GEOGRAPHY

Paper 0460/11

Paper 11

Key Messages:

In order for candidates to perform well on this paper they need to be able to:

- Interpret a range of sources such as maps, graphs or diagrams in order to extract information and sometimes analyse the data to show patterns or trends.
- Add data to a map, graph or diagram or complete a diagram by adding labels therefore in order for candidates to do this they must understand how pie charts, bar graphs, maps etc. are constructed.
- Use photographs or pictures to generate ideas, issues or to describe features such as a meander.
- Provide full and accurate definitions of key geographical terminology e.g. what is meant by a river's velocity?
- Show understanding of key geographical terminology, processes and features by providing full descriptions and/or explanations of geographical themes, events or features e.g. how coral reefs are formed or how infrastructure can be improved.
- Describe and explain, in detail, a range of case studies with place specific detail and apply this understanding to the question being asked. e.g. explain the impacts of a volcanic eruption on people and the environment. This requires information relating to impacts only on people and the environment. Any detail on the causes of the eruption are not required for this question despite the fact that the candidate would know this information.
- Write in depth and detail in a succinct manner and avoid repetition.

General Comments:

This was the second November examination in which candidates used a combined question and answer booklet to write their answers. This format is now familiar to centres, therefore in the vast majority of cases candidates made effective use of the space provided. It seems that this session the candidates managed the space more effectively. It was unu sual to see many pages of extra writing as most seemed to use the additional page well. As question and answer booklets will continue to be the format used it is important that candidates are made aware that they should:

- write only on the lines provided, not underneath the final line or elsewhere on the page (e.g. in any area of unused space at the bottom of a page).
- continue any answers which they do not have space for on the lined page(s) at the back of the booklet. If they do this they must indicate that they have done so (e.g. by writing 'continued on Page XX') and carefully write the number of the question at the beginning of the extra part of their answer. They should only use extra loose sheets of paper if this extra space has been used up.

The examination was considered appropriate for the ability and age range of candidates as there was a good response to the November 2012 examination paper. The majority of candidates were able to answer in full and even weaker candidates attempted most sections of their chosen questions.

A high number of candidates presented work of a very high standard which was pleasing to see. There were only a few candidates who did not fully comprehend what was required in the question. Candidates also generally made good use of the resources provided.

Many candidates made use of the additional pages at the end and all candidates should be encouraged to do this if they need extra space to write their answer rather than trying to squeeze it onto the same page when the lines have run out or at the sides of the page, as it becomes difficult to read (see above).

The examination paper gave a wide spread of marks allowing for positive achievement for all but also allowed for sufficient challenge for the most able.

There are still a few candidates who attempt all questions instead of following the rubric.

There are still a few candidates/Centre's who are learning case studies from previous mark schemes which is not really conducive to candidates' understanding of the geography involved. This stands out especially when an answer simply does not 'fit' with the question being asked. Candidates who tend to do well on case study questions are the ones that use local case studies because their knowledge and understanding really shines through and they score good Level 2 or high Level 3 marks. The use of local case studies that candidates can write about in detail with place specific information or even visit them should be encouraged as opposed to learning about distant case studies that have no/or very little relevance to candidate's everyday lives. It is recognised that this is not always possible for example when teaching about the impacts of a volcanic eruption a distant case study will probably have to be used – so teacher judgment is the key here to determining which case studies are most suited to their candidates and Centre. Also to select up to date examples that may have been in the news recently tend to offer a wealth of information and resources that can be used in the classroom when teaching about these examples/places which candidates will find more interesting and relevant and most importantly they will be able to write about them in detail in the examination.

The following items of general advice, which have been provided previously in this report, need to be given to future candidates who should:

1. make the choice of questions with care, ensuring that for each question they choose they have a named case study about which they can write in detail and with confidence.

2. answer the three chosen questions in order, starting with the one with which they are the most confident, and finishing with the one with which they are least confident (in case they run out of time).

3. read the entire question first before answering any part, in order to decide which section requires which information to avoid repetition of answers.

4. highlight the command words and possibly other key words so that answers are always relevant to the question.

5. use the mark allocations in brackets as a guide to the amount of detail or number of responses required, not devoting too much time to those questions worth few marks, but ensuring that those worth more marks are answered in sufficient detail.

6. consider carefully their answers to the case studies and ensure that the focus of each response is correct, rather than including all facts about the chosen topic or area, developing each point fully rather than writing extensive lists of simple, basic points. It is better to fully develop three ideas rather than write extensive lists consisting of numerous simple points.

7. study the resources such as maps, photographs, graphs, diagrams and extracts carefully, using appropriate facts and statistics derived from resources to back up an answer and interpreting them by making appropriate comments, rather than just copying parts of them.

The following detailed comments for individual questions will focus upon candidates' strengths and weaknesses and are intended to help centres better prepare their candidates for future examinations.

Comments on specific questions:

Question 1

Was a popular choice made by candidates with the vast majority opting to answer this question.

(a) (i) Responses to this question were mixed with approximately 50% of candidates gaining the mark and 50% not gaining the mark. Candidates were required to provide a definition for the term 'net migration'. Roughly half of all candidates correctly referred to the balance between immigrants and emigrants or gave the formula for working it out. The remaining half of candidates tended to define 'migration' or 'rural to urban migration'.

(ii) Candidates were required to extract information from Fig. 1 to answer this question and it was generally well answered by most with very few stating the incorrect year for there being 'more immigrants than emigrants'. There was only 1 correct year for 'net migration being -86000' which was 2002. For the second part of the question candidates could select from 1999/2004/2005 and 2006.

(iii) This question asked candidates to suggest 3 different reasons why people migrate from an LEDC to an MEDC. This was well answered as most candidates could identify three correct ideas with the most popular suggestions being: 'to find a job; for better medical care; to be able to send their children to School/education; to escape war'. All of the mark scheme ideas were seen although some candidates lost marks by being too vague e.g. by stating 'standard of living; better services; better quality of life' etc. Candidates should try to avoid these terms and quantify what they mean by them i.e. how is the person's life going to be improved? It is because the housing will have clean running water for example

(iv) The majority of candidates provided some well thought out answers as to the difficulties that may prevent people moving to another country. The question provided effective differentiation, many candidates scored highly gaining good marks. Very few candidates gained no credit on this question. Most common ideas were: 'high cost of migration/can not afford to move; difficulties in obtaining visa's/legal documentation; worries about being separated from their families; worries about discrimination/language barriers'.

(b) (i) Candidates were required to identify 3 disadvantages for Syria of large numbers of people migrating into the country by reading Fig. 2. Most candidates were able to copy out or re-word the relevant pieces of information from the extract. A few candidates totally ignored Fig. 2 and wrote about other disadvantages to Syria such as increasing unemployment which was irrelevant for the requirements of this question.

(ii) Many good answers for this question were seen from candidates in order to explain how a country might benefit from people migrating into it. Many candidates recognised and explained the ideas of a country having 'more workers which generates more spending thereby improving the economy and more taxes gained which can be spent on improving services such as education or healthcare'. Enhancing cultural understanding was another popular response. Some candidates did not get full marks as they repeated an issue in a different way or did not expand on an idea e.g. how more money for a country could improve services. The question differentiated well as most candidates scored at least 1 or 2 marks for simple ideas such as 'increase in workforce and/or references to cheap labour/jobs the locals do not want to do' with many candidates scoring higher marks for developing their ideas fully as previously shown.

(c) Candidates were required to name a country they had studied and describe the problems caused by underpopulation. A wide variety of responses were seen. Some candidates outlined what underpopulation meant instead of showing the problems it caused. Whilst some candidates briefly outlined the problems but then went on to illustrate the solutions which was not required and therefore only gained simple Level 1 marks up to a maximum of 3. Many candidates wrote about countries with ageing populations rather than countries which are under-populated. Some of the problems may be common to both but candidates need to distinguish between the two ideas. In this case candidates who were able to develop their ideas clearly especially about how there is an increase in elderly people who require pensions and this is where a lot of money is needed so other services suffer tended to gain Level 2 marks. Many different examples were seen with the better case studies referring to Canada. A few candidates wrote about overpopulation and did not score any marks.

Question 2

This question was another popular choice made by candidates and was often selected alongside **Question 1** or instead of **Question 1**.

(a) (i) Candidates were required to study Photographs A, B and C in the resource booklet. They then had to define the term 'urban area'. Responses were mostly correct although some candidates clearly found it difficult to put their ideas into words thereby providing very long-winded descriptions. Candidates who referred to houses and services alone did not gain a mark as this was insufficient information to distinguish an urban area from a rural area. This highlights the importance of learning key terms and definitions.

(ii) Candidates were asked to identify the photographs which show mainly shops and services and a high density residential area. The vast majority of candidates identified the correct photos being A and C respectively.

(iii) This question asked for 3 different examples of open space which are likely to be found in urban areas. Responses were varied with some full mark responses seen but many candidates just scored 1 or 2 marks. Most popular correct choices were 'parks/gardens; sports pitches; public squares'. Many candidates stated that roads and shopping malls are areas of open space.

(b) (i) Fig. 3 shows the built up area of Paris and using this candidates were required to describe the location of Cergy-Pontoise. Some full mark responses were seen but generally responses to this question were disappointing with many candidates not using map evidence well to respond to the command words 'describe the location'. In order to answer this question well candidates need to refer to other named features and use distance and/or direction rather than making vague statements referring to places which could be anywhere on the map e.g. near a rapid transit line. Many candidates attempted to explain why they were there and wrote an answer which they repeated in **(b)(ii).** This highlights the importance and necessity of candidates reading the whole sequence of questions in a sub-section before beginning their answer. Many candidates attempted to use scale but used it incorrectly.

(ii) The question asked for reasons why new housing and industry have grown up at Cergy-Pontoise and varied responses were seen. Some good responses referring to 'access, space, cost of land, environmental factors' were seen. Many candidates tended to focus on one issue rather than giving a number of reasons which limited the number of marks gained.

(iii) This question differentiated well as candidates were asked to explain the impacts of urban sprawl around large urban areas in MEDC's. Some excellent developed ideas were seen particularly in relation to the environmental impacts e.g. 'loss of farmland; atmospheric pollution, from increased traffic; deforestation, resulting in loss of habitat' etc. However, some candidates either wrote vague answers or showed a misunderstanding of urban sprawl by referring to the growth of squatter settlements which is irrelevant to MEDC cities.

(c) Here candidates had to name an urban area that they had studied where there is traffic congestion in and around the CBD and describe the attempts which have been made to solve the problem. Lots of references to restricting access within South American cities were seen. Also good references to specific improvements in public transport were seen, providing candidates were able to develop their points high marks were scored, including Level 3. Some candidates did not develop their ideas to gain Level 2 but most were capable of making some valid points to at least achieve Level 1. Some merely listed what had been done without showing knowledge of what the point of them were.

Question 3

This question was probably the 4th most popular choice made by candidates.

(a) (i) Candidates had to study Photograph D showing an area of coastline. They then had to say what is meant by the term 'constructive waves'. The majority of candidates answered correctly and gained the mark by stating 'waves that deposit material or stronger swash than backwash'.

(ii) Also referring to Photograph D candidates were required to describe 2 features of the cliffs shown. This was generally poorly answered as evidence in the photograph was not well used. Many candidates did not describe the features but instead wrote about erosion taking place. As such very few candidates scored the full 2 marks available.

(iii) Most candidates demonstrated good knowledge of how hydraulic action, corrasion and corrosion have eroded the cliffs and were able to explain the processes. Some candidates found it difficult to express their ideas, especially for hydraulic action, again the value of understanding key terminology and processes is highlighted here.

(iv) This question asked candidates to explain why coastal erosion forms bays along some stretches of coast and some responses showed very good understanding. Providing candidates knew about hard and soft rocks they scored high marks, many with the full 4 marks available. Some candidates scored 0 if they tried to give any other form of explanation i.e. sand is deposited forming bays showing that they had a limited idea of how they are formed. Hence, this question provided a good range of differentiation.

(b) (i) The sketch provided in Fig. 4 shows an area of coastline in Vanuatu. After studying the sketch candidates were required to describe 3 conditions which are required for the growth of coral. Most candidates scored marks here, usually for reference to any combination of 'shallow/clear/warm water'. Generally these conditions are well known though those who try to use statistics are sometimes not accurate.

(ii) Again referring to the sketch showing landform A - a sand spit, in fig. 4, candidates were required to explain how the landform had been formed and could include a labelled diagram. Whilst a few candidates had no idea of how the landform was formed many candidates scored some marks i.e. at least 2 or 3 by referring to some aspects of prevailing wind, sediment movement and longshore drift. Diagrams frequently did not enhance the written text, apart from perhaps the zigzag idea. Relatively few candidates scored full marks.

(c) This question asked candidates to name an area which they had studied in order to explain how the natural environment provides opportunities and causes problems for people. It was interesting to see the range of examples used here - volcanoes, rivers and coasts being common. Most candidates scored some marks and could usually identify both opportunities and problems, the level of success depended upon whether they were able to develop their ideas fully and include place specific detail. The best responses tended to be those that used areas with volcanoes as they had very good knowledge that showed both the opportunities and problems caused by living there and were able to include some place specific detail.

Question 4

This was approximately the 5th most popular choice made by candidates.

(a) (i) Candidates were required to study Fig. 5 showing information about the climate of Cairo and Mbandanka. From this information they had to identify 2 months in which there is no rainfall in Cairo. Candidates answered mostly correctly identifying July and August to gain the mark.

(ii) Candidates were required to calculate the total annual rainfall in Mbandanka to gain 2 marks. Many gained the full 2 marks for correctly calculating 1700 mm. A few candidates wrongly calculated the monthly mean.

(iii) This question asked 'why do desert areas have low rainfall?' Many candidates did not score well on this question, in most instance scoring just 1 mark for either 'high pressure', 'rain shadow' or 'low evaporation'. Very few scored full marks and were able to only provide 1 idea which tended to be

repeated. However, some well thought out answers were seen with good references to high pressure, distance from sea, lack of evaporation and/or descending air gaining full marks.

(iv) In contrast to the previous question candidates were better able to explain why areas of tropical rainforest have high rainfall. Most candidates could refer to large amounts of evaporation and/or some aspects of the process of convection rainfall thereby gaining at least 1 or 2 marks. Few candidates gaining the full 4 marks were seen. Some candidates gained 1 mark for stating 'high evaporation' having stated 'low evaporation' in the previous question but had no understanding beyond this.

(b) (i) Using Fig. 6 showing 2 types of plant that grow in the desert candidates had to describe 3 differences between plants A and B. The resource was generally well used, with many candidates achieving full marks. Some however did not write about differences, just focusing on either A or B without using comparative words which lost them marks i.e. 'plant A has thorns' but there was no comparison to plant B. The best comparisons tended to be in reference to the roots; i.e. plant B's roots reach the water table whereas plant A's do not.

(ii) This question asked candidates to explain how plants survive in the hot, dry climate. This was well answered by a significant number of candidates with many ideas being developed and a few using technical terms. Other candidates just tended to describe features e.g. 'long roots' rather than fully explaining how that helps them to survive i.e. 'plants have long roots so that they can search for water deep underground' or 'plants have thorns so that it reduces the rate of evapotranspiration thereby conserving water'. Candidates would only score 2 marks for the roots and thorns idea alone but by explaining how that helps them survive doubles the amount of marks scored.

(c) Here, candidates were required to describe and explain the main characteristics of the natural vegetation of a tropical rainforest and they must include a labelled diagram in order to achieve full marks. Providing candidates focused on vegetation rather than climate they at least tended to get into Level 1 for simple descriptive points such as 'tall trees, dense vegetation, wide leaves'. Other candidates linked their descriptions with correct explanations, thereby taking their answers to Level 2 e.g. there are tall trees called emergents as they grow so tall to reach the sunlight through the canopy'. Poor use was made of the opportunity to add a labelled diagram and many were very weak or at best simply repeated what was in the text rather than enhancing the response and some candidates did not attempt a diagram at all. Diagrams were seen with just one tree which is not really indicative of a typical tropical rainforest diagram.

Question 5

This was probably the third most popular choice of question made by candidates.

(a) (i) Candidates were required to study Fig. 7 which shows information about international tourism. They then had to identify the total number of international tourist arrivals in 2010. Most candidates answered correctly (1000) but some errors were seen.

(ii) Candidates were then required to compare the number of international tourist arrivals in Europe and the Americas in 2010 and were told to use figures in their answer. Provided that candidates were familiar with how the compound graph worked they scored 2 marks however, many candidates were not familiar with such a graph and read the Americas value as 700m, wrongly concluding that this was more than Europe's 500m and therefore gained no marks. Virtually all candidates followed the instructions and made a comparison and did include figures in their answer albeit some were incorrect.

(iii) This question was generally well answered with many candidates scoring 2 or 3 marks for reasons why there has been an increase in international tourism over the period shown in Fig. 7. The most common responses referred to ideas such as: 'increasing affluence; low cost airlines; improvements in transport; greater advertising of destinations'.

(b) (i) Candidates had to study photograph E showing Tenerife a Spanish island, important for tourism. Using evidence from the photograph only, candidates had to suggest 3 reasons why the area shown attracts tourists. The photograph was quite well used by most candidates although some ideas were vaguely expressed e.g. beach/sea needed to go a little further to gain the mark i.e. 'sandy beach' or 'clear/blue sea'. Also some candidates speculated what was in the small settlement e.g. hotels, restaurants rather than focusing on evidence from the photograph as

required. Many candidates described good access and the road as being an attraction which did not gain any credit.

(ii) Most candidates scored at least 1 or 2 marks for explaining why the tourist industry creates employment in areas such as Tenerife. Many candidates scored high marks for explaining the different ways in which tourism creates employment e.g. 'work in hotels; as tour guides; selling souvenirs; working in restaurants'. Some lost out with a narrow focus e.g. on jobs in hotels, without looking more widely at how tourism creates work e.g. in transport or commerce etc.

(iii) To answer this question well candidates needed to understand the term 'infrastructure' which evidently is not well understand by most candidates. The question asked candidates to explain how the development of the tourist industry in a country may result in the improvement of the infrastructure for local people. It was rare to see high marks here with many candidates simply repeating the term 'infrastructure' throughout their response rather than giving examples of what or how it may be improved. Some candidates showed limited understanding of the topics by writing about jobs, hotels etc. The most common correct references were to aspects of the transport infrastructure, such as roads, public transport and airports. Very few wrote about health and educational facilities; however the improvement of such facilities is inevitable with the development of any major economic activity, particularly tourism.

(c) For a named area that candidates have studied they had to describe the impacts of the tourist industry on the natural environment. A good range of responses were seen with many different examples used, with several unusual South American examples chosen. Many candidates gained Level 1 marks for simple references to 'litter, air pollution, water pollution' without developing ideas fully to gain Level 2. Some candidates missed the idea of 'natural' environment which was a requirement of the question and wrote about problems for people which is irrelevant. Some detailed responses which included place specific detail to gain full marks were seen.

Question 6

This question was probably the least popular selection made by candidates.

(a) (i) Candidates were required to study Fig. 8 which shows information about an organization which encourages nature conservation. They then had to define the term 'conservation'. Most candidates were able to do this and gain a mark for ideas such as: 'preserving/protecting things for the future'. Ideas were expressed in many different ways but nevertheless it usually conveyed the idea. Many candidates did not gain the mark as they simply stated 'to look after things' which did not quite go far enough to adequately define conservation.

(ii) Candidates then had to explain why it is important to encourage sustainable development. Some candidates did not gain the full 2 marks although most gained 1 mark and were able to express some idea of the sustainability concept i.e. 'to protect resources for future generations by using them sensibly now'. Some candidates gave examples such as 'to slow down global warming or to avoid extinction of species', which was equally valid.

(iii) Still using Fig. 8 candidates had to identify 3 environmental issues about which the organisation is concerned. Too many candidates just copied from the resource and therefore wrongly wrote about what needed to be done rather than the issues themselves e.g. 'stop overfishing' as opposed to the issue which is 'over fishing'. Candidates should be encouraged to think about the content of written extracts like this rather than just copying out what they think are key phrases. This would help reduce or avoid unnecessary loss of marks such as this.

(iv) This question asked candidates to explain why it is difficult to conserve the natural environment. Many good responses scoring high 3 or 4 marks were provided. Many references were made to the idea that economic growth is taking priority with the negative impacts of this on conservation. Some candidates gave more simplistic responses such as 'the natural environment is being destroyed due to lack of knowledge of/care about the damage which is being done' and only scored 1 or 2 marks. Whilst the latter is a valid idea, an entire focus of the answer on it would not score many marks and candidates need to consider including other ideas to be more successful on these higher mark questions.

(b) (i) Candidates were required to study Fig. 9A and B showing the location of Bukit Timah Nature Reserve in Singapore and information about Singapore and the nature reserve. They then had to

describe the location of Bukit Timah Nature Reserve. Some full mark responses were provided but generally many candidates did not use map evidence well to respond to command words 'describe the location'. Candidates need to refer to other named features and use distance and/or direction rather than making vague statements referring to places which could be anywhere on the map e.g. near/far away from an airport. Marks were mostly awarded for 'in the Centre of Singapore; SW of Seletar airport; 20 kms from Changi airport. Many references were made to the South China Sea which did not gain any credit.

(ii) Still referring to Figs 9A and B candidates were required to explain why it was important to create nature reserves in Singapore. Many good responses were provided here, some of which used the ideas in the resource but many of which developed beyond it. Ideas typically included: 'Singapore is densely populated so there are limited areas which are not built on; it is an area of primary rainforest, so there is a need to protect large numbers of plants and animals in order to maintain biodiversity'.

(c) Candidates had to provide a named example that they have studied and describe how renewable energy is being developed. A wide range of responses were provided with some local case studies selected in named South American countries. Whatever the example chosen, the main problem faced by many candidates was to be able to develop their descriptions fully. Many candidates explained and even wrote about advantages and disadvantages of renewable energy for no credit. The best answers focused on an actual scheme e.g. a named HEP development or wind farm e.g. 'the Itaipu dam located on the Parana river on the border of Brazil and Paraguay which is a bi-national development and is used to generate Hydro Electric Power for both countries. In 2008 the dam generated 80% of Paraguay's power and 19% of Brazil's. There are 20 generating units installed 10 each for Paraguay and Brazil' etc. This response is purely descriptive and includes place specific information to gain Level 3 marks. Lower Level 1 scoring responses tended to name a country and did little more than list renewable energy types being developed there i.e. wind farms, HEP, solar power. On the whole of those that selected this question this last section was generally well answered with many candidates gaining Level 2 marks.

GEOGRAPHY

Paper 0460/12

Paper 12

Key Messages:

In order for Candidates to perform well on this paper they need to be able to:

- Interpret a range of sources such as maps, graphs or diagrams in order to extract information, and sometimes analyse the data to show patterns or trends.
- Add data to a map, graph or diagram or complete a diagram by adding labels. Therefore in order for candidates to do this they must understand how pie charts, bar graphs, maps etc. are constructed.
- Use photographs or pictures to generate ideas, issues or to describe features such as a volcano.
- Provide full and accurate definitions of key geographical terminology e.g. what is meant by the structure of a population?
- Show understanding of key geographical terminology, processes and features by providing full descriptions and/or explanations of geographical themes, events or features.
- Refer to a range of case studies with place specific detail, statistics or other data, and apply this information to the question being asked. e.g. Explain the causes of a volcanic eruption. This requires information relating to causes only. Any detail on the impacts of the eruption are not required for this question despite the fact that the candidate would know this information.
- Write in depth and detail in a succinct manner and avoid repetition.

General Comments:

This was the second November examination in which candidates used a combined question and answer booklet to write their answers. This format is now familiar to Centres, therefore in the vast majority of cases candidates made effective use of the space provided. It was unusual to see many pages of extra writing as most seemed to use the additional page well. As question and answer booklets will continue to be the format used it is important that candidates are made aware that they should:

- write only on the lines provided, not underneath the final line or elsewhere on the page (e.g. in any area of unused space at the bottom of a page).
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The examination was considered appropriate for the ability and age range of candidates as there was a good response to the November 2012 examination paper. The majority of candidates were able to answer in full and even weaker candidates attempted most sections of their chosen questions.

A considerable number of candidates presented work of a very high standard which was pleasing to see. There were only a few candidates who did not fully comprehend what was required in the questions. Candidates also generally made good use of the resources provided.

Some candidates made use of the additional page at the end and all candidates should be encouraged to do this if they need extra space to write their answer rather than trying to squeeze it onto the same page when the lines have run out, or at the sides of the page, as it becomes difficult to read (see above).

The examination paper gave a wide spread of marks allowing for positive achievement for all but also allowed for sufficient challenge for the most able.

Those candidates who attempt all questions instead of following the rubric do not advantage themselves as this does not give them the opportunity to answer in the required detail. Fortunately this number is small.

There are still too many candidates who are learning case studies from previous mark schemes which is not really conducive to candidates' understanding of the geography involved. This stands out especially when an answer does not 'fit' with the question being asked. Candidates who tend to achieve well on case study questions are the ones who use local case studies because their knowledge and understanding really shines through and they score good Level 2 or high Level 3 marks. The use of local case studies that candidates can write about in detail with place specific information should be encouraged, as opposed to learning about distant case studies that have very little relevance to candidate's everyday lives. It is recognised that this is not always possible, for example when teaching about the impacts of a volcanic eruption a distant case study may have to be used – so teacher judgment is the key here to determining which case studies are most suited to their candidates and Centre. Also it is worth selecting, wherever possible up to date examples that may have been in the news recently. These tend to offer a wealth of information and resources that can be used in the classroom, and candidates tend to find then more interesting and relevant than many textbook examples, which inevitably are becoming somewhat dated.

The following items of general advice, which have been provided previously in this report, need to be given to future candidates who should:

1. make the choice of questions with care, ensuring that for each question they choose they have a named case study about which they can write in detail and with confidence.

2. answer the three chosen questions in order, starting with the one with which they are the most confident, and finishing with the one with which they are least confident (in case they run out of time).

3. read the entire question first before answering any part, in order to decide which section requires which information to avoid repetition of answers.

4. highlight the command words and possibly other key words so that answers are always relevant to the question.

5. use the mark allocations in brackets as a guide to the amount of detail or number of responses required, not devoting too much time to those questions worth few marks, but ensuring that those worth more marks are answered in sufficient detail.

6. consider carefully their answers to the case studies and ensure that the focus of each response is correct, rather than including all facts about the chosen topic or area, developing each point fully rather than writing extensive lists of simple, basic points. It is better to fully develop three ideas rather than write extensive lists consisting of numerous simple points. Candidates need to try to consider several issues and develop each one, rather than just focusing on one issue (e.g. drought in 6c).

7. study the resources such as maps, photographs, graphs, diagrams and extracts carefully, using appropriate facts and statistics derived from resources to back up an answer and interpreting them by making appropriate comments, rather than just copying parts of them.

The following detailed comments for individual questions will focus upon candidates' strengths and weaknesses and are intended to help Centres better prepare their candidates for future examinations.

Comments on specific questions:

Question 1

(a) (i) Whilst many acceptable definitions were seen there were also many vague or inaccurate responses which made reference to age and/or gender but missed out the key reference to proportions of the population. In addition many candidates were preoccupied with referring to how the data was displayed (i.e. a population pyramid) rather than defining the term 'population structure'.

(ii) Many candidates scored both marks, generally by referring to working and non-working populations.

(iii) Many candidates identified all three pyramids correctly, or at least one, usually Pyramid C.

(iv) Most candidates scored at least half marks by correctly describing the differences between the dependent population of the appropriate two pyramids. Common errors were to compare the shape of the pyramids and to focus on birth and death rates, and individual age bands. In a numbers of candidates' answers it was unclear whether differences within pyramids or between pyramids were being described. Marks were available for accompanying data but few candidates gave supporting data. Most of those who did so used figures for just one narrow age band (i.e. the length of a bar) rather than data about an entire cohort of dependent population (i.e. old dependent). Those few who attempted to total values of bars nearly always produced figures that were outside the acceptable tolerance.

(b) (i) Many candidates scored two or three marks, either by giving correct data or making a comparison between the two countries in one or both years. Whilst some wrongly focused on the rate of increase between the two dates they still gained credit if the statistics for each year were correct.

(ii) Many candidates scored well and seemed familiar with the reasons for an increase in the population of elderly people. Most answers focused on improvement in life expectancy, medical care, water supply, sanitation food supply and treatment of diseases. Some candidates incorrectly referred to inward migration of older people and there was sometimes confusion with an increasing birth rate and therefore overpopulation issues. A few candidates tried to compare Indonesia with Malaysia but still gained credit for relevant explanation.

(c) Most case studies were taken from Western European countries, Japan and China. Others chose LEDC countries, generally India or examples in Africa, which were accepted, though many candidates who made such choices tended to give general, simplistic answers, and there was some confusion with overpopulation. The better quality answers focused on the cost implications of an ageing population, especially for the government, with increasing care costs and the need to raise taxes, some candidates using accurate statistics to exemplify. From some weaker candidates there was a tendency to exaggerate ideas, for example the suggestion of economic collapse brought about by there being 'no workers' as a result of an increase of older people.

Question 2

(a) (i) Whilst many gave a correct percentage many other answers were inaccurate, presumably where candidates had looked at the wrong segment.

(ii) Most answers did not score here because candidates did not indicate a comprehension of what the information in Fig. 3 was showing. Candidates must examine resources closely to see what information is being presented, in this instance the change in the proportion of the world's urban population in different categories of country (poor, rich, etc.). The question wording from part **(i)** could have been used as a model. Without more exact phrasing, including the use of the term 'urban population', answers were insufficient, inaccurate, or misleading, therefore common answers such as 'there were more poor countries' were inadequate. Credit was available for illustration with data from Fig. 3 but this was rarely attempted.

(iii) Many candidates recognised the focus on pull factors and answered the question well. Only a small minority of candidates wrongly focused on push factors or urban to rural migration. Generally responses focused on the availability of jobs, better education, health facilities, and availability of water supply, electricity and sanitation.

(iv) This question was well answered and most answers recognised the impacts of deforestation and air and water pollution on wildlife and food chains. Some candidates incorrectly included global warming in their impacts or referred to the impacts on people rather than the natural environment.

(b) (i) Descriptions of three changes were generally accurate and the resource was well used. Some answers described each zone in turn without making an explicit comparison; however such answers were still credited.

(ii) The answers to this question were wide ranging and most candidates scored some marks, but there was generally little development of ideas. The most common focus was on the availability and cost of housing, and the lack of jobs. Some answers explained the plight of new migrants in great and not all of the information was linked to the question set.

(c) This was a well-known topic and there were some good accounts of self-help schemes, particularly in Brazil and India, which were well developed, sometimes with place specific detail. There were also many relevant answers with little detail, typically marked at Level 1 as statements were brief and simplistic. Answers usually focused on improvements in services and housing which, in the best cases, were attributed to government or another organisation such as NGOs. The question required descriptive detail so diversion into the effects of the improvements (i.e. explanation), which was often seen, was not relevant. Similarly those candidates who devoted much of their limited space to a long introduction about conditions in squatter settlements did not gain credit for this.

Question 3

(a) (i) Most candidates gave an acceptable definition, although some lost the mark through poor expression which made the answer unclear.

(ii) Few candidates seemed to score both marks because of lack of detail. Credit was usually gained by description of the cone, crater or lack of vegetation.

(iii) Although few candidates scored full marks on this question most made the link with plate boundaries. Fewer candidates referred to the Mid Atlantic Ridge or the Pacific Ring of Fire and very few candidates named adjacent tectonic plates where there was a number of volcanoes. Weaker candidates referred to specific named regions or volcanoes rather than describing 'global distribution' whilst others referred simple to land and sea, volcanoes being found 'all over the world', or offered irrelevant explanation.

(b) (i) Most candidates were able to extract the relevant information from the text and apply it to the answer. The most common answers identified the increase in tourist numbers and tourist income; fewer answers identified the increase in employment or named specific jobs.

(ii) There were many excellent relevant answers, but a significant number of candidates incorrectly included references to tourism. The most common benefit was fertile soils, and many also referred to geothermal energy and mining activities.

(iii) This was another familiar topic and was generally well answered, with some candidates successfully attempting to develop their ideas. The most commonly described problems were deaths and injuries, and effects on homes, livelihood and transport.

(c) Many candidates did not seem familiar with the causes of eruption, particularly in relation to a specific volcano. Many wrongly described the features of a volcano or eruption or described the effects of an eruption. In many cases where answers focused on the effects they were often simplistic and/or unrelated to the named example. The most comprehensive answers tended to use Mt St Helens and developed ideas such as the direction of plate movement, subduction, pressure and the escape of magma, including place specific detail by naming the plates involved. There were some good diagrams though in contrast many were extremely weak and did little or nothing to add to the written text.

Question 4

(a) (i) Most candidates ranked the countries correctly although a few candidates did not understand how the answer should be written and drew vertical bars in the table.

(ii) Most candidates identified the two countries. Other candidates suggested Peru and Nigeria because they looked at the wrong part of the map key.

(iii) Key words in this question were 'large amounts', not always noticed by candidates, but most did score some marks. Better answers focused on clearance of the forest to satisfy the demand for timber or to create space for settlement, roads or commercial agriculture. Candidates who wrote about traditional uses such as subsistence agriculture or hunting and gathering missed the point of the question.

(b) (i) This was generally well answered with the most common ideas suggested being species lost when trees are cut down, loss of habitat, and disruption to food supply.

(ii) Many candidates wrote about how the trees protect the soil and bind the soil particles together but some did not continue this idea through to explain how the loss of them may cause soil erosion. Nevertheless most did show some understanding here, the most common suggestion being that the soil is exposed to erosion by loss of the canopy, and the highest quality answers included appropriate terminology such as interception, infiltration and surface run off.

(iii) Many candidates had few positive ideas about sustainable development. The two ideas most commonly suggested were afforestation and the implementation of quotas for logging. A lack of understanding was shown in many answers through an emphasis on 'not allowing' developments rather than suggesting how this might be achieved. Some candidates explained why sustainable projects were a good idea rather than suggesting how they could be done. Tourism was a common answer but with no explanation of ecotourism. Few candidates mentioned any sustainable logging methods.

(c) Few candidates achieved full marks because of the requirement for both explanation and description. Explanation was the weakest part of most answers and there were some inaccuracies, such as 'low temperatures' and 'dry season'. Most candidates however referred to high temperatures, heavy rainfall and high humidity, if only in a simplistic way to achieve Level 1. Only the best candidates included figures to support their statements along with appropriate explanation. Whilst a good understanding of convectional rainfall was shown by well-prepared candidates, they were less successful in explaining reasons for high temperature or the small temperature range. Inexplicably many candidates across the ability spectrum digressed into adaptations of rainforest vegetation to the climate, which were not relevant.

Question 5

(a) (i) Most candidates gave the correct definition including 'to sell' or 'for sale'.

(ii) Most candidates scored both marks. An error seen was to identify woollen mills, grain market or sheep auction as a crop or animal product.

(iii) Most candidates understood the idea of natural inputs although a minority included human inputs.

(iv) Many candidates gave comprehensive answers and suggested machinery, fertilisers, pesticides, GM crops and selective breeding as the main ways to increase output. Weaker candidates had limited ideas such as getting people to work harder and employing more labour.

(b) (i) Many candidates found the skill of describing features from the photograph quite difficult and some missed the key words 'of the farming'.

(ii) This question was not generally answered well. Whilst most answers correctly focused on temperatures, water supply, soil and communication links there was little real development even in the best answers, and in the case of weaker candidates little or no understanding of the factors which influence agricultural land use. Whilst such candidates suggested climate as the main influence it was often too vague to be worth any credit at all.

(c) This was thoughtfully answered by many candidates, responses falling into two broad categories - either explanations of why subsistence farmers do not become commercial farmers, or why people start out farming at a subsistence level. Both of these approaches were credited. Answers were well exemplified with a wide variety of case studies, including rice farming in the Asian sub-continent or shifting cultivation in the Amazon, or rural areas known by and local to the candidates. Most candidates did show some understanding of subsistence farming but weaker answers only defined the term or described the farming processes rather than explaining why farmers are subsistence farmers. The most common correct explanation suggested was poverty and subsequent inability to purchase machinery, extra land or fertilisers. Other ideas included the restricted area of available land and poor availability of capital for commercial farming.

Question 6

(a) (i) Whilst a considerable number of candidates gave answers within the accepted range, others were inaccurate with the answers given.

(ii) Many candidates gained two marks, however common errors were to repeat 'reservoir' and to identify 'the sea' rather than the desalination plant.

(iii) This was well answered and many candidates scored three marks. Some candidates failed to give an appropriate industrial use and a few described the sources of the water rather than focussing on its uses.

(iv) This was a familiar topic for many candidates and many wrote wide ranging answers, typically including ideas such as disposal of waste from factories, run-off of fertilisers, pesticides or other chemicals from farms, litter and human sewage. Some candidates wrongly focused on the effects of pollution, including eutrophication.

(b) (i) The task of interpreting a photograph was again difficult for many candidates. There was some confusion between site factors and the advantages or disadvantages of a reservoir in the area. The most common suggestion was a lack of settlement in the area. Many candidates had difficulty explaining how the shape of the valley and its sides would help in dam construction. Many incorrectly referred to steep slopes.

(ii) The candidates were asked to consider two sides of an argument and generally did, producing a balanced answer, but the arguments against were often more forcefully presented. Many candidates mistakenly linked their answer here to Question **(b)(i)** presenting arguments for and against siting factors rather than the more general benefits or problems of the scheme.

(c) Many candidates gave good, detailed answers, some with place specific detail. They suggested a range of ideas including poverty, drought, infertile soil, overpopulation, lack of money and political reasons, though many candidates just focused on one issue (e.g. drought) without considering other ideas and developing them. Detailed answers were given about political problems and civil war in countries such as Zimbabwe, Sudan and Somalia. Another reason suggested was the use of more fertile soil for cash crops to export. A minority of candidates included irrelevant details of effects of the food shortages, however most scored marks, even if weaker candidates rarely got beyond Level 1 as their responses were brief and simplistic.

GEOGRAPHY

Paper 0460/13

Paper 13

Key Messages:

In order for Candidates to perform well on this paper they need to be able to:

- Interpret a range of sources such as maps, graphs or diagrams in order to extract information and sometimes analyse the data to show patterns or trends.
- Add data to a map, graph or diagram or complete a diagram by adding labels therefore in order for candidates to do this they must understand how pie charts, bar graphs, maps etc. are constructed.
- Use photographs or pictures to generate ideas, issues or to describe features such as a meander.
- Provide full and accurate definitions of key geographical terminology e.g. what is meant by a river's velocity?
- Show understanding of key geographical terminology, processes and features by providing full descriptions and/or explanations of geographical themes, events or features e.g. how coral reefs are formed or how infrastructure can be improved.
- Describe and explain, in detail, a range of case studies with place specific detail and apply this understanding to the question being asked .e.g. Explain the impacts of a volcanic eruption on people and the environment. This requires information relating to impacts only on people and the environment. Any detail on the causes of the eruption are not required for this question despite the fact that the candidate would know this information.
- Write in depth and detail in a succinct manner and avoid repetition.

General Comments:

This was the second November examination in which candidates used a combined question and answer booklet to write their answers. This format is now familiar to centres, therefore in the vast majority of cases candidates made effective use of the space provided. It seems that this session the candidates managed the space more effectively. It was unusual to see many pages of extra writing as most seemed to use the additional page well. As question and answer booklets will continue to be the format used it is important that candidates are made aware that they should:

- write only on the lines provided, not underneath the final line or elsewhere on the page (e.g. in any area of unused space at the bottom of a page).
- continue any answers which they do not have space for on the lined page(s) at the back of the booklet. If they do this they must indicate that they have done so (e.g. by writing 'continued on Page XX') and carefully write the number of the question at the beginning of the extra part of their answer. They should only use extra loose sheets of paper if this extra space has been used up.

The examination was considered appropriate for the ability and age range of candidates as there was a good response to the November 2012 examination paper. The majority of candidates were able to answer in full and even weaker candidates attempted most sections of their chosen questions.

A high number of candidates presented work of a very high standard which was pleasing to see. There were only a few candidates who did not fully comprehend what was required in the question. Candidates also generally made good use of the resources provided.

Many candidates made use of the additional pages at the end and all candidates should be encouraged to do this if they need extra space to write their answer rather than trying to squeeze it onto the same page when the lines have run out or at the sides of the page, as it becomes difficult to read (see above).

The examination paper gave a wide spread of marks allowing for positive achievement for all but also allowed for sufficient challenge for the most able.

There are still a few candidates who attempt all questions instead of following the rubric.

There are still a few candidates/Centre's who are learning case studies from previous mark schemes which is not really conducive to candidates' understanding of the geography involved. This stands out especially when an answer simply does not 'fit' with the question being asked. Candidates who tend to do well on case study questions are the ones that use local case studies because their knowledge and understanding really shines through and they score good level 2 or high level 3 marks. The use of local case studies that candidates can write about in detail with place specific information or even visit them should be encouraged as opposed to learning about distant case studies that have no/or very little relevance to candidate's everyday lives. It is recognised that this is not always possible for example when teaching about the impacts of a volcanic eruption a distant case study will probably have to be used – so teacher judgment is the key here to determining which case studies are most suited to their candidates and Centre. Also to select up to date examples that may have been in the news recently tend to offer a wealth of information and resources that can be used in the classroom when teaching about these examples/places which candidates will find more interesting and relevant and most importantly they will be able to write about them in detail in the examination.

The following items of general advice, which have been provided previously in this report, need to be given to future candidates who should:

1. make the choice of questions with care, ensuring that for each question they choose they have a named case study about which they can write in detail and with confidence.

2. answer the three chosen questions in order, starting with the one with which they are the most confident, and finishing with the one with which they are least confident (in case they run out of time).

3. read the entire question first before answering any part, in order to decide which section requires which information to avoid repetition of answers.

4. highlight the command words and possibly other key words so that answers are always relevant to the question.

5. use the mark allocations in brackets as a guide to the amount of detail or number of responses required, not devoting too much time to those questions worth few marks, but ensuring that those worth more marks are answered in sufficient detail.

6. consider carefully their answers to the case studies and ensure that the focus of each response is correct, rather than including all facts about the chosen topic or area, developing each point fully rather than writing extensive lists of simple, basic points. It is better to fully develop three ideas rather than write extensive lists consisting of numerous simple points.

7. study the resources such as maps, photographs, graphs, diagrams and extracts carefully, using appropriate facts and statistics derived from resources to back up an answer and interpreting them by making appropriate comments, rather than just copying parts of them.

The following detailed comments for individual questions will focus upon candidates' strengths and weaknesses and are intended to help centres better prepare their candidates for future examinations.

Comments on specific questions:

Question 1

Was a popular choice made by candidates with the vast majority opting to answer this question.

(a) (i) Most candidates were able to use the source (Fig. 1) adeptly in order to identify the most densely populated country as Bangladesh. A few candidates incorrectly identified Pakistan this may be due to them looking at the population column rather than the population density column.

(ii) The majority of candidates were able to calculate the natural population growth of Bangladesh by subtracting death rate from birth rate. Most candidates correctly showed their working out i.e. 24.7 – 9.2 and thereby gave the correct answer as 15.5.

(iii) This question has a comparative element to it i.e. reasons for why the birth rate is higher in Pakistan than Australia and as such candidates should show their understanding by using terminology such as 'whereas, but, unlike' etc. to show their comparisons. Most candidates wrote about Pakistan having a higher birth rate and gave suitable reasons without the comparison e.g. lack of availability of contraception in Pakistan but were not penalised for this. Hence, this question was well answered with the most common reasons given as 'children needed to work on the farm, lack of family planning, not educated about contraception/family planning, children needed to look after parents in old age'. Some candidates wrote their answers in reverse i.e. 'women in Australia want a career first and so delay having children' which is equally valid.

(iv) Many candidates scored high marks on this question and were able to describe 4 problems which may be caused by overpopulation. Most common responses included ideas such as 'inadequate food supplies; lack of housing; poor access to education and/or healthcare; spread of diseases'. There were responses that did not quite go far enough to gain a mark such as 'lack of resources; poor living conditions; overcrowded; disease' these responses needed further clarification to gain the marks. Also some responses that were not valid to the question were seen, the most common ones being 'crime and noise'.

(b) (i) Most candidates gained 1 or 2 marks for describing the areas with a high population density by using the sources provided (Fig. 2). Many candidates gained their marks for correctly identifying that the areas are 'near the coast' and for either stating 'around main cities' or for naming the cities. Very few candidates identified the 2 distinct areas in the south and in the central part of the map/California. Many responses went beyond description and included ideas with material more relevant for **1(b)(ii)** e.g. many responses referred to relief and precipitation rather than or as well as location.

(ii) Most candidates were able to gain at least 2 or 3 marks for this question with some gaining 4 or 5 marks. Candidates were able to use the sources in Fig. 2 to explain why there were areas of high population density in California. Most candidates referred to rainfall and relief e.g. 'high population density in areas below 600m' and then went on to develop this further i.e. 'as building is easier on flatter land'. Some candidates also understood the importance of a coastal location for the development of ports and trade. However, some responses were seen referring to tourism, scenery and migration which were not relevant.

(c) This question differentiated well as the full range of marks was seen. The favourite case study examples seemed to be Mexicans to USA, Turks to Germany and Polish to UK but a good selection of regional examples were also used from South East Asia and Australasia where candidates have obviously used local examples. Some excellent developed ideas showing place specific information was given referring to both push and pull factors showing candidates' excellent understanding of reasons for an international migration. Simple level 1 responses such as 'lack of employment; hopes for a better education; better healthcare' gained a maximum of 3 marks. If no example was given then candidates could gain a maximum of 5 marks. Whilst it is good to see candidates using local case studies the quality of responses was not always better if they chose examples from their region.

Question 2

Another popular choice by candidates many selecting this question as well as **Question 1** or as an alternative to **Question 1**.

(a) (i) The majority of candidates were able to accurately state the meaning of the initials CBD as 'Central Business District'. Some incorrect variations were also seen.

(ii) Most candidates were able to correctly select the photograph that was taken in the CBD as Photograph C. Many were able to justify their choice and gain full marks for stating e.g. 'pedestrianised area; many shops; lots of people'. Responses that did not go quite far enough to gain the second mark or gained no credit included ideas such as 'no housing; busy; tall; names of individual shops'.

(iii) Many candidates were able to describe how the 3 methods shown in Photographs A, B and C reduces traffic in the CBD. Generally candidates showed good understanding of how the methods worked although some missed the focus of 'reduces traffic in the CBD'. A lot of candidates gave the same reason for 2 or all 3 of the photographs, usually citing that the method reduced the number of vehicles on the road without saying how, as such candidates should try to avoid repetition. Ideas such as 'trains can carry more people than a car; park and ride means cars do not have to enter the CBD; pedestrianised areas means people have to walk' were most commonly used and gained all 3 marks.

(iv) Most candidates were able to gain at least 1 mark for this question with many scoring high 3 or 4 marks. Candidates were able to explain why it is important to reduce the problems of traffic congestion in urban areas and as such the question differentiated well. The most frequent answers included: 'wastes people's time; leads to road rage/stress; reduces air pollution; reduces noise pollution'. Responses simply referring to 'reduces pollution' did not gain a mark.

(b) (i) Candidates were asked to suggest 3 reasons why traffic congestion is likely in the CBD of Hereford using Fig. 3. Some candidates gained full marks for this question referring to ideas such as 'many roads lead to this area; there is only one bridge over the river; not all areas are covered by a railway line'. Responses such as 'only 1 pedestrianised area; many Schools; lots of industry' required further development to gain a mark e.g. 'many Schools are located there which means there will be more traffic in the morning and afternoon when parents drop off/collect children from School'. Many candidates did not use map evidence well.

(ii) Candidates had to select 1 option from a choice of 3 for reducing traffic congestion in Hereford CBD. The most popular choice was option B 'improve public transport throughout the city'. Candidates needed to explain why they chose their option and also why they rejected the other 2 options. Few candidates could fully justify their choice or reasons for rejecting the other 2 to gain full marks. Hence, this question differentiated well. Many generalised or unsubstantiated ideas were given such as 'restricting the type of vehicles would not reduce traffic', or 'building a ring road would not affect the traffic in the CBD'. More developed ideas included reasons such as: 'providing more buses or trains will result in less cars being on the road; bus lanes can be given priority; people will be on time for work; option 1 was rejected as other vehicles will still be used and cause congestion; option 3 rejected as building a ring road will only divert through traffic away from the CBD'.

(c) Candidates had to identify an urban area that they had studied and describe the attempts that have been made to improve the poor quality housing. As such candidates could select any urban area in a MEDC or LEDC. The best responses tended to be focused on urban areas in LEDC's such as Sao Paulo or Rio de Janeiro where candidates were able to refer to actual schemes in named parts of the city and develop the points made in detail. For example: 'in Rochina self help schemes have been set up whereby the government provide breeze blocks and the residents build new houses'. Many candidates went into detail about what living conditions were like in shanty towns which was not required for this question. Also many simple Level 1 answers were produced especially when MEDC's were selected such as 'provide heating'.

Question 3

More candidates opted for this physical question in comparison with previous years and it was probably the 4th most popular choice made by candidates.

(a) (i) The vast majority of candidates were able to correctly provide the definition for 'river's velocity' which is the 'speed of the flow of the river' however, candidates were given the mark for simply stating 'speed'.

(ii) Most candidates scored 2 marks here by correctly identifying a river process for each statement. The vast majority of candidates gained the 2 marks for stating: 'erosion and deposition'. Other successful answers referred accurately to named erosional processes for the first part of the answer.

(iii) Good knowledge was shown here by most candidates as most were able to name 3 processes by which a river is likely to carry out erosion i.e: 'hydraulic action; corrasion/abrasion; corrosion; attrition'.

(iv) Another very well answered question as the majority of candidates were able to explain how a river's load is transported by saltation, solution, suspension and traction. Some candidates confused saltation with traction and vice versa. A minority of candidates needed to develop their response for suspension more fully e.g. 'materials are floated' is not developed enough to gain the mark and would need to say 'materials are carried within the water'. Many candidates scored high marks on this question.

(b) (i) Most candidates were able to gain at least 2 marks for describing the features of the meander shown in Photograph D. Marks were most frequently awarded for reference to the river cliff and slip off slope. Very few candidates gained the 3rd mark as they tended to go into explanations which were more appropriate for **(b)(ii).**

(ii) A few candidates could not explain how river processes have created the meander and gained no marks whilst others gained at least 3 or 4 marks by referring to fast/slow flow on outside/inside of the bend and linking this with erosion and deposition. Simply listing processes from previous questions was not appropriate and did not gain any marks.

(c) Candidates could name any area which they had studied and describe the impacts of river flooding. The causes of the river flood were not required and did not gain any marks. This case study was generally well answered by many candidates and the most popular choice was Bangladesh. Candidates were able to describe the impacts in detail and include place specific information such as the names of the rivers, numbers of deaths/homeless. There were many simple statements given that did not go beyond Level 1 no matter which example was chosen such as 'people died; crops destroyed'.

Question 4

This question was probably joint 4th with **Question 3** above.

(a) (i) Candidates were asked to study Figs. 5A and 5B which contained information about deforestation in tropical countries. They had to then estimate the percentage of deforestation caused by cattle ranching in Amazonia (the exact amount was 60%). The vast majority of candidates estimated the correct amount yet a significant minority did not gain the mark even though a tolerance either side of 60% was allowed.

(ii) Using Fig. 5B again candidates were required to identify the annual rate of rainforest lost in Brazil and Democratic Republic of Congo and to underline the correct answers. Almost all candidates gained both marks. Some candidates did not attempt this answer even though they had selected **Question 4** they missed this section out.

(iii) Many candidates provided some well thought out responses as to why it is difficult for LEDC's to reduce the rate of deforestation. Good responses made reference to the economy, development and employment which were more valid and detailed than responses that just listed uses of the rainforest which did not really answer the question as set.

(iv) Most candidates were able to suggest at least 1 valid idea for how the rainforest could be used more sustainably which most frequently referred to tree planting which gained a mark for almost all candidates. A wide range of responses were seen making use of all other mark scheme ideas which were seen in various combinations yet it was unusual to award more than half marks to many candidates. Ideas such as 'strict controls, laws, conservation' etc. needed further elaboration to gain the marks.

(b) (i) Candidates needed to refer to Fig. 6 in order to identify 3 impacts of deforestation on the atmosphere. This was generally well answered and most candidates gained at least 2 marks with many scoring full marks. Some candidates appeared to ignore 'atmosphere' in the question and wrote about impacts which were irrelevant to the question.

(ii) Varied responses were seen to this question and as such the question differentiated well. Most candidates were able to gain at least 3 marks with many scoring 4 or 5 marks for explaining how deforestation may lead to flooding of local rivers. Many candidates developed their ideas fully e.g: 'there will be less interception; so rain will fall directly on to the ground; soil erosion may occur; soil will run into river and displace water…' Many candidates used geographical terminology well such as soil erosion, interception, lag time etc.

(c) Candidates had to refer to an area they had studied and describe and explain the main features of its climate. The most common area selected was the Amazon Rainforest. Some candidates referred to vegetation and ignored 'climate' which gained no marks. Many simple responses were given that did not gain more than Level 1 – 3 marks maximum e.g. 'Hot, high rainfall, lots of evapotranspiration'. Responses that linked description with explanation gained high Level 2 or 3 marks e.g. 'the temperature is high all year round between 28-30^{o}C with a small temperature range of just 2 degrees' is a more developed description followed by explanation e.g.: 'this is because tropical rainforests are located within 5^{o} north and south of the equator where the sun is always directly overhead which means temperatures are always high'.

Question 5

This question was approximately the 5th most popular choice made by candidates.

(a) (i) Referring to Fig. 7 candidates needed to name an industrial zone in the Pacific Belt of Japan. Virtually everyone gave a correct example from a choice of 'Fukuoka/Osaka-Kobe/Nagoya/Tokyo'.

(ii) Again, referring to Fig. 7 candidates were required to give 2 pieces of evidence which suggest that the Pacific Belt is important for Japan's industry. The majority of candidates gained the full 2 marks however, some candidates did not include the statistics and a few candidates referred to the population which was irrelevant to this question.

(iii) Many detailed and well thought out responses were provided to explain why most of Japan's industry is located in the Pacific Belt. The majority of candidates gained full marks with others scoring at least 1 or 2 marks. Most frequent responses referred to: 'proximity to ports; easy for imports/exports; interior is mountainous; 65% of population lives there' etc.

(iv) Conversely with **(b)(iii)** above it was rare to see high marks scored on this question. However, there were some perceptive answers suggesting likely problems for Japan of having most of its industries situated close together. Many candidates tended to focus on developing just one problem, such as overcrowding or air pollution, which restricted the marks gained rather than looking for problems as stated in the question. The majority of marks were awarded for ideas such as: 'overcrowding of residential areas, lack of open space, congestion on roads, air pollution' to name a few.

(b) (i) Candidates were required to refer to Fig. 8 and suggest reasons why areas chosen as Technopolis sites needed to be near a city of at least 150 000 people, near a University and in an area with good transport links. The ideas required here were well understood by most candidates and the majority gained full 3 marks. The reason for being near a University caused most problems for some candidates as many thought that Technopolis would use the University facilities rather than the University providing well educated and qualified workers or high technological research.

(ii) Generally not well answered with many candidates misreading 'for cities' as 'of cities' therefore giving irrelevant responses and wrote about why Hakodate was a good location, rather than how Hakodate might benefit. From those candidates who did interpret the question correctly there were some well developed and perceptive responses as to the advantages for cities like Hakodate of being chosen as a Technopolis site such as: 'creation of jobs; therefore stimulates local economy; leading to investment in local infrastructure…'.

(c) Candidates were required to explain the causes of global warming and to include a labelled diagram. Some exceptional responses, supported by superb diagrams, well annotated to explain the causes were provided gaining full marks but these were in a minority. There were many simplistic responses provided with poor attempts at drawing a diagram. Some diagrams were not annotated and some candidates did not attempt a diagram at all which restricted the amount of marks available to maximum 5. Some candidates wrote about misconceptions, particularly with reference to holes in the ozone layer letting too much heat in and attempted to show this on the diagram despite having written about the build- up of CO^2 trapping heat. Many candidates were able to gain Level 2 marks if they wrote about the appropriate gases building up and the trapping of heat. Some candidates also wrote about the effects of global warming instead of causes which was not required for this question. In general there was much evidence of confusion in regard to global warming and the quality of the diagrams, with some exceptions, was poor.

Question 6

This was approximately the 3rd most popular choice made by candidates.

(a) (i) After studying Fig. 9 candidates had to name an example of a job in the primary sector. The vast majority of candidates did this successfully by identifying jobs such as: 'farmer, miner, fishing' etc. Some candidates named jobs from the secondary or tertiary sectors which did not score any marks but these answers were in the minority.

(ii) Candidates were required to use the information from Fig. 9 to show that there is a negative relationship between GDP per person and the percentage of people employed in the primary sector and they should have used data in their answer. Some candidates gained the full 2 marks by identifying that countries with a low GDP have a high percentage of people working in the primary sector for 1 mark and the 2nd mark was gained for providing 2 pairs of statistics to illustrate this i.e. 'Nepal has $15 000 GDP and 75% employed in Primary industries whereas Austria has a higher GDP of $36 000 and only 6% employed in Primary industries'. Many candidates tended to either state the general relationship or give statistics rather than doing both. Some candidates gave statistics for one country which were meaningless without comparison with another.

(iii) Candidates struggled to explain why countries with a low GDP per person have a high percentage of people employed in the primary sector. Hence, this was not well answered by the majority of candidates, who mostly referred to low paid jobs being all that LEDC people could aspire to which did not gain any credit. Many candidates gained 1 mark for reference to people lacking education or skills. A minority of candidates also gained marks for 'many people work in agriculture; there is a lack of factories; many are subsistence farmers; there is a lack of mechanisation' which are all mark scheme ideas.

(iv) Similarly, to the above question, few candidates could explain why there is a large tertiary sector in some countries. Answers usually failed to see a link between need and demand for services and the tertiary sector. Many of the ideas in the mark scheme for this question were rarely seen. Many candidates wrote about 'high wages' or 'they are developed' which does not explain why there is a high percentage in the tertiary sector. The majority of candidates gained 1 mark for 'many educated people/skilled people'. A minority of candidates identified that 'there is good service provision or gave examples; companies involved earn high revenues; there is much investment from multinationals; services such as banks support other industry etc…'.

(b) (i) Using the 3 Photographs E, F and G candidates had to identify 3 attractions of Swaziland for tourism. Candidates generally gave good responses and most frequently included ideas such as: 'wildlife; traditional cultures; golf course'. Some responses required further development e.g. 'scenery, souvenirs, greenery, animals', in order to gain any credit.

(ii) This question asked candidates to explain how the infrastructure of a country changes as tourism develops. Many candidates did not understand the term infrastructure and wrote about improving it without any indication of what it was but merely repeated the term 'infrastructure' throughout their response. Some candidates wrote about jobs, hotels etc. which gained no credit. The most common correct references were to aspects of the transport infrastructure, such as roads, public transport and airports. Very few candidates wrote about health and educational facilities or water and electricity supply networks, yet the improvement of such facilities is inevitable with the development of any major economic activity, particularly tourism.

(c) Candidates were asked to describe the impacts of tourism on the natural environment for a named area which they had studied. A wide range of responses with some very good examples which focused on the Great Barrier Reef, were provided gaining high marks. Conversely many responses only achieved Level 1 marks for simple ideas such as 'litter on beaches, in the sea; air pollution'. These responses tended to be for areas such as 'Costa Del Sol' and regions such as this. Some candidates also missed the idea of 'natural' environment which was a requirement of the question. It is also worth pointing out that impacts could be negative or positive as the question did not specify yet most of the responses tended to focus on the negative aspects of tourism.

GEOGRAPHY

Paper 0460/21

Paper 21

Key Messages

- Good answers were focused on the questions asked and often were concise, making excellent use of the resources provided in the paper.
- Candidates should make sure that they understand clearly the different meanings of the command words such as *describe*, *suggest* and *explain* in questions and what responses these require.

General Comments

Responses to the questions ranged from very good to poor across the whole paper. . There were some really excellent scripts and only a small number of weak ones which scored fewer than 20 marks. Unfortunately, poor and illegible handwriting was a feature of some scripts. Almost always, candidates answered the questions within the spaces provided and avoided the use of additional sheets. Candidates were usually able to complete the paper in the allotted time.

Question 1

(a) Many candidates scored full marks in this section and made careful reference to the map key. Copying of a full line of the key showing a number of symbols should be avoided as no marks can be awarded for this. For example, in part **(iv)** where the correct answer was *quarry* or *excavation.* Those candidates who wrote the whole of *mining or prospecting trench, mine dump, quarry or excavation* were not credited.

(b) In part (**i**), many candidates identified that the rivers flow from north to south but in part **(ii)** they found it more difficult to give map evidence to support this. The *decreasing altitude from north to south as shown by contour lines and spot heights, the increasing width of the rivers from north to south and the position of the lake to the north of the Mapai Dam* were some of the valid ideas given by stronger candidates. In part **(iii)** and part **(iv)** many candidates scored well and it was pleasing to see that they had a good grasp of basic map-reading techniques.

(c) There were some accurate responses but attention should be given to careful measurement and plotting, using an arrow similar to that given as an example in the question.

(d) Those candidates who correctly located the north-west quarter of the map extract usually went on to score well in this question. Careful use of the map key was again vital. The good answers included points such as *huts and buildings, sparse settlement, tracks, many junctions, rivers* and *pans.*

(e) Although some excellent answers were received others could have been improved if candidates had understood better the meaning of the word *relief*. Discussion of drainage, land use and settlement were frequently included in lengthy answers yet were completely irrelevant. Good answers included points such as *gentle in the west, steep in the east, west lower (or east higher) over 620m in east* and *520 – 540m in west.*

Question 2

(a) The majority of candidates gave the correct answer of *5*. Others did not notice *some windows broken* in Table 1 and gave *7* as their answer.

(b) Parts **(i), (ii) and (iii)** were generally well-answered with candidates placing a letter E in the intensity 8 area and shading the intensity 6 area. Description usually involved saying that the

intensity was greatest around San Francisco and decreased out from that point, with one intensity 4 area within the intensity 3 area. In part **(iv)** fewer candidates managed to suggest a valid reason and often described an aspect of the uneven pattern shown instead.

(c) Here candidates were expected to link their answers to evidence in Table 2. Correct answers included such points as *powerful earthquake therefore buildings collapsed*, *many years ago therefore poor building design, many years ago therefore poor relief available, many years ago therefore no warning systems* etc. Some candidates identified that the earthquake was of value 8.0 on the Richter scale but did not always interpret this to explain that it was a powerful earthquake.

Question 3

(a) There were some good responses in this section and candidates chose the full range of possible features. These included points such as *double roof for insulation and to prevent instruments from overheating, slats or louvres to allow air to circulate but stop wind entering, painted white to reflect sun's rays and prevent instruments from overheating, 1 metre above the ground to avoid heating or cooling from the ground surface, on grass to reduce heat reflection and the effects of the ground surface*. Only one candidate recognised that the standard height of the Stevenson Screen at one metre above the ground means that results from various stations can be compared.

(b) Many of the candidates who attempted this question scored well, giving the correct units in each case. Some candidates left the spaces blank and did not seem to recognise the calculations involved.

Question 4

(a) Most candidates scored full marks in this section.

(b) In part **(i)** most candidates answered *mining* or *quarrying*. There were some good answers for the advantages in part **(ii)**, where candidates relied on their background knowledge to give advantages such as *jobs* or *a boost to the local economy*. When considering the disadvantages candidates gave points such as *visual pollution, danger of steep faces, loss of agricultural land, noise from machinery, dust, increased road traffic and loss of habitats*. There was confusion between open-cast and deep mining in some answers.

Question 5

(a) Most candidates scored well in this section and had a clear understanding of the map key provided. In part **(i)** Northland, Taranaki, Manawatu-Wanganui and Canterbury were all frequently quoted. In part **(ii)**, West Coast was generally recognised. Candidates made good use of the key to plot correctly the population density of Hawke's Bay in part **(iii)** and to calculate the population in part **(iv)**.

(b) This proved to be rather challenging for many. Those candidates who wrote answers which focused on geographical areas such as the north, south, east or west, or used named areas tended to score well, with the contrast between west and east being most frequently quoted. One mark was available for one relevant numerical value with units. Another mark was also available for a general comment on the low overall densities. Other candidates simply listed numbers from the map without comment and gained no marks.

(c) Most candidates recognised that the wetter areas were more sparsely populated and vice versa.

Question 6

(a) Pie charts were generally accurate and well-presented and the vast majority of candidates used a protractor and ruler to plot the graph. Freehand answers would have scored if they were within the tolerance allowed but this was usually not so.

(b) The bar chart was correctly completed by the vast majority of candidates with the correct key in most cases.

(c) This was possibly the most challenging question on the paper. The key idea here was to consider the possible effects on Kenya of <u>increasing</u> the production and export of vegetables, flowers and house plants. Most candidates tried hard to interpret the information give in Fig. 9 and Tables 4 and 5 and wrote at length. The most common correct points included *bringing unused land under cultivation, producing a greater % of GDP from agriculture, giving increased foreign exchange earnings* and *giving an increase in soil erosion or desertification*. Less frequently, candidates noted *the environmental impact of air transport, use of land which could be used for food crops* and *increased food imports*. Not all candidates appreciated the need to consider the effects on Kenya of the <u>increased</u> production. There were a few excellent responses which took this into account.

GEOGRAPHY

Paper 0460/22

Paper 22

Key Messages

- Particular care is needed reading key words within questions, such as *physical*, *human*, *settlement*, *relief, distribution*.
- The summit of a hill is likely to be higher above sea level than the height of the last closed contour.
- Use of correct geographical terminology is encouraged – for example it is not good geography to use phrases such as "above the equator" to describe places in the northern hemisphere.
- For a plot on a triangular graph the three percentages should add up to 100.

General Comments

There was a somewhat variable response to the paper but good candidates succeeded in scoring high marks. Overall there were no whole questions which candidates found particularly difficult but parts of questions which caused difficulties for some candidates are listed within this report. It was encouraging to see an improvement in some of the areas of weakness which have been mentioned previously in reports. These included taking care when the key of a survey map lists several features on one line; giving the third and sixth figures of grid references; where questions ask for differences having some comparison in the answer; and, in photograph interpretation questions, describing what can be seen in the photograph.

Question 1

(a) This part of the question tested candidates' ability to locate features on the map and then identify them. This was answered very well with many candidates giving the correct answers of *narrow tarred road, trigonometrical station, rapids* (*dam* was also accepted here as the two symbols were close together on the map), *international* and *very dense* or *dense bush*. Where candidates gave more than one answer and one was wrong then the answer was not given credit.

(b) Most candidates were able to give the correct grid reference of 912427. The railway was kept level by an embankment. Many candidates got this correct but others spoiled their answers by giving the whole line from the key and writing *embankment, cutting, tunnel*. The map evidence for the area around Beitbridge station being important for livestock was the pens and dip tanks. The Examiners also gave credit to those candidates who suggested the rivers for drinking water or the bush for grazing.

(c) The response to the question was very variable. Most candidates understood that the Limpopo river was more than 300m wide but fewer recognised that all the rivers had many tributaries and the Tombwane river flowed from north east to south west. A small minority of candidates used more than one tick per row and were not given credit for their answers.

(d) Questions requiring candidates to mark features on a topographic profile have been set on this paper in many previous examinations but are still not answered particularly well. It was encouraging to see that the vast majority of candidates used the correct method of labelling, as illustrated on Fig. 2 by the labelling of the tracks. Candidates could get the correct answer for the Lipande river by labelling anywhere in the narrow valley floor. For the positions of the road and power line, measurement was necessary and it is suggested that the easiest way to do this is to use the edge of the piece of paper listed in the *Additional Materials* on the front cover of the paper.

(e) Large numbers of candidates scored three marks by noting the huts, forming a linear pattern, parallel to the river. Other possible points included: the small size of the settlement, the sparse settlement, the fact that the huts were above flood level and in bush. A significant number of candidates ignored the word settlement in the question and gave a general account of Area X.

Very few candidates realised that the highest point in Area X was over 600m above sea level. The highest labelled contour was 560m but there were contours higher than this.

Question 2

(a) Most candidates correctly answered roads and house in part **(i)** and 650m in part **(ii)**.

(b) In part **(i)** there were three possible answers: hydraulic action, abrasion (corrasion) and solution (corrosion). Part **(ii)** proved more difficult but many candidates correctly chose the third option.

(c) The vast majority of candidates completed the graph correctly and noted that the rate of coastal erosion had increased.

(d) Candidates found this part of the question slightly more demanding. The correct answer to part **(i)** was that the project would protect the road or houses or the canal. Possible answers to part **(ii)** included: cost, that erosion may not be controlled by the project, possible effects on other parts of the coastline, visual pollution, that the project may affect access to coast, and possible effects on habitats.

Question 3

The response to the question was very variable with very high marks and very low marks both being common. The good answers made points such as, for Photograph A: the narrow river, rapids, upper course, V-shaped valley, steep sides, no floor, boulders and interlocking spurs. For Photograph B, good answers included points such as: middle course, meander, erosion of bank, deposition of gravel in channel, flood plain, wide valley floor, flat valley floor, wide channel, steep in background. Poorer answers ignored the instructions in bold in the question regarding the river and relief, and included information about land-use, vegetation and agriculture. Many candidates speculated on the velocity of the river which is impossible to assess from a photograph.

Question 4

(a) The vast majority of candidates were able to identify international migration in part **(i)** and involuntary migration in part **(ii)**.

(b) The response to this part of the question was variable. Many candidates noted the concentration of cities in the northern hemisphere, in MEDCs and on coasts. Less frequently candidates noted that there were many cities in North America, three in Europe, a group in Arabia, two in south east Asia, two in Australia but none in Africa or South America. "America" was not considered specific enough in the context of Fig. 6 to be given credit.

(c) Many candidates noted that London had a greater number of residents from other countries compared to Paris and that London's residents came from greater distances. Less frequently candidates noted London's greater number from Asia, Paris' greater number from Africa and Paris' greater number from Europe. At this level it is expected that candidates know the names of the continents.

Question 5

(a) This was not well-answered and only a minority of candidates knew that 0^{o} was the Equator and that $23½^{o}$S was the Tropic of Capricorn.

(b) Most candidates were able to use Table 2 to identify the three seasons as *hot and humid*, *wet* and *dry* respectively.

(c) Examiners accepted a variety of correct responses but the most common fully correct answers were as follows. For people interested in active holidays, Alagoas was chosen because of warm or sheltered waters for bathing or water sports and reefs excellent for scuba diving. For people interested in culture and the natural environment, Bahia was chosen because of palaces or churches or the World Heritage Site, and forest, whales, or varied geographical environments.

Question 6

(a) In part **(i)**, candidates sometimes failed to interpret correctly the word *distribution* in the question which resulted in some irrelevant answers. Good answers referred to the partly industrialised countries in the north, the non-industrialised countries in the south or centre and the one industrialised country in Arabia. In part **(ii)**, candidates were required to make the simple link between poverty and countries that were not industrialised (or vice versa). The vast majority did this very well but just occasionally candidates tried to give reasons for such a link rather than describing it.

(b) Triangular graphs often cause difficulties for candidates, however many candidates scored at least one of the two marks available. This was usually for recognising that for Yemen the secondary percentage was 18 and the tertiary percentage was 22 (Examiners did accept a tolerance). The figures for Egypt proved more problematic and candidates sometimes quoted numbers that did not add up to 100%.

(c) This was a potentially difficult end to the paper, having to relate information in Table 3 to information in Fig. 11 but candidates coped very well with this question. The most common approach was to take the countries in order of industrialisation, noting that Niger was not industrialised and had low (4%) secondary employment, Libya was partly industrialised and had a higher (50%) secondary employment and Saudi Arabia was fully industrialised and the percentage of secondary employment had decreased (to 21%).

GEOGRAPHY

Paper 0460/23

Paper 23

Key Messages

- Some candidates could improve their answers by being sure to study all the Figures referred to in the question. **Question 4(a)(i)** and **Question 6(c)** illustrate this point.
- Candidates should take care with the terms *human* and *physical* features when used in questions and avoid including irrelevant information in their answers

General comments

The response to this paper was comparable with previous sessions**. Question 1(a)**, much of **Question 2** and **Question 6(b)** were found to be relatively straight forward, while **Question 3(a)(ii)** proved to be more difficult. Candidates appear to have had plenty of time to complete the examination, with many writing at length on **Question 6(c)** at the end of the paper. Some candidates also wrote detailed answers in **Question 4 (a)(iii)** and **Question 5(b)(ii)**, well beyond what was required for full marks.

Comments on specific questions

Question 1

(a) The paper opened with a fairly straightforward identification question. **A** was the district boundary, **B** was the Gregoire river, and **D** was a cane track. For each of **C** and **E** there were two acceptable answers, due to the similarity of the map symbols. **C** was a track or a road classed as "other", while shaded area **E** contained either scattered trees or scrub. The majority of candidates got most of the marks available here.

(b) Careful scrutiny of the populated areas, in conjunction with the key to the abbreviations, revealed six different service buildings: village hall, school, temple, church, mosque and hotel. It was necessary to list four of these for the two marks, but many candidates correctly identified all six. Some candidates had simply copied from the abbreviation section of the map key and did not interpret the meaning.

Candidates were next asked to describe the settlement pattern and distribution. Most pointed out that the settlements were on the coast and many also realised that they were along the road. Not all of these noted the linear pattern though. Other points, such as *in the east, by cultivation, on headlands, in valleys, on low land* or an estimate of the average spacing of the settlements, were given less frequently.

(c) Grid square 2284 was not suited to settlement. Candidates usually mentioned the steep, forested, upland area, making it difficult to build homes. Some also pointed out the lack of roads in the area, making for difficult accessibility. Others noted that the land was already taken up with plantation. Many candidates developed these points sufficiently well to gain all four marks.

(d) The section of coastline here lacked cliffs and beaches but bays and headlands could be identified. These, along with mangrove, were the most common correct answers. Marks were also available for *river mouth, oyster beds, forest, the offshore coral, scrub or scattered trees* and mention of the *steep slopes*. Some candidates wrote about human features but often included vegetation, which did score marks. A number of candidates said there was an embankment along the coast, possibly due to the way this is shown alongside the road symbol in the key.

(e) The bearing of the pier from Lion Mountain was 120°. Many candidates had answered correctly but some went for 240° due to measuring the bearing anticlockwise. The trigonometrical station on Lion Mountain was at 204819 or 205819, with the majority selecting the latter. A few candidates had reversed the two halves of the grid reference, putting 819205.

Question 2

(a) Fig. 2 showed a hypothetical representation of settlements. Almost all candidates understood the diagram and correctly noted that tier 1 had the most services and tier 5 had the most settlements. The error seen most frequently was for the most services in tier 2.

(b) All the settlements in Table 1 had a meeting place or village hall and a place of worship, as indicated by the ticks in the last two columns of the table. The different format of these two columns was perhaps the reason for the common error of "School".

Almost all candidates noted the hospital only in tier 2, and gave 4 as the number of general stores in settlement D.

Part (iv) and **part (v)** again highlighted the lack of understanding of the last two columns of the table, with some candidates stating that J only had one service. It was possible to make a correct statement without reference to the ticked columns. So for **part (iv)**, "it has a school" was a common answer. Others noted the greater population. However, "it has one service, while K has none" was obviously incorrect as was "it has one service, while those in tier 4 have more". "It does not have enough services" was too vague. Candidates who pointed out the lack of general store, doctors or clinic scored the mark in **part (v)**.

In **part (vi)**, settlements E and F, when arranged by population size, appear to be in the wrong order for number of schools. It could be argued that either of them disrupts the pattern and most candidates had selected one of these.

Question 3

(a) Many candidates noted the *black ash* in Photograph A, two descriptive points, scoring two marks. Relatively few developed the description any further but marks were also available for *steep, loose, heaps* and the *various sizes* of fragment.

In **part (ii)**, many candidates had made assumptions about the type of volcano. They then decided what they expected to see, which did not always coincide with what the photograph was actually showing. Those who examined the photograph noted the number of peaks on the cone, the steep slopes up to the crater, the ridges and the bare landscape.

The presence of buildings and vegetation, particularly the mature tree, indicated that the volcano had not erupted recently and the land was considered safe. Almost all candidates commented on the vegetation and/or the buildings seen in the photograph.

(b) The hotel would be expected to bring an increase in tourism, as well as new employment opportunities. Most candidates had answered correctly.

Building work may have ceased for a wide variety of reasons. A popular suggestion was some aspect of the danger of the location, with many mentioning toxic gases and the hazard of breathing in the ash. Others suggested that access roads would be blocked, or that power and water would be cut off, with the hotel partly buried. There were lots of good ideas here, which were credited if explained clearly.

Question 4

(a) In Fig. 3 and Photograph B, **X** was spit, **Y** was sand dunes and **Z** was marsh. Most candidates had **Y** and **Z** correct but for **X** many chose bay or bar, perhaps due to referring only to the photograph, whereas Fig. 3 clearly shows the channel through to the sea. Candidates needed to refer to both Fig. 3 and Photograph B.

In describing Feature **Z**, some candidates also included aspects of explanation. This usually restricted their description to the vegetation or grass and sometimes also the water channels within **Z**. Those who just described were more likely to mention the low and flat land.

There was only one mark for explanation in **part (iii)**. Candidates needed to refer to the low energy environment behind the spit, using terms such as *calm, sheltered* etc. Some candidates wrote that the sea had formed this feature by longshore drift and others assumed that the material had been blown from the dunes. There were, however, many good answers and these candidates often wanted to write detailed explanations far beyond the allocated two lines.

(b) The camera was pointing to the NE or, more accurately NNE. Most candidates answered this correctly.

Question 5

(a) The power station is on lower ground than the reservoir, so that the water flows down or falls into it, under gravity, providing the head of water for power generation. Most candidates appeared to know what was needed, but did not always express it very well. "*So that the water flows*" or "*so that the water goes along the intake*" both failed to give the idea of the downward movement required.

Fig. 4 implies that the site is in a hilly area, so the steep mountain slopes, surrounding a valley, would provide a good basin shape for water storage, and run-off would be rapid down the steep slopes, so more of the total rainfall would reach the reservoir. The mountains would also encourage relief rainfall which would ensure a good water supply. Many candidates wrote about how the shape of the land would promote good water storage, but not always in sufficient detail for two marks. The ideas of run-off and relief rainfall were used less frequently.

In **part (iii)**, a number of candidates were keen to consider the worst case scenario of the dam breaking but this was not valid as a disadvantage of the scheme. Many wrote about displacement of people, with flooding of homes and farmland and others suggested visual pollution.

(b) Most candidates completed Fig. 5 correctly. This was then used to answer **part (ii)**. There was a lot that could be mentioned here: high rainfall total, no dry season, always above freezing point and cool summer temperatures resulting in low evaporation rates. Many candidates easily scored the two marks.

Question 6

(a) Answers of 13% – 17% were accepted for average percentage of total spending used for food in MEDCs. Many candidates were within this range, but some simply stated the angle in degrees.

Candidates then had to complete Fig. 7B for LEDCs. The smaller segment (spending on other items) needed to be between 106° and 110°. Most candidates were accurate, though some had reversed the shading.

(b) Fig. 8 was a simple bar chart, which almost everyone completed correctly and subtraction of 9.8 from 25 gave 15.2 million tonnes decrease in the wheat harvest. Again most candidates answered correctly.

(c) Many candidates answered this at great length. The better answers used both Figs. 6 and 8. The best answers incorporated several different ideas. These included population growth, resulting in more land for housing so less farmland, growth in both total demand and demand for foods for certain diets, the fall in wheat harvest from Fig. 8, and the effect of unpredictable and uncontrollable hazards and problems as a result of adverse weather, crop disease, war etc. Most candidates scored at least two marks and many easily scored four, with answers showing good reasoning and appreciation of economics.

GEOGRAPHY

Paper 0460/03
Coursework

Key Messages

Centres taking the Coursework element in the November session this year had already had an introduction to the new requirements of the Syllabus in 2011. It was pleasing to note that virtually all issues relating to this change were ironed out last year, and the format of work, assessment procedure and administration submitted for this November, was fully in line with requirements. Centres are to be congratulated for negotiating this change amongst the many other demands on their time.

Selection of pieces of work from within the range available was sensible and representative, and completion of forms and other administrative tasks were well done. Moderators have noted that now that all Centres are using just the one mark scheme from the Syllabus document, may have helped in achieving a fairly uniform initial assessment from within Centres. Very few instances of mark adjustments by CIE Moderators were necessary. For some very small Centres with only one or two candidates entered, it is understandable that it is difficult to assess the correct standard when there are few or no opportunities to make comparisons. In such instances, CIE Moderators may need to make adjustments.

General Comments

Centres have been submitting future proposals to CIE at a fairly regular rate. The majority are straightforward ideas for fieldwork, not too surprising in content or techniques. This is perfectly sound as new groups of candidates usually find investigations into physical topics such as river and coastal work, different from what they have undertaken in class and exciting to carry out. Similarly, human studies like those of CBDs and urban structure, are often quite new to them, easily engaging their attention. However, this year a couple of Centres have submitted proposals new to this unit, although they have been given some attention in other Geography work. These have been concerned with assessing whether a town is a 'home' town, with a high proportion of independent retailers, or a 'clone' town with most outlets dominated by large national chains, or somewhere in between, a 'border' town. Any Centres that are looking for a change, and are interested in this issue, can find a useful starting point at;

http://www.geographypages.co.uk/clonetown.pdf
and examples of outcomes can be found at;
http://www.emsworth.biz/New%20Economics%20Foundation-cloned%20town%20survey.pdf and at;
http://www.reimagineyourhighstreet.org/wp-content/uploads/Clone_Town_Britain_Survey_II.pdf.

It is always worth reminding Centres in planning the coursework, that attention should be given to the last three assessment criteria, as that is where candidates who achieve high marks often score the extra few marks that help to distinguish them from the more average. Identifying a range of presentation techniques that can be used is always helpful to candidates. If some of these can go beyond straightforward pie and bar presentation techniques, it can help candidates enormously. Maps of all kinds are central to Geography and are to be encouraged. Many hypotheses look at relationships that change with distance. For these, scatter graphs with trend lines or lines of best fit, give candidates plenty to write about when they come to an analysis of their findings.

At the age range catered for by IGCSE, few youngsters are really aware of what they need to do for an Analysis. It is often the first the time that they have been asked to undertake such work. Some guidance on looking for patterns and relationships is quite appropriate. Relating these to the original hypotheses, and to any Geography theory that might lie behind them, is most helpful in this section. At this point, it is valuable to offer some suggestions as to why the findings, patterns and relationships should be as they are. Very often, some of the results are not as expected, or they may even run counter to what might be expected. Again, if suggestions to explain these anomalies can be put forward, they can help to achieve high marks in the analysis.

Conclusions can be improved if candidates can produce a brief summary of the findings, along with a reminder of the key pieces of evidence that point towards them. In evaluations, candidates sometimes just list things that were unfortunate whilst gathering information, for example that it rained, the wind blew away their recording sheet or that they did not have enough time. Improvements are often suggested as collecting more data or working harder. Many of these might have been anticipated by conducting a short pilot study.

Whilst some of the above approaches to evaluation may have some value, a good reflection could include suggestions for improvement that can only become evident through actually conducting the full data gathering and analysis process. An evaluation is an appropriate place to state what individuals or organisations might find the findings useful. Sometimes the results identify further questions that could be asked, and point the way to future research. All of these are highly creditworthy in an evaluation.

Many Centres are aware of shortcomings in the work of their candidates in these areas, as the assessment of them is usually sound, and the marks awarded are modest. It is hoped that these comments might help Centres that have noted weaknesses in their candidates' work in these areas. In most cases where Moderators have needed to make adjustments to the marks submitted by Centres, it is usually related to one or more of these last three criteria.

There are occasionally Centres that submit work on investigations that have not previously been submitted to CIE. In most instances, this does not present any major kind of difficulty as the Geography is sound, and the investigation related to it is feasible. Moderators have sometimes reported that some of the studies that have not been submitted for approval are not appropriate in that they are either too difficult, or unchallenging or unrealistic. CIE is not critical of proposals that might be inappropriate, but will offer sound and supportive suggestions as to how outlines may be improved to offer candidates a chance to obtain high marks. Any Centre that has undertaken work not previously submitted for approval is encouraged to do so.

If a Centre wishes to use the same study for a series of years, and this has already been approved and has given good results, there is no need to re-submit proposals each year. A brief notification to CIE that the same exercise will continue is quite sufficient. Similarly, if a study is substantially the same but the wording of a hypothesis has been changed slightly, or a marginally different emphasis is being put into the work, once again, re-submission is not required, but notification is helpful.

It should also be noted that if at any time a Centre would value advice on conducting work for the Coursework element, CIE is can offer support and advice in these areas. Some successful Centres have been willing to allow CIE to pass on good practice (both in examples of guidance given to candidates and of fieldwork assignments) and these can be seen on the CIE Teacher Support site and may be useful for centres to look at.

GEOGRAPHY

Paper 0460/41

Alternative to Coursework

Key Messages

Every examination is different but there are usually a few generic tips and key messages that bear reiterating in the hope of improving candidate performance in future. Some of these points have featured in previous reports but the same issues are reoccurring. The following are a few key messages that the Examiners feel will benefit future candidates if they are passed on by teachers:

- When answering hypothesis questions that ask whether you agree or not, always give your opinion first before any supporting evidence. This will usually be Yes, No or Partially / To some extent. If you are asked to support your decision with data then statistics must be used from the resources referred to. Data is quantitative; evidence can be qualitative or quantitative.
- When giving figures in an answers always give the units if they are not stated in the resources provided.
- Read questions carefully and identify the command word e.g. *Describe, Explain...*
- When asked to compare, make judgements e.g. *higher, lower*, rather than just list comparative statistics.
- Check you are using the resources that a question refers you to e.g. *Use evidence from Figs. 11 and 12 to support your conclusion.*
- Take into account the marks awarded for each question. Examiners do not expect candidates to write outside of the lines provided so do not write a paragraph when only two lines are given – this wastes time.
- If you have to write more than the lines allowed indicate this with a phrase such as (*continued on additional page*).
- When completing graph work use a dark-coloured pencil.
- When you think you have finished, check that you have not missed a question out. Some questions are located on pages with a lot of graphs or maps. Make sure you have answered the questions on every page. This applies especially to questions where you are asked to complete tables, diagrams, graphs or maps.

General Comments

Most candidates found this examination enabled them to demonstrate what they knew, understood and could do. Weaker candidates scoring on the practical questions, such as drawing and interpreting graphs and tables, and candidates of higher ability scoring well on the more challenging sections requiring explanation and judgement especially regarding hypotheses. Overall **Question 1** proved to be slightly easier than **Question 2**.

There is less general advice to be given for areas for improvement with this paper compared with others. As there are no choices to make, it is difficult to miss sections out, although some candidates omit graph completion questions which are usually 'easier' to answer. Although there were no significant reports of time issues some candidates do write too much in some sub-sections. They should be encouraged to answer more succinctly and perhaps give more thought to their answers. Most points for teachers to bear in mind, when preparing candidates for future Paper 41 questions relate to misunderstanding command words and familiarity with fieldwork techniques and equipment. Particular questions where candidates did not score well often related to them not carefully reading the question, for example **Question 2(c) (i)** where candidates had to suggest how the questionnaire could be used not how it could be created. There are often questions which require candidates to develop their own hypothesis or investigation methodology and these are an area which Centres should practise with candidates.

It is important to note that, although this is an Alternative to Coursework examination, candidates will still be expected to show that they know how fieldwork equipment is used and appropriate fieldwork techniques

even if they have only limited opportunity for fieldwork within the Centre. For example **Questions 1(b) (i), (ii)** and **(iii)** and **2(c) (i)** and **(ii)** focused on specific equipment and techniques, commonly used in fieldwork

Comments on Specific Questions

Question 1

(a) Most candidates seemed familiar with this type of question with its emphasis on safety when doing fieldwork. There was some evidence that candidates had 'learned' an answer about safety but they did not relate it to the specific fieldwork environment. Many candidates referred to depth and speed of the river, being aware of slippery rocks, and more generally working in groups. Candidates used terms like 'appropriate clothing' without saying how it would be appropriate. .

(b) (i) Many candidates were familiar with the methodology of measuring the depth of a river channel. However, to gain full marks detail was needed of the various steps which would be taken. Answers which merely referred to using a ruler to measure the depth gained few marks. To score high marks details such as measuring at regular distances across the river channel, resting the ruler on the river bed and reading the measurement level with the surface of the water should be included. A few candidates did not describe the appropriate technique but instead described how to measure the speed of flow.

(ii) Most candidates had either used a flowmeter or made use of the information in the Insert to suggest answers. More candidates suggested an advantage, usually that it was quicker or simpler to use and gave an accurate reading. Fewer candidates could suggest a disadvantage, usually that the equipment would be expensive.

(iii) As in the previous methodology question most candidates seemed to be familiar with the fieldwork technique. The best answers clearly described the three main stages of the experiment – measure the required stretch of river, put the float in the river, and time its journey along the measured stretch. The main omission was in not describing the idea of measuring a specific length of the river channel. Weaker candidates merely described how they would 'throw the float into the river and time it'.

(iv) Most candidates used the example given in the examination paper to correctly calculate the average velocity. The only significant error was the failure to include the unit of measurement (metres per second) in the answer.

(c) (i) Most candidates completed the cross-section accurately. The most common omission was not shading the area of river channel. A small number of candidates mistakenly shaded the area outside the river channel.

(ii) Again most candidates successfully completed both bar graphs. Only a small number of candidates failed to gain credit by plotting the height of the bars incorrectly.

(d) (i) Generally this task was well attempted by many candidates who showed good understanding of the two hypotheses. Many candidates used comparative statistics as evidence or made the comparison through words such as 'fastest'. Some candidates failed to gain credit because they referred only to the height of bars.

(ii) The question proved very difficult for most candidates who were required to refer to differences between a straight river section and a river meander. Some candidates referred to a higher velocity on the outside of the river where the water had to travel further. Other candidates referred to erosion and deposition which are the consequence of variations in velocity. A minority of candidates realised that velocity was dependent on depth and friction but few could explain this relationship clearly.

(iii) Most candidates recognised that the second set of results did not support the hypothesis and explained why by using the boys' results. Candidates were able to score credit by interpreting the results or using comparative statistics.

(e) As in the first section of the examination paper the final question required candidates to apply their general understanding of data collection to the specific fieldwork task. To score high marks candidates had to relate improvements to the data collection task undertaken, rather than describe what could have been done to ensure accuracy in the first place. Many candidates gave vague answers such as 'repeat the tests' and 'collect more data'. Such answers do not explain how reliability could be improved.

Question 2

(a) (i) Most candidates correctly identified two services from the map of the CBD. The main errors were in identifying a car park as a service and giving examples of shops.

(ii) Many candidates found this question difficult. Many answers explained that they were needed in the CBD without explaining why this location was important. Better answers referred to the large amount of potential customers in the CBD, but weaker answers merely said that there many people there.

(iii) Candidates suggested a variety of reason for unoccupied shops. The best answers explained that land was expensive due to competition and that subsequent rents would be high. Typical weaker answers explained that 'it was too expensive' which did not make it clear whether this was to set up shops or the price of products. Few candidates suggested that shops may re-locate or that customer numbers may fall.

(b) (i) Most candidates did not complete the classification accurately. There was evidence that candidates did not understand the distinction between high order comparison goods and low order convenience goods. A minority of candidates failed to make their results total 14.

(ii) Candidates showed better understanding of the terms than in the previous section, helped by the alternative answers provided. A common error which should have been avoided was by candidates who ticked more than two choices.

(iii) Using the stimulus of the map of the CBD many candidates were able to identify two shops which sold high or low order goods. More candidates gained a mark for identifying the high order good. Some candidates reversed the two shops showing confusion about the terms.

(iv) Most candidates realised that the hypothesis was true, but had difficulty in supporting their decision. The most common comparison was that between the total number of shops and services in the two shopping centres. Few candidates compared the types of shops to indicate a difference in variety as suggested by the hypothesis.

(c) (i) Candidates needed to realise that the questionnaire had already been created and was shown in the Insert. The question was not asking about how to create a questionnaire such as 'ask both closed and open questions'. Answers should have focused on using the questionnaire with people who were shopping. Therefore ideas such as politeness and clear explanation of the survey were the ones which gained credit.

(ii) Most candidates understood what a pilot survey was, possibly helped by the further description as a trial survey. Common suggestions were those of testing out the methodology and improving it, and getting practice at asking questions. Ideas that were not credited were that the results of a pilot survey with families could be added to the actual results or would provide a guide as to what to expect from the survey. These answers were not valid because they were done in a different context.

(d) (i) Most candidates plotted the pie graph accurately, although, as often happens with such questions, a significant minority plotted the two percentages in the wrong order, thus losing one mark.

(ii) Most candidates accurately plotted the two bars. Answers where the candidates drew the bar slightly inaccurately did not gain full credit.

(iii) This question was well answered by most candidates who recognised that the hypothesis was correct and supported by the evidence. The most popular evidence given referred to the range of shops available in the CBD, the ease or parking in the retail park and the different types of items purchased in the two centres.

(e) Many candidates found the extension task difficult. There is a tendency for candidates to continue to develop or repeat the original investigation. So many candidates referred to data which had already been collected about the shops or reasons for shopping, rather than suggesting how the investigation could be extended. Candidates would do better if they thought about a new investigation. The best suggestions related to investigating the different spheres of influence, methods of travel, and gender or social class of people shopping in the two centres.

GEOGRAPHY

Paper 0460/42
Alternative to Coursework

Key Messages

Every examination is different but there are usually a few generic tips and key messages that bear reiterating in the hope of improving candidate performance in future. Some of these points have featured in previous reports but the same issues are reoccurring. The following are a few key messages that the Examiners feel will benefit future candidates if they are passed on by teachers:

- When answering Hypothesis questions that ask whether you agree or not, always give your opinion first before any supporting evidence. This will usually be Yes, No or Partially / To some extent. If you are asked to support your decision with data then statistics must be used from the resources referred to. Data is quantitative; evidence can be qualitative or quantitative.
- When giving figures in an answers always give the units if they are not stated in the resources provided.
- Read questions carefully and identify the command word e.g. *Describe, Explain...*
- When asked to compare, make judgements e.g. *higher, lower*, rather than just list comparative statistics.
- Check you are using the Resources that a question refers you to e.g. *Support your answer with evidence from Figs. 7 and 8.*
- Take into account the marks awarded for each question. Examiners do not expect candidates to write outside of the lines provided so do not write a paragraph when only two lines are given – this wastes time.
- If you have to write more than the lines allowed indicate this with a phrase such as (*continued on page 2*).
- When completing graph work use a dark-coloured pencil.
- When you think you have finished, check that you have not missed a question out. Some questions are located on pages with a lot of graphs or maps. Make sure you have answered the questions on every page. This applies especially to questions where you are asked to complete tables, diagrams, graphs or maps.

General Comments

Most candidates found this examination enabled them to demonstrate what they knew, understood and could do. Weaker candidates scored on the practical questions, such as drawing graphs, diagram completions and those of higher ability scoring well on the more challenging sections requiring explanation, comparison and judgement especially regarding hypotheses. .

There is less general advice to be given for areas for improvement with this paper as with others. As there are no choices to make, it is difficult to miss sections out – though candidates do. There were no reports of time issues as the booklet format does not allow or encourage over-writing of sub-sections. Most points for teachers to consider, when preparing candidates for future Paper 42 questions, relate to misunderstanding or ignoring command words, the use of equipment in fieldwork and improving and extending the fieldwork activities demonstrated in the examination. Particular questions where candidates do not score well also often relate to them not fully reading the question or taking time to thoroughly understand the resources referred to. Such failings mean that some candidates do not obtain a mark in line with their geographical ability.

It is important to note that, although this is an Alternative to Coursework examination, candidates will still be expected to show that they know how fieldwork equipment is used and appropriate fieldwork techniques even if they have only limited opportunity for fieldwork within the Centre. **Question 1** required candidates to have experience of, or know how to use, a barometer and anemometer, to know the difference between primary and secondary data, and how to carry out a fieldwork investigation into temperature. **Question 2**

required candidates to have experience of, or know how to map, land-use in a commercial area, carry out a pedestrian and vehicle survey and record such using tally charts and isoline maps.

Comments on Specific Questions

Question 1

(a) Although it is true that many candidates find the study of weather and climate difficult, this was still a fairly basic question about the different characteristics of high and low atmospheric pressure conditions. Around half the candidates did this well but that was disappointing for a starter question; indeed 4% of candidates did not attempt it which, given there were only two choices for each type of pressure, was unfortunate. Many candidates indicated uncertainty by changing their answers.

(b) (i) The insert illustrated the barometer that was being used to measure atmospheric pressure but many candidates decided to write about a different barometer. Those that wrote about the one shown did not appear to understand that the index pointer was set to the previous pressure (not the highest or average pressure) that was recorded at an agreed time – usually the same time on the day before - then the atmospheric pressure pointer was free to move as pressure changed. This would allow the pressure difference to be calculated at the same comparable times on each day. References to reading the pressure shown by the pointer on the dial were seen but not as often as expected. Many candidates wrote about siting the barometer in a Stevenson Screen and were clearly not engaged with the barometer illustrated.

(ii) The answer of 1018 mb was given by the vast majority of candidates; incorrect answers included 1020 mb (frequent), 1030 mb and 1018.2 mb – decimal places were not required or possible to judge on the barometer shown. Some candidates took the reading from the index pointer.

(iii) Knowing the full meaning of abbreviated units is a basic requirement and has been mentioned in many previous reports. While the majority knew that mb stood for millibars, there was a broad range of incorrect answers to this question. Megabytes was the most common incorrect answer. This was a fairly straight forward question but 16% of candidates did not attempt it.

(iv) The key to taking the pressure reading at the same time each day was so that readings could be compared in a fair test and reliable judgements could be made. Some candidates took the 12 midday time as significant and explained that the temperature and pressure changed markedly at this time so that was why the readings were taken. What was required was an answer that explained why it was important to take these readings at the same time. Too many candidates referred to "*more accurate/accuracy*" which is rarely credited on this paper without some qualification.

(v) Candidates had some idea about how to use an anemometer though many wrote about where it would be sited rather than how it would be used. Most referred to the cups or cones being turned or spun or rotated by the wind (not the anemometer as a whole), and the reading could be read off the meter in km/hour.

(c) (i) The plotting was done well by almost all candidates; some found the 2nd plot at 7/1017 mb more difficult but overall most scored 2 marks. However 4% of candidates did not attempt this fairly straightforward plotting which is difficult to explain. Although candidates were not penalised, it was odd that some drew circular plots (as in the key for Jakarta) as they were for Manama, so they should have been crosses.

(ii) The overall trend of the plots in Fig. 3 showed a positive relationship although, as this was fairly generous, no relationship was also acceptable however there is no indication overall that this Hypothesis could be true – any best-fit line drawn on these points would not support a negative correlation between atmospheric pressure and wind speed. The majority of candidates recognised this and declared the hypothesis as incorrect or false. They then supported this by demonstrating that, at the same atmospheric pressure wind speed varied, or used figures to show that, as atmospheric pressure increased so did wind speed. There were a few candidates who correctly disagreed with the hypothesis and then provided evidence and data that would support it being correct. This was one of the more challenging questions on the paper but almost 1/3rd scored well on it.

(d) (i) This was correctly completed by almost all candidates though a number reversed the methods completely by putting Primary data types under Secondary and vice versa. A few decided to put their own descriptions in the table and not use those required so scored no marks.

(ii) Although a small number plotted the bars in reverse or did not attempt them at all, almost 90% scored well on the graph. A few plots were difficult to see once scanned; darker coloured pencils were needed!

(iii) This was a challenging question but half of the candidates scored well on it. The Hypothesis was clearly true and most candidates gave data from Manama and Jakarta to illustrate the different pressures at both places. Not all scored a 4th mark for recognising that the differences were greater in Manama than in Jakarta but nevertheless they still existed in every case. A few candidates made the mistake of comparing January and July pressures between Manama and Jakarta instead of within the same city as required. Because the Jakarta figures were close it was agreed to allow a maximum of 2 marks for candidates who judged that the hypothesis was partly/to some extent true based on this data.

(e) This question on possible weaknesses of the investigation were not answered particularly well. Suggestions relating to the short period of 10 days or the choice of just two months gained credit as did issues over taking just one pressure measurement, candidate errors at both schools and issues of being in different time-zones re. measuring and communication between schools. Taking climate data from a previous year for comparison seemed valid as physical characteristics are more likely to be consistent over time than human ones; equally using secondary data should be trusted. Many candidates thought it was not wise to trust secondary data collected by professionals at the local meteorological office which was not credited.

(f) Many candidates gave sensible ideas here. It was important to realise that it was just the one school that was going to extend their fieldwork so it was not relevant to suggest ideas that would involve both schools. Most suggested using a thermometer in a Stevenson Screen and fixing a time/period to measure the max. and min. temperatures. Many however did not state an investigation or hypothesis, in other words they did not seem to know what they would do with the figures once obtained. Some did try to develop an investigation relating temperature to pressure or wind speed.

Question 2

(a) (i) This was done well. Almost all candidates could use the key to recognise the Hardware and Professional services buildings. A few reversed their answers and a small number just gave examples of shops instead of types. A few just listed initials which was not accepted.

(ii) Many candidates realised that, by classifying the individual shops into groups, it would make their fieldwork a lot easier and quicker plus the fact that in practical terms, writing the name/type of every shop and service on a land-use map would be tiresome and produce a clutter with no discernible pattern. A few candidates strayed down the low and high order goods route and also thinking that the sphere of influence could be worked out – rather odd answers given the question.

(iii) Describing a location is a basic geographical skill which should include references to directions and/or distances using scales and other significant features. This question yielded disappointing answers such as *"they are all close together"* or "*in the central area*." "*Near to housing*" was popular but not credited as it is too general and vague given the amount of housing on the map. Examples of the best answers included "*east of the market"* or "*north-west of the cemetery*."

(iv) The location of the supermarket was easier to locate with most answers referring to its location east of/near to the main road or the bus/petrol station or east of the CBD. Vague answers like "*in the east of the map"* were not acceptable.

(v) Although many candidates wrote about avoiding competition, candidates needed to realise that the wholesale shops and general stores were likely to have been located in the central area before the supermarket so the only competition issue would be a reason for the supermarkets to be located away from the central area not the other way round. Answers that recognised the importance of low order goods/everyday goods needing to be close to housing while supermarkets needed more space for parking and to attract travellers on the main road were credited. This question was not done well.

(vi) The majority of candidates agreed with the hypothesis and then gave evidence for the proximity of the listed surrounding shops with especial reference to professional services and government offices being a function of the commercial Centre.

(b) (i) This question was not answered well; indeed it scored the lowest marks on **Question 2**. The key was to note that the two points in the question related to using two working days and the time slot of 9.30-9.40 am. Consequently answers expected were that it would avoid the rush hour which might give a false impression of the "normal" traffic flows'; many candidates thought this was the rush hour and was a good time to take the survey but they did not note the nature of the hypothesis. The 10-minute slot was regarded as enough for valid results and enough to retain concentration – but not to stop them getting tired! Two working days would give an average to compare the flows and would also be more typical of a working week than using a weekend day. The hypothesis and the question needed reading more carefully to gain credit here.

(ii) The tally chart was done well; almost all could draw the correct "sticks" and put 18 at the bottom of the table though a few did not put the figure in. A small number used the figure 36 – possibly because the stem said there were "18 bicycles and mopeds" and they misunderstood that as 36 in total – 18 of each!

(c) (i) Drawing isolines is a fairly basic technique to represent flows – rainfall and pressure isohyets and isobars are commonly used in weather and climate work at this level - yet only few candidates could interpolate the 100 pedestrians line outside the 102 plot and between the 110/93 plots and inside the 93 plot as required. This technique has been used on previous papers so the response was disappointing; many just joined the 100 line up or joined up the points. 4% of candidates did not attempt this task.

(ii) Despite 5% of candidates not attempting this question, the vast majority of those that did gained the mark by shading the area inside the 100 vehicles line.

(iii) This proved a challenging question. It was surprising how many candidates thought that, by separating out the vehicles into two groups, that they would know how many of each group there would be but that is already known from the survey table on Fig. 6 where the vehicles are separated into two groups. Some just thought that two maps would avoid the amalgamated map being cluttered despite Fig. 8 being an amalgamated map of all vehicles which is not cluttered. This question required some spatial awareness in that separating out the vehicles would allow one to see where they were in the area especially as mopeds and bikes can probably access areas that the larger 4-wheeled vehicles could not go. The maps could then influence policies in future e.g. where car parks or wider roads are needed.

(iv) While most candidates correctly agreed with the hypothesis, they did not provide the correct data to gain further credit. Many focused on the 300 pedestrian isoline location but the area that matched the pedestrian flows should have been the commercial Centre which was embraced mostly from the 150 isoline upwards; in a similar way vehicles ranged from 25-50 in the commercial Centre - a more common answer seen and credited. It needed a mental match of the commercial Centre with the pedestrians and vehicle flows to get this right.

(v) References to lack of car ownership or no need to own cars were credited regarding areas where pedestrian flows were high as were the nearness of housing to the CBD and market and the cost of petrol deterring people from using cars. The higher frequency along the main road between cities for commuting was credited as was any concentration near the supermarket or petrol station. Some candidates did make the point that there may be no access or parking space for cars in the Centre and that pedestrians could access anywhere without the need to worry about narrow roads or paths.

(d) The best answers focused on how this investigation could have been improved and gave suggestions such as surveying for more working days or including a weekend day for comparison. Increasing the number of sites was also credited and increasing groups to 3 or more was allowed. Some suggested taking the survey at a different time but could not suggest or justify when; those that gave ideas of times e.g. afternoon or evening or even in the rush hour for comparison were credited. Surveying for longer than 10 minutes was not allowed as it would not necessarily lead to more accurate data as suggested as this length of time had already been set to avoid lapses in concentration and was enough for valid results.

GEOGRAPHY

Paper 0460/43

Alternative to Coursework

Key Messages

Every examination is different but there are usually a few generic tips and key messages that bear reiterating in the hope of improving candidate performance in future. Some of these points have featured in previous reports but the same issues are reoccurring. The following are a few key messages that the Examiners feel will benefit future candidates if they are passed on by teachers:

- When answering Hypothesis questions that ask whether you agree or not, always give your opinion first before any supporting evidence. This will usually be Yes, No or Partially / To some extent. If you are asked to support your decision with data then statistics must be used from the resources referred to. Data is quantitative; evidence can be qualitative or quantitative.
- When giving figures in an answers always give the units if they are not stated in the resources provided.
- Read questions carefully and identify the command word e.g. *Describe, Explain...*
- When asked to compare, make judgements e.g. *higher, lower*, rather than just list comparative statistics.
- Check you are using the Resources that a question refers you to e.g. *Support your answer with evidence from Figs. 7 and 8.*
- Take into account the marks awarded for each question. Examiners do not expect candidates to write outside of the lines provided so do not write a paragraph when only two lines are given – this wastes time.
- If you have to write more than the lines allowed indicate this with a phrase such as (*continued on page 2*).
- When completing graph work use a dark-coloured pencil.
- When you think you have finished, check that you have not missed a question out. Some questions are located on pages with a lot of graphs or maps. Make sure you have answered the questions on every page. This applies especially to questions where you are asked to complete tables, diagrams, graphs or maps.

General Comments

Most candidates found this examination enabled them to demonstrate what they knew, understood and could do. The overall range of marks showed a similar range to previous years - with weaker candidates scoring on the practical questions, such as drawing and interpreting graphs and tables, and candidates of higher ability scoring well on the more challenging sections requiring explanation and judgement especially regarding hypotheses. Overall **Question 1** proved to be slightly easier than **Question 2**.

There is less general advice to be given for areas for improvement with this paper compared with others. As there are no choices to make, it is difficult to miss sections out, although some candidates omit graph completion questions which are usually 'easier' to answer. Although there were no reports of time issues some candidates do write too much in some sub-sections. They should be encouraged to answer more succinctly and perhaps give more thought to their answers. Most points for teachers to bear in mind, when preparing candidates for future Paper 43 questions relate to misunderstanding or ignoring command words and the use of appropriate fieldwork techniques. Particular questions where candidates did not score well often related to them not carefully reading the question, for example **Question 2(c) (iv)** where they had to support their answer with evidence rather than suggest reasons. Unlike some previous papers there were no questions which required candidates to develop their own hypothesis or investigation methodology. However, these questions are frequently included on this paper and are an area which Centres should practise with candidates. There were, however, two **Questions 1 (d)** and **2 (d)** which required candidates to use geographical theory which they had learned in class to explain the results of fieldwork.

It is important to note that, although this is an Alternative to Coursework examination, candidates will still be expected to show that they know how fieldwork equipment is used and appropriate fieldwork techniques even if they have only limited opportunity for fieldwork within the Centre. For example all parts of **Question 1(a), 2(b) (i)** and **2 (b) (ii)** focused on specific equipment and techniques, commonly used in fieldwork.

Comments on Specific Questions

Question 1

(a) (i) Many candidates showed understanding of where to position a rain gauge. The most common suggestions were to put the gauge in open space or away from the shelter of buildings or trees.

(ii) Whilst many candidates showed that they had seen or used a rain gauge at school many answers lacked detailed reference to the type of rain gauge shown in the Insert. The best answers described how the water level should be read in the measuring cylinder and then it should be emptied and additional water from the overflow cylinder should also be measured. Weaker answers did not recognise the need to check the rainfall amount at regular intervals, instead they said that the level should be checked 'after it rains'. Other candidates merely stated that the rain falls into and is measured in the rain gauge, which was too vague for credit. Some candidates referred to site factors again with repetition of ideas from the previous section.

(iii) Most candidates stated that the wind vane should be located away from obstructions so that the wind would not be blocked. Fewer candidates suggested that it should be placed on a rooftop or high on a building. A minority of candidates did not realise that that the location should be at the school and so suggested 'on the top of a hill' or 'halfway between the school and coastguard station'.

(iv) Many candidates were familiar with a wind vane but, as in the earlier question, some candidates missed out important details about how a wind vane works. Most candidates described how the arrow is turned by the wind, and some answers contained much detail about wind resistance of the arrow. Many candidates did not make it clear that the arrow turns to point to the direction which the wind is coming from. Some candidates did not refer to the letters which showed compass directions.

(b) (i) Most candidates correctly calculated the average daily rainfall in the table.

(ii) Most candidates correctly identified the different types of data. In a minority of cases the primary and secondary ideas were mixed up which resulted in two marks being lost.

(iii) Many candidates showed good understanding of the greater reliability of the secondary data from the coastguard station. The most common responses referred to data being collected on continuous days with no gaps as in the primary data, and collected at the same time each day. Other answers focused on the accuracy of equipment used and possible candidate error. A small number of candidates mistakenly wrote about the ideas which they had inserted in the table in the previous question.

(iv) Most candidates who plotted the data did so correctly. However, a significant number of candidates omitted this question.

(v) Many candidates used appropriate evidence to reject the hypothesis. They referred to the higher average rainfall at the coastguard station or differences in daily maximum rainfall amounts. Weaker candidates compared rainfall amounts on individual days or stated that there were more days with rainfall at the coastguard station, but these responses did not relate to the rainfall pattern.

(c) (i) Most candidates accurately drew the wind direction bar.

(ii) Many candidates also plotted an accurate rainfall bar. However, some candidates did not label the scale axes or drew the vertical axis to the same scale as the other graphs. Some candidates were careless in not plotting the bar accurately onto the vertical scale.

(iii) Most candidates correctly stated whether the hypothesis was proven or not. The better answers also supported these decisions with appropriate evidence from the two graphs.

(d) Many candidates found the task of explaining the variation in rainfall amounts difficult. Although candidates realised that the school and coastguard station were in different locations they could not relate this information to rainfall. The best candidates recognised the importance of wind direction and the rainshadow effect. They could then relate this information to the hypothesis they had just studied. Weaker answers stated only that the school was further inland than the coastguard station or that the coastguard station was by the sea and so it received more rain.

Question 2

(a) (i) This question resulted in variable responses. Many candidates included sensible suggestions to ask or survey the customers or the shop owner. Another good suggestion was to look at what was on sale in the shop as a guide to the type of customers. Other candidates gave vague suggestions such as 'look at the people' or 'survey people' which would not produce the required information.

(ii) Most candidates understood what a pilot survey was, possibly helped by the further description as a trial survey given in the question. Common suggestions were those of testing out the methodology and improving it, and getting practice at asking questions. Ideas which were not credited were that the results of a pilot survey near the school could be added to the actual results or would provide a guide as to what to expect from the survey. These answers were not valid because they were done in a different context.

(iii) Most candidates accurately completed the bar graph. Common errors were to reverse the two sections or shade them incorrectly.

(iv) Many candidates used the formula given to make the correct calculation. The most common error was to insert the wrong figure of the number of shops used by local people rather than the number used by tourists.

(v) Most candidates correctly completed the rank order. Some weaker candidates merely continued the sequence of decreasing numbers from 5 to 1.

(b) (i) Most candidates correctly calculated the total. Only a small minority divided this total by 7 to get an incorrect answer of 2.

(ii) Many candidates recognised that an environmental quality survey would be subjective and prone to bias. Another common suggestion was that the survey may be a false score because it was only done at one time and the score could be different if the survey was done at a different time, giving examples such as the street may just have been cleaned or traffic amounts would vary. Ideas that there were too few categories or scoring divisions were not allowed as these are not weaknesses of this type of survey.

(iii) Candidate who answered this question usually plotted site 4 accurately, but many plotted site 7 too high on the horizontal percentage scale. As in the previous graph plotting question a significant number of candidates omitted the question.

(iv) Many candidates plotted the best-fit line accurately. An error made by some candidates was to draw the line from the point of origin. A small number of candidates did not understand the idea of best-fit and so joined the plots together with a continuous line.

(v) Many candidates described the positive relationship shown by the graph as being evidence to reject the hypothesis. Incorrect responses referred to tourists rather than the number of shops used by them, or just referred to one plot which did not recognise the overall relationship.

(vi) Many candidates referred to ideas such as the shop owners or local council would want to attract tourists by keeping the area clean, or that tourists would not go to an area which was dirty. Two common misconceptions were that local people would not care about their environment and that tourists came from clean cities and so would keep the area which they were visiting clean.

(c) (i) This question revealed a clear distinction between candidates who understood sampling techniques and those who did not. Correct answers mentioned every 5^{th} or 10^{th} or n^{th} person but incorrect answers confused systematic and random sampling.

(ii) Most candidates plotted the information correctly in the pie graph, although, as often happens with such questions, a significant minority plotted the two figures in the wrong order, thus losing the mark. Some candidates were too inaccurate in positioning the dividing line between the segments.

(iii) Almost all candidates completed the task of using a tally chart correctly.

(iv) The question proved to be a good discriminator. Most candidates supported the hypothesis and the better candidates used supporting data well. They recognised that there was a majority of 'yes' answers at 8 of the 10 sites and identified the two sites which did not follow the trend. They also identified the two sites which had 100% support for the hypothesis. Most evidence was taken from the map (Fig. 11), although some candidates did use supporting data from the table (Fig. 12). Weaker candidates suggested reasons to support the hypothesis rather than evidence.

(d) Although some candidates found explanation quite difficult, many answers included good suggestions about job creation and the benefit of increased or regular incomes which people could use to buy goods or pay for services. Weaker candidates did not specify the types of jobs or what could be acquired to raise the standard of living.