. media, advertising, budget airlines and the powerful role of the Internet in different ways from research to flight and accommodation booking. Comprehensive responses were not required. Any tourist area or resort could be taken. Locational detail could be named features such as beaches, coral reefs or national parks; names and dates of events and advertising campaigns; specific developments in infrastructure (such as the name of an airport or the number of a road) or names of hotels or companies. Many responses operated at the level of a named country, such as Kenya, a named resort, such as Victoria Falls, or a named area, such as the Costa del Sol, without offering this kind of detail. Some candidates tried to take the life cycle model of tourism as the vehicle for answering **(a)**. This was difficult to handle for two reasons. The first is that as with all models it is descriptive rather than explanatory, so was blunt and yielded few factors without careful treatment. The second is that its many stages made it cumbersome and time-consuming to use. That said, it did stimulate some coverage of factors causing decline in the chosen tourist area or resort which within the context of 'growth and development', was creditable.

(b)   The majority of responses took the simple definition of carrying capacity as the maximum number of tourists that a location can support without deterioration in environmental quality and social wellbeing (the definition that includes the deterioration of the tourism experience for visitors was not relevant given the wording of this part-question). Some candidates deployed effectively a more developed definition of carrying capacity as physical, psychological, etc. Attempting to use the demographic definition of carrying capacity from the Human Core in Paper 1 was inappropriate for a question on tourism. Overall responses were strongest in elaborating different problems that tourist destinations face; environmental, social, economic and, maybe, political. Amongst these the best were based on or supported by specific evidence and locational detail. Many of these responses used an analytical framework which divided the chosen problems into those that could be linked to carrying capacity, such as congestion or lack of water supply, and those that could not, such as terrorism, health scares or a change in fashion. Some used an example of ecotourism carefully to demonstrate the usefulness of carrying capacity in the careful restriction and monitoring of numbers to preserve the environment and traditional society. Although not necessary, many high-scoring responses integrated content from Doxey's Irridex in assessing social wellbeing of the local host population.

Economic transition

Question 7

(a) (i)   Responses tended to be more successful than to **(ii)**. A number of ways were identified, such as providing food for survival, a raw materials base for an emerging secondary sector and for power, export earnings and employment for many/most people in an LEDC or at an early stage of the path to development. Two or more of these points could be described, developed and/or exemplified for full marks.

(ii)   This sub-part was higher order, requiring explanation, and more demanding conceptually, being about the primary sector as a constraint. It functioned as a discriminator within **(a)**, with most candidates achieved some marks and few gaining 4 or 5/5. A number of explanatory points could be offered of which low added value/low profit was one; its' being an unreliable and unstable foundation for economic development being a second; and its' restricting skills development and entrepreneurship being a third. Some candidates seemed unaware of any limitations or wrote vaguely about 'problems', scoring few marks, if any.

(b) Some truly impressive work was seen based in and developing from one or more case studies. Whilst one example was fully sufficient, some candidates compared an example of relative success with one of relative failure, highly effectively. Any case studies were valid (MEDC, NIC, LEDC). Examiners commented on some impressive use of examples of NICs in terms of depth, detail and comment. The best unpacked the concept of development, rather than taking it at 'face value' or leaving it 'to speak for itself'. For example, in some responses, 'success' was evaluated in terms of changes in measures or indices of development such as infant mortality rate, life expectancy, literacy, GDP per person, poverty (e.g. earning less than US$1.5 per day), the GINI coefficient, human development index (HDI) or physical quality of life index (PQLI). Others referred to negative impacts qualitatively such as increased regional disparities, the advantaging further of those already advantaged socially and economically and negative environmental impact with its consequences for local residents and ecosystems. Most candidates took 'industrial growth' in the question as meaning manufacturing, although any industrial sectors could be used legitimately. Strong responses outlined the chosen 'attempts' in terms of policy and provided detail such as who, what, where, when, why, how it was financed, aims, etc. At the lower end some responses operated at the level of country name only, such as 'India', and comprised writing about manufacture that was so broad that it was indistinct and could have applied to a number of countries. One further discriminator, in common with part **(b)** of all questions, was the approach taken to the evaluative demand and the relative strength of skills in, and the language to express, the assessment required.

Question 8

(a) (i) The demand to compare the patterns was relatively demanding as the links between Figs 3A and 3B were unclear. Some candidates claimed correspondence that the evidence did not support, such as 'a North/South divide'. Most gained some marks from looking at Santa Cruz, Neuquén and Buenos Aires on Fig 3A, all very high/high HDI in the light of differing population density. Few summarised the range of population densities for states with high HDI (mid-blue). Some picked out and named the states with medium HDI (pale blue) perhaps listing the different population densities there without clear links. Stating that the evidence was varied and complex and the links unclear was itself creditable within the six marks available.

(ii) This did not need to be linked to Argentina, but could be if candidates chose to treat the demand this way. Few candidates grasped the key idea of 'very high levels'. Most wrote about how social and economic wellbeing in peripheral areas might improve. The best-directed responses could achieve full marks readily for two developed 'ways'. One example would be through the development of the periphery as a resource-frontier region (Friedmann) in terms of mineral extraction or the development of tourism, especially if this was well-managed to avoid leakage and benefit the locality rather than a foreign TNC. Some wrote convincingly about regional policy and investment in sectors such as education, healthcare and transport in the periphery. Another fruitful theme to explore was spread effects from the core, for example involving the location or relocation of businesses to gain some of the positives of the periphery such as higher quality environment, higher quality of life, room to expand, market penetration, etc. with the associated local multiplier effect into wellbeing. Some suggested 'trickle down' from the core without recognising that this process would be relatively weak and unlikely to achieve the very high level of wellbeing in the question.

(b) Most responses would have gained from an enhanced understanding, and/or handling, of the concept of the globalisation of the world economy in terms of the interconnectedness of the world's economic functions. One thing to explore was how truly global, i.e. involving the whole world, the world economy is from TNC activity. Another approach was to consider other factors, those which were significant other than TNCs, such as changes in transport and communications technologies, the world opening up politically or the action of trade blocs or supranational bodies such as the WTO, IMF and World Bank. Many candidates wrote appropriately about access to resources and markets and TNCs' cost minimising and profit maximising behaviours. Weaker responses tended to comprise unsorted recall knowledge of one TNC, providing a profile which was not directed to the question set, and a simple opinion such as 'I agree' or 'I agree to a certain extent' with little or no related support to substantiate it. A few highly articulate and individual approaches to the question were seen which 'questioned the question' in an impressive manner, for example arguing for the growth of TNCs' being as much the consequence of globalisation as the cause of it, or being relatively dismissive of TNCs in favour of a detailed assessment of the key role of technological innovation in transport, communications and production.

GEOGRAPHY

> **Paper 9696/32**
>
> **Advanced Human Options**

Key Messages

- Deconstructing the question into its key elements and addressing each one is a skilled approach to take which the marking criteria reward.
- Using examples and case studies from either home country, or the home region, principally Asia, is a good strategy. Candidates' familiarity with location, context and culture comes across in the writing and in the manner in which the material is used.
- Higher order awards are given in parts **(b)** to those who provide evidence-based analysis and argument in an evaluative response. 'Telling the story' is a lower-skilled approach showing knowledge.

General Comments

This was an impressive cohort with many satisfactory and many high quality responses from both well-established centres and those new to entering candidates for this examination.

Standards of English language and expression were sound to high, with lapses being rare. Many candidates across the ability range provided well-organised and carefully structured responses. These suggested effective training in examination technique and essay writing. Responses also demonstrated candidates' ability to 'think like a geographer' in terms of addressing the question set, integrating examples, dealing with spatial scale and timescale, and producing responses which were multi-dimensional (social, economic, physical/environmental, political and, at times, as appropriate, historical).

Technical subject vocabulary was handled effectively by almost all candidates. The quality of some responses would have been improved by a better understanding of two terms: trends and dependency. Trends are changes over time. It is important for candidates to understand the differences between trend, level and pattern. The word trends was found in **Questions 1(a)(i)**, **4(a)** and **6(a)**. The word dependency was found in **Question 6(b)**. Dependency is the state of being dependent or reliant on something (or someone), in this case, tourism. The evidence from responses was that most candidates took the statement as 'tourism always leads to problems for economy, society and environment', rather than the full 'Dependency upon tourism always leads to problems for economy, society and environment'. As such most wrote a general 'the problems (and benefits) of tourism' response, rather than one about the special circumstance of dependence. See question-specific comments below.

The resources in the Insert were interpreted appropriately by almost all candidates. Description of Fig. 1 in **Question 1(a)(i)** needed dates to be read from the x axis and data from the y axis, rather than taking an impressionistic approach to the trends shown. The cartoon in Fig. 2 was understood for its message about the relative reliability of two different ways of supplying electricity. Fig. 3, the map of selected trade flows within the global south was read appropriately by most. The arrows needed to be understood as being regional flows to and from the greyscale shaded regions rather than from the countries at the ends of the arrows; so 'Asia' rather than 'China' and 'South and Central America' rather than 'Brazil'. The data table posed no difficulties of interpretation although some candidates missed the decreases. Teachers are again encouraged to prepare candidates using a wide variety of resources during the course. This examination session, Paper 31, 33 for the other time zones, included an extract from a report (Fig. 1); two colour photographs (Photographs A and B), a compound graph (Fig. 2) and two choropleths (Figs. 3A and 3B) by way of further illustration of the interpretative skills expected for this examination.

Comments on Specific Questions

Production, location and change

Question 1

(a) (i) This was answered effectively by most candidates and very well by some. A full response identified three sections to the graph, including the crossover point, recognised changes in rates of growth of food supply and population and offered some data support (dates, measures) for both.

(ii) The best responses identified '**three** ways' clearly, and gave a brief outline of each. Examiners reported that assessing undifferentiated descriptive accounts of how food production increased was less satisfactory and that simple identification such as 'by using irrigation' was insufficient for an effective outline. Compare for example, a candidate writing 'introducing irrigation to overcome a lack of water supply or seasonal drought, by dams, boreholes and field equipment such as sprinklers'. Some candidates confuse the functions of pesticides and inorganic fertilisers. The highest quality outlines often contained specific named or located content, for example relating to the Green Revolution in India or government programmes in Malaysia.

(b) Most responses addressed increasing food production in a broad way, showing knowledge and understanding of agricultural change, in the past, or sometime in the present, rather than the future, which the question required in the phrase 'certain to increase'. More candidates were able to consider the positive aspects, such as increased yields, than the negative aspects. A few candidates applied material about constraints that had operated in the past or about problems caused by previous changes in food production to the question, by writing that this could happen again. This showed skills in the selection, application and direction of knowledge to the actual question set. For example, material on farmers' indebtedness that had resulted from the Green Revolution, or about experiences of diminishing returns and environmental degradation could be used to demonstrate that food production is not certain to increase. Higher quality responses addressed the word 'certain' directly, for example by identifying elements of relative certainty and relative uncertainty relating to increasing food production. They were also based on one or more named, located, examples, some using a case study impressively in depth and detail.

Question 2

(a) (i) The wording of the question put the focus on the term informal sector for definition. Some candidates interpreted the demand as asking for a description of the character of the informal sector. Whilst elements of this could be relevant, credit was awarded for the key idea that it is that part of the economy operating outside official government recognition in terms of registration, legislation, taxation, etc. Two main types exist: casual, temporary or unpaid jobs, such as subsistence agriculture for survival; and unofficial earnings from work such as vending or from black market or illegal activities.

(ii) Most candidates made the point that the informal sector's impacts, both economic and social, are much greater in LEDCs than in MEDCs, given the nature of their economies and the percentages of people involved. Estimates for MEDCs range from 5 to 15%; for LEDCs from 48% of non-agricultural employment in North Africa, to 65% in Asia (although accurate statistical information is difficult to obtain). Another valid approach was to compare the informal sector's impact in two countries, such as Jua Kali in Kenya and the USA for its casual jobs and some illegal activities. Those who identified specific economic impacts, such as providing income to avoid poverty and starvation; and social impacts, such as a gaining work skills and experience that could be later translated into employment in the formal sector, did well. As the question asked how the impacts vary, not why they vary, no credit was given for explanation.

(b)   This broad question established an evaluative demand allowing candidates to make best use of their material on 'industrial change'. It was valid either to interpret this as all industrial sectors (primary, secondary, tertiary, and, maybe quaternary) or in the narrower sense of manufacturing, with or without related service industry. Many used a case study effectively, combining it with other observations to satisfy the plural 'examples' in the question and avoid a maximum of 10/15 for the use of a single example. Indicators of quality included strong conceptual understanding of industrial change; detailed knowledge, e.g. named locations within Shanghai, rather than 'e.g. China'; and skills in argument and counter-argument. Candidates could outline government policy, such as a 5-year plan or policy establishing EPZs or SEZs, and make links to other elements influenced by government such as transport infrastructure or education, before considering 'other factors' under little or no government influence. These included advantageous location, the global economic climate, globalisation and the effects of outsourcing and offshoring, and the strategic choices of TNCs as profit-maximisers seeking a greater market share through entry to new markets. Given that the question was 'how far do you agree?', those who wrote simply 'I agree that …' and then narrated examples of industrial change, rather than producing a fully evaluative response, received lower marks.

Environmental management

Question 3

(a)   The cartoon challenged the prevalent views that renewable sources, such as wind power, are 'the answer' and that thermal power is 'a problem' given resource depletion and environmental degradation linked to climate change. The cartoon questions wind power for its unreliability and reminds the viewer that coal- and gas-fired power stations are reliable (as long as fuel supplies are maintained). The best responses were clearly problem-based and identified cost, the challenge of meeting increasing demand, a mismatch between the location of power generation and demand, transmission problems, issues of sustainability and of energy security. Comprehensive answers were not needed. A response based on one problem, such as relative reliability was marked using a maximum of 6, given that the question was about 'problems' plural.

(b)   This part-question focused on the issue of water quality and service provision relating to sanitation. No knowledge of the UN's Millennium Development Goals (MDGs) was expected, so the fact that the target for safe water supply was met in 2012 was not relevant to the argument sought. Most candidates developed a response based on a number of factors which make meeting the target difficult. These showed knowledge and understanding of water quality, for example the sources of water pollution and transborder issues, as well as of constraints, such as population increase, climate change, lack of finance, challenging scale, poor governance and their being other priorities in LEDCs. Those priorities could include increasing food supply, improving education and healthcare or dealing with catastrophes and conflict. Indicators of quality in responses included located evidence in support of the argument and acknowledgement of positive progress despite the difficulties in named schemes or initiatives such as the work of the NGO WaterAid, see http://www.wateraid.org. Balance was not required, but the best responses made explicit reference to 'basic sanitation' such as the provision of mains drainage or toilet blocks in slums and shanty towns, as well as to 'access to safe water'.

Question 4

(a)   Most candidates were able to answer at the aggregate level, LEDC/MEDC. Fewer had specific information to offer either about individual countries in both groups, or about trends in consumption of the different fossil fuels (coal, oil and gas). Some responded effectively comparing two countries, such as China and USA, or, after general comments, focussing on one fossil fuel, usually coal. The explanation of trends was based on concerns in MEDCs (and beyond) about resource depletion, environmental impact and energy security; and, in LEDCs, also about issues of cost, technology and the need to meet rising demands from both industrialisation and modernisation. The best explanations were multidimensional (physical, economic, social and political) and dynamic. Most recognised the implications of consumption of alternative energy and some acknowledged the impacts of deindustrialisation, greater energy efficiency in contributing to flattening or decreasing trends in fossil fuel consumption in MEDCs. At the lower end of the spectrum of achievement, some candidates interpreted fossil fuels mistakenly as including fuelwood; wrote about renewable energy at length as well as non-renewable; and rather than writing about changes over time (trends), instead wrote about levels of consumption, which made the account static rather than dynamic.

(b)   The selection of a degraded environment was done effectively and a wide range of case studies were seen, both rural and urban, at a number of scales. These ranged from a farm, river or tourist destination, to national initiatives, supranational schemes, for example in the Sahel, and global environments, such as the atmosphere in relation to greenhouse gas emissions. Regardless of scale, better accounts integrated located detail and evidence. Examiners observed that many candidates spent too much time outlining the context and describing the causes of the chosen environment's degradation, for which there was no credit. Better-structured responses established the context in an introductory paragraph before moving straight on to attempts at improving the environment, integrating evaluation as the response developed, rather than leaving the issue of effectiveness until the end. This evaluative approach was highly creditable and allowed different comments to be made about different attempts, providing a fuller and more in-depth evaluation than a summary comment could. The other main way that responses could have been improved was by articulating clearly 'the challenges which remain'. Some candidates missed this final element altogether and some lacked time to write anything of substance. In other responses, Examiners needed to search for relevant content embedded in the main body of the text to award credit. Candidates who had deconstructed the question at the outset, planned their response accordingly and then managed the time well, performed better.

Global interdependence

Question 5

(a) (i)   A full response comprised reference to each of the flows or pairs of flows in Fig. 3 with some data support. It was possible to achieve the marks concisely with careful reference to the information given and identifying net inflows, such as Central and South America and net outflows, such as from Asia. Some candidates referred to this shaded region incorrectly as 'China', but were not penalised.

(ii)   In many cases this explanatory demand was met better than the interpretative demand in **(i)**. Comprehensive answers were not needed for the modest mark allowance. Instead, Examiners were looking for a number of developed reasons and an appreciation of factors such as changes in the global economy, including the emergence of the BRICS and deindustrialisation in MEDCs; changes in trade blocs, such as the establishment of NAFTA, and in trade barriers; product innovation and the product life cycle, for example global demand for copper or for coal; and the contribution of transport technology and costs, for example in outsourcing production.

(b)   Most candidates wrote about trade being fair – and unfair – in the general sense of the word. Some included content about Fair Trade in the technical sense to good effect. For example, some showed how Fair Trade agreements help growers financially and empower them, but how its effects remain small scale. Less firm conceptually was the approach to 'aid'. A significant number of candidates took this to mean help or assistance in the broad sense rather than aid as defined in the syllabus as relief aid, development aid, tied aid and bilateral or multilateral aid. This produced a rather weak response which could receive only limited credit. Indicators of quality in responses included the use of located examples to support and to further the argument. The case of Haiti following the devastating earthquake in 2010 was used, for example, to show that in such circumstances aid was needed in the immediate aftermath of the disaster and for years after because of the country's poverty, its low trade base and the great need for rebuilding. Some good use was made of knowledge of the work of NGOs in offering aid; and of the WTO in governing world trade. The best responses were presented in an analytical and judging manner, for example observing that whilst the WTO is working to integrate LEDCs into world trade in a fairer way, it is criticised for being dominated by MEDCs and still favouring their trade needs and trading patterns. In other responses there was evidence of confusion about the supranational bodies WTO, IMF, World Bank and UN.

Question 6

(a)   Many candidates took the growth in international tourism as the only trend. Some were also able to identify other trends, such as the emergence of one or more forms of niche tourism, for example ecotourism, adventure tourism or medical tourism; increasing concern for sustainable tourism; decrease in popularity of mass tourism in some locations, such as the Mediterranean; or the emergence of new markets, for example amongst the middle class in China. Two or more trends were needed for a full response. Better quality responses were able to provide a description which included some specific information, such as data on tourist numbers, tourist locations or estimated income from tourism. In many answers the explanation was more effective than the description, and in some there was almost no descriptive content, simply a mention of a trend such as 'growth'. The best explanations combined three types of factors: demand factors, such as more disposable income and longer holidays (or retirement); supply factors, such as the availability of hotels or holiday packages; and facilitating factors, such as improved transport, Internet bookings, and the all-important roles of media and advertising in bringing new, and often exotic, destinations to the attention of those seeking different holiday experiences. Some linked this to the life cycle model of tourism, for example as interest wanes in destinations which have been visited before and which are beginning to show their age in terms of deteriorating facilities and attractions.

(b)   Most candidates treated this as a question about problems caused by tourism, which it was in part. Few paid sufficient attention to the key concept of dependency, or responded to the word 'always' in the statement, in order to perform well and receive the highest level of award. In these lower-skilled responses the selection, application and direction of learned material to the actual question set was limited. Material was not used in a manner other than that in which it was learned. So, for example, some responses were about the problems of tourism and the benefits of tourism, which could only be credited if it was linked to the idea of dependency. One indicator of quality in responses was the definition of dependency at the outset, for example offering percentage data of those employed directly and indirectly in tourism, or of dollar income. Another was relatively balanced attention to 'economy, society and environment'. Another was the ability to provide an argument and a counter-argument in order to satisfy the question's 'how far do you agree' explicitly. Almost all candidates were disciplined in providing the one example or case study required. These varied in quality from examples in name only, 'e.g. Spain', to those with detail of named locations, such as a particular beach or forest; named hotels or companies operating; specific events or incidents relating to tourism; or quotations from local leaders, government officials or someone in the tourism business, such as a hotelier. Whilst a candidate would not be expected to have all of these, this gives an indication of the kind of detail in terms of evidence that is expected at this level.

Economic transition

Question 7

(a) (i)   Most candidates addressed the term satisfactorily and gained the first mark. Few could provide the development either by direction (inward/outward) or in terms of what is invested in, to secure the second mark.

    (ii)   Some of a candidates' own input in reading and interpreting Table 1 was needed, to convey a sense of 'pattern'. Simply rewriting the data table in words was not enough. Many candidates answered well on the dynamics within their own region, Asia. Few wrote convincingly about trends in Africa and South and Central America. Reasoning could be drawn from specific knowledge of events or from wider understanding of the global economy, policy within the world region or the development of individual countries such as China or Brazil.

(b) Examiners commented on the quality of responses to this part-question, for which understanding was satisfactory to very good. Indicators of quality included firstly, consideration of GDP, both in total and per person (capita), and in relation to purchasing power parity (PPP). Secondly, many candidates considered other economic measures, such as the Gini coefficient, helpfully, to consider disparity and other single criterion measures, such as life expectancy or infant mortality rate, pointing out that social wellbeing matters, as well as economic wellbeing. Some could then take this a stage further to consider the importance of matters such as gender, political enfranchisement and environmental sustainability. Many wrote about the superiority of indices or multiple criteria measures, such as HDI or PQLI, although few presented their components accurately. Finally, some acknowledged difficulties in gathering reliable statistical data for any measure and so offered a further critique of 'the best way' based on issues such as access, scale, operator error and government interference. At the lower end, some responses were developed lists describing different measures with little or no evaluation. Whilst showing knowledge of the subject area, these received lower marks and could be improved by an attempt to answer the question set by more than simple agreement with the assertion made there.

Question 8

(a) Effective responses were characterised by three main things. Firstly, a disciplined approach in providing the description asked for without straying into explanation; secondly, supporting that description with some data, locational detail, examples or other evidence beyond region names or broad zones such as 'coastal China'; and, thirdly, focussing on 'differences'. Some candidates interpreted this mistakenly as an invitation to write about regional policy which made **(b)** difficult to answer effectively, on the basis that all policy is 'human' in origin. A number of different countries were used well to answer this, notably China, Malaysia and Pakistan. Brazil is a classic case, but difficult to handle well in the time available because of its complexity, unless a few regions are featured such as the SE and the NE. China performed best when treated spatially rather than as simply urban and rural, which is not 'regional' in the strict sense of the term. The work of candidates who took a core and periphery approach could have been improved with greater attention paid to the periphery and to describing its character as more than 'bad' everything or the absence of the characteristics of the core.

(b) This evaluative demand gave candidates the opportunity to provide their own evidence-based analysis and judgement. Most provided a view which acknowledged the role of physical factors such as minerals, fertile soils, relative accessibility and location, especially as initial advantages, and which developed human factors operating beyond these, whether social, economic, political or historical. These human factors could be considered in both theory, for example using cumulative causation, and actuality, for example by considering the way that recent events linked to globalisation or the outworking of regional policy operated. Some very good, insightful responses were seen which impressed by overall perspective, being structured as assessments and by evidence-based argument leading to a summative evaluation answering the question explicitly. Lower-achieving responses tended to be narrative in approach, based on the learned case study, or simply to agree with the part-question rather than providing an actual answer to its 'How far?'.

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Key Messages

- Deconstructing each question into its constituent elements and ensuring that each one is addressed is recommended.
- In choosing which questions to answer, questions which have resources to interpret are no less demanding than those without resources and should not be viewed as easier.
- The mark allocation for parts **(a)** of 10 marks and parts **(b)** of 15 marks indicates how to divide the time available to best effect. Some candidates write as much or more for **(a)** than they do for **(b)**.
- Arguments in response to parts **(b)** need to comprise analysis based on evidence rather than just stating an opinion or view without the groundwork of argument and support.

General Comments

Of the four Options, **Environmental management** and **Global interdependence** remain the more popular. **Economic transition** is growing in popularity and can be combined successfully with **Production, location and change** in relation to its industrial content.

Amongst the resources contained in the Insert few candidates interpreted the compound graph, Fig. 2, effectively, see comments on **Question 5(a)(i)** below. Most choosing **Question 8** managed to read Figs 3A and 3B, it was the comparison of their patterns in **(a)(i)** which proved challenging. Teachers are encouraged to use as wide a variety of resources during the course, both from past papers and from other materials, to develop skills of close observation, interpretation, suggesting explanation and critical appreciation.

The majority of candidates provided two full responses in satisfactory to very good English. Some need to be reminded to structure their response in paragraphs in the extended writing for part **(b)** rather than writing continuously. It remains the case that those who produce notes or some form of separate points for **(b)** receive an award within Level 1. A few incomplete scripts with parts missing and a few unfinished scripts which finished mid-sentence were seen. The few rubric errors were committed by those with very little to say who provided three or four brief responses, usually one per Option.

Comments on Specific Questions

Production, location and change

Question 1

(a) (i) This was an opportunity to demonstrate knowledge and understanding of agricultural production by integrating it with content from Fig. 1 from the unfamiliar context of Burkina Faso. Some very good developed reasoning was seen especially in relation to seasonal drought, poverty and issues of remoteness and accessibility. At the lower end of the spectrum of achievement, candidates simply lifted one or more key words from the text in Fig. 1, providing statements rather than reasoning.

(ii) A full answer consisted of three developed 'ways'. There were many valid responses including HYV seeds, chemical fertilisers, irrigation schemes, improved breeding programmes for cattle, and education and skills training for farmers. Some candidates put this in the context of a shift from subsistence to commercial agriculture, or from pastoralism, which could be partly nomadic, to a mixed settled system of agriculture. Some candidates gave more than three ways which is not good practice. In other responses the 'ways' were embedded in an undifferentiated paragraph leaving the Examiner to identify them.

(b)   Of the two elements in the question, management and the evaluation of success, there was little management content in many responses. In the case of agricultural change, management could comprise an outline of the policy or initiative in terms of where, when, by whom, how it was funded, how it was organised. So, for example, a local initiative in a named area, organised by a Ministry of Agriculture in collaboration with a particular agricultural training college and agricultural extension officers, funded by national government and a major donor such as UN FAO and organised through informal networks based in villages where training was located and through which marketing is organised by the initiative. Beyond this 'how the change was managed' in the question could include some value judgements, such as 'very well from start to finish' or 'poorly, given farmers' resistance to change and the bad reputation of project leadership in the local media'. Candidates chose appropriate cases of agricultural change, although some, especially the Green Revolution, could be vague, lack detail and be about the chosen country in name only. Some smaller examples from a specific area, named location or particular holding, performed very well indeed both in terms of management content and in terms of the evaluation of success. The best evaluations were based on and supported by evidence, rather than just giving a view or appraisal. Evidence of positive outcomes could include increased productivity, higher outputs, greater product quality and diversity and improvement in income or standard of living. Negative evidence could include elements such as soil erosion, diminishing returns, salination, indebtedness and increase in income disparity between producers. Examiners credited detail such as data, analysis and argument as well as the overall evaluation.

Question 2

(a)   All candidates had an appropriate industrial policy to use from the case study in the Syllabus (**1.4**). Some used content from more than one phase of that policy, which was valid but not necessary. It is possible that this approach made explaining 'changes' easier, as one could be compared and contrasted with the other. Most responses could have been improved in either or both of the following two ways; firstly, by ensuring that all three elements, 'character, location and organisation' were covered in the explanation. Examiners were looking for the presence of each of these elements rather than perfect balance in coverage between them. Of the three, location was often the strongest. The use of place names, SEZs, EPZs, etc. assisted this. The second way in which responses could have been improved, and time saved maybe, was in the structure of the responses. It was common to find a description of the country's industrial policy in general first, sometimes extending to more than one side of answer paper, followed by an explanation of similar length about changes. Higher-skilled responses integrated the two components after an initial introduction and before a brief summarising conclusion. This tended to produce more concise and more pertinent writing.

(b)   Many candidates produced a straightforward developed list of locational factors, 'One factor is raw materials … Another factor is markets … Another …' with limited reference to the necessary examples and little or no assessment. This approach demonstrated theoretical knowledge of the location of manufacturing and related service industries, without satisfying two key elements of the question. Better responses tended to be example-based rather than factor-based. Whilst many candidates used text book examples from other countries, such as Cambridge, UK, or Silicon Valley, USA, some good use was made of exemplar content from candidates' home countries such as Kenya and Zimbabwe. These tended to be more up-to-date and more accurately deployed, perhaps because of familiarity with location and context and understanding of culture. The word 'recent' was included in the question to avoid historical treatments and to encourage a contemporary approach, for example in which transport and government policy for example in attracting FDI could be significant. The syllabus dateline is 1970 for guidance. A much more up-to-date approach, for example over the last decade, or during the life of a country's particular 5-year plan, was fully acceptable and, where taken, performed well.

Environmental management

Question 3

(a)   Most candidates produced two fundamental explanatory factors affecting demand: level of development and population size, with appropriate examples of countries. Beyond this many only considered domestic demand for cooking, heating, lighting and appliances, contrasting poor households in a tropical country with the energy-hungry demands of the USA for example, requiring heating in winter, air conditioning in summer and running multiple appliances, computers and gadgets in home, home office and garden. Better responses considered total energy demand from all sectors, notably transport and manufacturing. Few included demands from services, such as schools, hospitals, shops and tourism. Valid links could be made to resource availability and resource exploitation however in so doing it was important to link this to demand for energy, rather than to write about energy supply. A significant proportion of responses addressed 'country to country' but omitted 'year to year' and were written in a static way. Others included time but on the wrong timescale, focussing on seasonal changes for example in the agricultural sector or for heating homes. The highest-scoring responses to this element were framed in a dynamic way and considered two or more elements of change, such as industrialisation in LEDCs and NICs and population growth increasing demand, and deindustrialisation in MEDCs and energy conservation initiatives working to reduce total energy demand however slightly. Catastrophic explanations based on conflict and hazardous events tended to perform less satisfactorily.

(b)   Deconstructing this part question identified three key elements: the environmental impact of energy production, changes in energy strategies and the need for evaluation of extent. Of the three, it was the environmental impact of energy production, especially in relation to the burning of fossil fuels, which was covered the best. At the top end, some excellent summaries of global warming and environmental degradation of terrestrial environments were seen.   Some included the environmental impact of the nuclear disaster at Fukushima in 2011. Lower down the spectrum of achievement there was satisfactory reference to atmospheric pollution and global warming, although at times this was confused with the hole in the ozone layer. One discriminator was the ability to link environmental impact to changes in energy strategies. Some made big claims about "all countries" or that "many strategies have changed" without supporting evidence. Others took a careful look at a changing strategy such as that of China, before making briefer comments on others, such as Germany or the UK, creditably. The highest-scoring responses addressed the element of extent directly by considering factors other than environmental impact and/or by considering energy strategies which remain unchanged despite their environmental impact. For both of these arguments, issues of energy security, cost and political decisions were pertinent. In providing evidence many responses operated at the level of country name only. The best provided detail such as dates, percentage data, named locations and initiatives, and costs. Providing detailed evidence of environmental impact was more difficult, although a few provided data of greenhouse gas emissions and specific information about targets of the Kyoto Protocol, for which see http://unfccc.int/kyoto_protocol/items/2830.php for reference.

Question 4

(a)   Many answered this satisfactorily, combining human factors and physical factors and interpreting the two photographs robustly and creatively. As knowledge of the two locations was not expected, sometimes called 'unfamiliar contexts', Examiners credited reasonable interpretations of the evidence and reasoning that was geographically robust. Overall, reasons related to Photograph A were more numerous and of higher quality. The best responses addressed the idea of vulnerability directly and consistently, building up a fabric of interactive reasons in a number of dimensions. For example, in Photograph A, the location on the edge of a town (human settlement) and by a road (passing traffic, dumping) made it vulnerable. So, too, did a combination of lack of provision of waste disposal by the authorities; ignorance of the implications of illegal dumping; and population pressure as the limited systems or means of disposal struggled to cope with an increase in waste. In Photograph B the strongest responses considered the consequences of deforestation and of profit motivation and market demand where valuable mineral resources are found. Credit was given to reasoning which extended beyond the photographs identifying to other environments at risk but this was not necessary for a full response. At the lower end, candidates tended to describe what could be seen in the photographs, rather than suggest reasons as asked.

(b)   Some excellent analysis and argument was seen which addressed the issue of extent directly and contrasted attempts at protection in two or more named locations in some detail. In so doing the role of factors facilitating or supporting environmental protection, such as secure funding and the co-operation of different groups of people were highlighted. So, more commonly, were constraints such as conflict, indebtedness, transborder issues, lack of education, spatial scale, corruption, vested interests, etc. assessed. Middle quality responses characteristically took a narrative approach, often spending too much time telling the story of a degraded environment and what caused it, instead of focussing on the key idea of protection of the environment. This was an example of not being able to use a case study in a manner other than that in which it had been learned or used previously. At the lower end, responses were often vague, for example about the Amazon or the Sahel in a broad manner, or, again, about environmental degradation rather than environmental protection, so obscuring the question. Some offered a simple view, such as 'to a certain extent' or 'it is possible but difficult', without giving the evidence or providing the argument to support this.

Global interdependence

Question 5

(a) (i)   A full response required a focus on changes in some (but not necessarily all) the components of government aid shown in Fig. 2, with some data support. Providing this data support effectively involved years read from the x axis and US$ billions read from the y axis or some manipulation of this data, such as 'humanitarian aid more than doubled between 2000 and 2009'. It was the y axis which many candidates did not understand. In this sort of graph, a compound graph, the components are stacked one on top of the other. So, for example, total government aid in 2000 was approx. US$79 billion, but debt relief in 2000 (in red) was only approx. US$2.5 billion. Many recognised the main changes occurred in debt relief, especially in the period 2004–07, and in bilateral aid (in the darker blue). Fewer could support these and other changes accurately.

(ii)   A full response consisted of two or more valid reasons for the changes in aid, such as international commitments to debt relief (G8, UN, HIPC), the incidence of disasters requiring humanitarian aid or the impact of the global recession on aid budgets in MEDCs. Some perceptive reasons were offered with evidence. At the lower end responses were vague and had little explanatory vigour, such as 'they needed less help' and 'because more aid was needed'.

(b)   Most candidates outlined the role of the World Trade Organization (WTO) in promoting fair trade and resolving trade disputes satisfactorily. Some provided sharp accounts of its role, supported with detailed evidence such as dates, activities, countries and a few candidates integrated quotations from politicians, leaders or economists to enhance the quality still further. In almost all responses the element of trade agreements was briefer and formed a subsidiary part of the writing. Most used a trade bloc, such as the EU, NAFTA or ASEAN. Some used material about a particular product such as cocoa, cotton or bananas. Most candidates pursued the WTO's role in promoting fair trade between countries. Some candidates also considered Fair Trade as another type of trade agreement.   For an introduction to Fair Trade see, for example, http://www.fairtrade.org.uk. Higher-scoring responses maintained a focus on the key idea in the question of 'in promoting economic development through trade', making links between trade and economic development. These links included export earnings as finance and who is advantaged and disadvantaged by trade. Many offered the view that MEDCs dominate the WTO and that LEDCs still lose out despite activity in changing terms of trade in their favour. Others considered the dumping of goods in LEDCs by producers in MEDCs and its negative impacts on the national economy and local producers. A few mentioned the failure of the Doha Round of talks creditably as part of the evaluation offered. Middle quality responses could in general have been improved in two ways; firstly, by incorporating some illustrative detail, although a broad approach was legitimate, and, secondly, with more evaluation. Many wrote what they could recall about the WTO and trade agreements first, on one or two sides of paper, and only offered a brief evaluation in a final concluding paragraph, which limited the overall outcome within Level 2 (7–11/15 marks).

Question 6

(a)   The tightest responses were carefully worked to feature a combination of factors influencing growth and development. Some concentrated on attractions and supply factors too much. The most effective explanations combined supply factors, e.g. the environment, hotel provision; demand factors, e.g. fashion, longer paid holidays, the emerging middle class in China and India; and facilitating factors, e.g. media, advertising, budget airlines and the powerful role of the Internet in different ways from research to flight and accommodation booking. Comprehensive responses were not required. Any tourist area or resort could be taken. Locational detail could be named features such as beaches, coral reefs or national parks; names and dates of events and advertising campaigns; specific developments in infrastructure (such as the name of an airport or the number of a road) or names of hotels or companies. Many responses operated at the level of a named country, such as Kenya, a named resort, such as Victoria Falls, or a named area, such as the Costa del Sol, without offering this kind of detail. Some candidates tried to take the life cycle model of tourism as the vehicle for answering **(a)**. This was difficult to handle for two reasons. The first is that as with all models it is descriptive rather than explanatory, so was blunt and yielded few factors without careful treatment. The second is that its many stages made it cumbersome and time-consuming to use. That said, it did stimulate some coverage of factors causing decline in the chosen tourist area or resort which within the context of 'growth and development', was creditable.

(b)   The majority of responses took the simple definition of carrying capacity as the maximum number of tourists that a location can support without deterioration in environmental quality and social wellbeing (the definition that includes the deterioration of the tourism experience for visitors was not relevant given the wording of this part-question). Some candidates deployed effectively a more developed definition of carrying capacity as physical, psychological, etc. Attempting to use the demographic definition of carrying capacity from the Human Core in Paper 1 was inappropriate for a question on tourism. Overall responses were strongest in elaborating different problems that tourist destinations face; environmental, social, economic and, maybe, political. Amongst these the best were based on or supported by specific evidence and locational detail. Many of these responses used an analytical framework which divided the chosen problems into those that could be linked to carrying capacity, such as congestion or lack of water supply, and those that could not, such as terrorism, health scares or a change in fashion. Some used an example of ecotourism carefully to demonstrate the usefulness of carrying capacity in the careful restriction and monitoring of numbers to preserve the environment and traditional society. Although not necessary, many high-scoring responses integrated content from Doxey's Irridex in assessing social wellbeing of the local host population.

Economic transition

Question 7

(a) (i)   Responses tended to be more successful than to **(ii)**. A number of ways were identified, such as providing food for survival, a raw materials base for an emerging secondary sector and for power, export earnings and employment for many/most people in an LEDC or at an early stage of the path to development. Two or more of these points could be described, developed and/or exemplified for full marks.

(ii)   This sub-part was higher order, requiring explanation, and more demanding conceptually, being about the primary sector as a constraint. It functioned as a discriminator within **(a)**, with most candidates achieved some marks and few gaining 4 or 5/5. A number of explanatory points could be offered of which low added value/low profit was one; its' being an unreliable and unstable foundation for economic development being a second; and its' restricting skills development and entrepreneurship being a third. Some candidates seemed unaware of any limitations or wrote vaguely about 'problems', scoring few marks, if any.

(b) Some truly impressive work was seen based in and developing from one or more case studies. Whilst one example was fully sufficient, some candidates compared an example of relative success with one of relative failure, highly effectively. Any case studies were valid (MEDC, NIC, LEDC). Examiners commented on some impressive use of examples of NICs in terms of depth, detail and comment. The best unpacked the concept of development, rather than taking it at 'face value' or leaving it 'to speak for itself'. For example, in some responses, 'success' was evaluated in terms of changes in measures or indices of development such as infant mortality rate, life expectancy, literacy, GDP per person, poverty (e.g. earning less than US$1.5 per day), the GINI coefficient, human development index (HDI) or physical quality of life index (PQLI). Others referred to negative impacts qualitatively such as increased regional disparities, the advantaging further of those already advantaged socially and economically and negative environmental impact with its consequences for local residents and ecosystems. Most candidates took 'industrial growth' in the question as meaning manufacturing, although any industrial sectors could be used legitimately. Strong responses outlined the chosen 'attempts' in terms of policy and provided detail such as who, what, where, when, why, how it was financed, aims, etc. At the lower end some responses operated at the level of country name only, such as 'India', and comprised writing about manufacture that was so broad that it was indistinct and could have applied to a number of countries. One further discriminator, in common with part **(b)** of all questions, was the approach taken to the evaluative demand and the relative strength of skills in, and the language to express, the assessment required.

Question 8

(a) (i) The demand to compare the patterns was relatively demanding as the links between Figs 3A and 3B were unclear. Some candidates claimed correspondence that the evidence did not support, such as 'a North/South divide'. Most gained some marks from looking at Santa Cruz, Neuquén and Buenos Aires on Fig 3A, all very high/high HDI in the light of differing population density. Few summarised the range of population densities for states with high HDI (mid-blue). Some picked out and named the states with medium HDI (pale blue) perhaps listing the different population densities there without clear links. Stating that the evidence was varied and complex and the links unclear was itself creditable within the six marks available.

(ii) This did not need to be linked to Argentina, but could be if candidates chose to treat the demand this way. Few candidates grasped the key idea of 'very high levels'. Most wrote about how social and economic wellbeing in peripheral areas might improve. The best-directed responses could achieve full marks readily for two developed 'ways'. One example would be through the development of the periphery as a resource-frontier region (Friedmann) in terms of mineral extraction or the development of tourism, especially if this was well-managed to avoid leakage and benefit the locality rather than a foreign TNC. Some wrote convincingly about regional policy and investment in sectors such as education, healthcare and transport in the periphery. Another fruitful theme to explore was spread effects from the core, for example involving the location or relocation of businesses to gain some of the positives of the periphery such as higher quality environment, higher quality of life, room to expand, market penetration, etc. with the associated local multiplier effect into wellbeing. Some suggested 'trickle down' from the core without recognising that this process would be relatively weak and unlikely to achieve the very high level of wellbeing in the question.

(b) Most responses would have gained from an enhanced understanding, and/or handling, of the concept of the globalisation of the world economy in terms of the interconnectedness of the world's economic functions. One thing to explore was how truly global, i.e. involving the whole world, the world economy is from TNC activity. Another approach was to consider other factors, those which were significant other than TNCs, such as changes in transport and communications technologies, the world opening up politically or the action of trade blocs or supranational bodies such as the WTO, IMF and World Bank. Many candidates wrote appropriately about access to resources and markets and TNCs' cost minimising and profit maximising behaviours. Weaker responses tended to comprise unsorted recall knowledge of one TNC, providing a profile which was not directed to the question set, and a simple opinion such as 'I agree' or 'I agree to a certain extent' with little or no related support to substantiate it. A few highly articulate and individual approaches to the question were seen which 'questioned the question' in an impressive manner, for example arguing for the growth of TNCs' being as much the consequence of globalisation as the cause of it, or being relatively dismissive of TNCs in favour of a detailed assessment of the key role of technological innovation in transport, communications and production.