

GEOGRAPHY

Paper 0460/11
Paper 11

Key messages

In order to perform well on this paper candidates should:

- Follow the examination rubric correctly, answering three questions, one from each section.
- Choose the three questions with care. Read them all through and study the resources provided with each one before making a choice.
- Attempt all parts of the chosen questions and make sure that sub-sections are not missed out.
- Read questions with care, underlining command words and words which indicate the context of the question.
- Have the correct equipment for the examination, including a ruler, a sharp pencil and a calculator.
- Know how to respond to command words used in questions – for example, ‘describe’; ‘identify’; ‘explain’.
- Identify the correct focus specified in the question stem – e.g. causes or impacts; problems or benefits.
- Learn the meanings of geographical words and phrases in order to define and accurately use geographical words and phrases. When defining terms candidates should not repeat a word or words as part of their definition but use alternative wording to show their knowledge.
- Consider the mark allocations and answer space provided in the question and answer booklet in order to write answers which contain the appropriate detail and number of points. Answers which are of excessive length waste time, those which are too brief are unlikely to gain much credit.
- Write as precisely as possible in order to avoid making vague or general statements.
- Give full answers wherever possible, especially in the final two parts of each question, developing ideas as appropriate to the question rather than just including general information about the topic being tested.
- Be confident in using graphs, data tables, photographs, written text, diagrams and maps of various types. Graph and map completion tasks should be carried out with care using a ruler and sharp pencil if appropriate.
- Refer to source materials used in the resources to support ideas rather than directly lifting material from them without any interpretation, making sure that evidence from data is given where required to support an answer.
- Make good use of the information provided, such as the compass, scale and key on maps.
- Practise the skill of describing the features or characteristics from a photograph.
- Base their answer only on the information in a given figure if the rubric of a question instructs them to do so, for example by the use of the command ‘identify from Fig. X’. Answers that do not relate to that resource should not be included as they will not gain credit.
- Learn a case study (at the correct scale) for each topic so that appropriate ones can be chosen for each question attempted. The syllabus indicates the scale required for each case study.
- Include place specific information in answers to case study questions, however avoid writing a long introduction (e.g. to provide locational information) at the expense of answering it in detail.
- Use comparative language and phrases where a question requires a candidate to compare or identify differences.
- Have a clear knowledge of physical processes and be able to explain a process, using labelled diagram(s), geographical terms and clearly sequenced ideas.
- If there is not enough answer space continue answers on the continuation pages at the end of the booklet rather than on extra sheets of paper. When using the extra pages at the back of the question and answer booklet indicate that the answer is continued and clearly show the number of the question on the extra page.

General comments

The examination was considered appropriate for the age and ability range of candidates and it differentiated well between candidates of all ability levels. Most but not all candidates followed the rubric by selecting a question from each section as required. Occasional rubric errors were still seen, typically where two questions were selected from within one section. A few candidates attempted to answer all questions, usually these were very weak responses.

Questions 1, 4 and 5 were the most popular questions, though choice of questions was much more balanced in **Sections B and C** than it was in **Section A**. There were good answers seen to all questions, including those requiring extended writing such as the case studies. High quality answers in these case studies included developed ideas, with place specific information whilst weaker responses tended to be generic developments of ideas with little place detail to support them. Other weak responses were characterized by the use of simple, brief statements and/or the inclusion of information which was not relevant to the question, for example long introductions which simply set the scene rather than answering the question.

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

Comments on specific questions

Question 1

This was generally much more popular than **Question 2** with more candidates attempting this question.

- (a) (i) The vast majority of candidates correctly chose the right answer here.
- (ii) Most candidates answered this correctly. Those who gave the correct answer usually also showed the correct calculation to reach that answer.
- (iii) This question differentiated well. Most candidates were able to suggest reasons for positive net migration, particularly work, health care and education. Some candidates however failed to gain credit for more vague ideas such as more resources or opportunities or a better economy which were not clear enough for credit.
- (iv) This question was well answered and candidates gave a whole range of answers focussing on the difficulties faced by international immigrants. There were however four marks available here and candidates need to ensure that they describe four different difficulties to gain full marks here.
- (b) (i) This question differentiated well and stronger responses considered the overall changes seen in the graph together and compared the two countries clearly with accurate statistics with units to support their answer. Weaker responses did not describe the overall changes in the graph and also did not link this clearly to supporting statistics. Some did not compare the two countries clearly and also failed to use units (billions) in their answer.
- (ii) This question was well answered. Weaker responses usually gained credit for ideas such as lack of access to or ability to afford contraception. Stronger responses were able to explain a number of different reasons and often developed their ideas fully.
- (c) This was a straightforward case study and differentiated well. The strongest responses selected appropriate case studies such as Mexico to USA or Venezuela to Colombia and clearly described both the positive and negative impacts on the destination country. Some candidates need to avoid the use of an overall introduction providing context and instead need to concentrate on answering the question set, supported by relevant place specific detail. Weaker responses also need to develop their answers more fully, for example the negative impact of migrant workers sending much of their earnings home can be developed further to describe the negative impact on the US economy.

Question 2

This question was less popular than **Question 1**.

- (a) (i) The vast majority of candidates correctly chose the right answer here.
- (ii) Few candidates gained both marks here, instead just gaining one mark for the idea of the small size of the settlement or the idea of farmland or an agricultural settlement. Few candidates considered the location of the settlement on the higher land, or that it is a dispersed settlement.
- (iii) This question was not well answered, with most candidates failing to develop their answer beyond the idea that there would be few services. Candidates needed to consider the fact that they would be low order services or to consider the type of services that might be provided.
- (iv) This question was not well answered. Some candidates drew a very simple diagram but did not annotate it fully enough to gain credit. Few fully considered the link between settlement size and number or type of services.
- (b) (i) Most candidates gained at least one mark here and considered features such as the fact that it is surrounded by farmland or mountains or is a nucleated settlement. Few candidates described the houses shown in the photograph. Candidates needed to consider three different features to gain full marks here.
- (ii) This question discriminated well. Stronger responses developed ideas such as the advantages of being close to the main road or a water source, or the ease of building on flat land. Candidates need to reflect upon the features which are clearly shown in the photograph rather than making vague references to for example tourism, or the benefits of living in a quiet location.
- (c) This question discriminated well. Most responses considered migration rather than natural population growth, although both ideas would be valid here depending on the settlement chosen. Stronger responses focused in particular on pull factors, often using case studies of South American cities. Push factors and the decline in the size of a settlement would also be a valid approach to this question. Candidates need to ensure they use named areas of the settlement or accurate statistics to gain credit for place specific detail.

Question 3

This question was less popular than **Question 4**.

- (a) (i) Most candidates correctly identified diagram B here.
- (ii) Many candidates correctly identified diagram A, but some were unable to give a correct reason.
- (iii) Stronger responses gave a very full explanation which explained the different types of erosion or suggested that vertical erosion would be found near the source and lateral erosion near the mouth of the river, with erosion on the outside of meanders.
- (iv) This question was not well answered with few candidates gaining full credit here. Many candidates correctly explained that deposition is due to slow flow, but few developed their answers to consider other factors such as the amount of load carried or where the deposition would take place.
- (b) (i) Many candidates correctly identified the benefits of living near a river using the photographs, particularly the ideas of agriculture, fishing and transport. Frequently seen answers which did not gain credit were simple ideas such as availability of jobs or food.
- (ii) Many candidates understood the question and described the hazards well, particularly hazards due to flooding. Weaker responses only considered one or two simple ideas and so did not consider enough different hazards or several hazards in sufficient detail to access full marks. Ideas such as contaminated water or water pollution need to be developed more fully to consider the impact on people to gain credit here.

- (c) Stronger responses developed good answers here, however many candidates showed little understanding of how a delta is formed beyond the idea of slow flowing water and deposition. Weaker responses showed little understanding of the formation of new land, distributaries and colonisation of the land. Many candidates drew a very simple diagram of a delta but failed to annotate the diagram to explain how the delta formed and so did not gain any credit.

Question 4

This was a popular question and was answered by a significant number of candidates.

- (a) (i) Many candidates used the diagram to state the maximum height of emergents, however candidates need to use the diagram to give an accurate figure, as many incorrectly stated 60 or 70 metres.
- (ii) The majority of candidates used the diagram to correctly identify two examples of wildlife.
- (iii) Many candidates were able to give correct reasons such as the ability to climb or fly, or the availability of food. Fewer candidates considered the protection offered by their chosen habitats or the idea of nesting areas. Candidates needed to state three distinct ideas to gain full marks here.
- (iv) Responses to this question were mixed. Whilst there were some good answers explaining why the equatorial climate is hot and wet, most candidates only considered the temperature and so just gained credit for ideas such as being on the equator and the overhead sun.
- (b) (i) Many candidates considered three aspects of the distribution shown on the map, such as mainly in Brazil, South of the equator and close to roads and so gained full credit here, however weaker responses only described one or two features and so did not gain full marks.
- (ii) Stronger responses either gave five distinct reasons for deforestation or considered fewer reasons but developed their answers well for full marks.
- (c) This question discriminated well with some excellent answers based on detailed local case studies which considered the impacts on both the local people and the local natural environment. However some candidates did not read the question carefully and so detailed global impacts such as global warming rather than considering the local impacts. Some candidates considered either the local people or the local natural environment rather than considering both. Case study detail such as the names of local tribes was needed to achieve full marks here.

Question 5

This was a slightly more popular question than **Question 6**.

- (a) (i) Most candidates correctly named an example of a worker although some candidates incorrectly named a workplace rather than an example of a job.
- (ii) Most candidates correctly completed the pie graph for full marks, although some candidates did not use the correct order of segments, primary then secondary then tertiary as shown in the first two pie graphs.
- (iii) This question differentiated well. Stronger responses were able to clearly compare the employment structures of the two countries. However some candidates did not draw clear comparisons, often stating accurate statistics but failing to describe the differences clearly in words.
- (iv) Whilst many candidates gained one or two marks here for simply considering the impact of mechanisation or growth of secondary and tertiary sectors, most candidates did not develop their answers beyond these ideas. Good answers considered the exhaustion of resources, the improved skills of the workforce and the importation of food or raw materials.
- (b) (i) This question was well understood and the majority of candidates gained full marks here. The use of statistics with the words 'only' or 'just' did not gain credit as a clear justification was required, using words such as 'worst' or 'lowest'.

- (ii) This question discriminated well. Stronger responses were able to clearly explain the relationship between GDP per person and life expectancy giving a number of valid reasons with clear reference to MEDCs and/or LEDCs. Weaker responses simply considered varying healthcare and need to develop answers such as 'better healthcare' more fully, for example suggesting there are better qualified doctors or more access to or better investment in health care.
- (c) This question discriminated well. Some excellent responses considered examples such as Iceland or Costa Rica and showed good place specific detail and the awareness of a number of different factors such as environmental, economic and political reasons for the energy mix in their chosen country. At times however little place detail was seen and weaker responses stated simple ideas such as environmental issues and failed to develop their answer beyond this idea.

Question 6

This question was less popular than **Question 5**.

- (a) (i) Most candidates answered this well and gave a clear definition of a commercial farm.
- (ii) Most candidates answered this well, identifying both crops and animals in the photographs.
- (iii) Most candidates answered this well. The most common error was listing wheat as an input and water as an output.
- (iv) Candidates needed to look carefully at the photographs to answer the question and identify two distinct factors.
- (b) (i) Responses to this question were mixed. Stronger responses clearly compared the changes shown in the graph with accurate statistics, however weaker responses often gained credit for simply identifying that production increased more quickly than area harvested but failed to support this with accurate statistics with units, or to note other trends in the graph.
- (ii) A variety of answers was seen with candidates suggesting a number of ways in which farmers were able to increase production. Stronger answers identified five distinct methods to achieve full marks or developed their ideas, for example the use of pesticides will reduce the loss of crop to insects and so increase yield.
- (c) Some excellent responses to this question were seen using relevant case studies such as Sudan and exploring a number of causes of food shortage including the impacts of war and drought. Weaker responses tended to lack place specific detail and also repeated the same causal factor a number of times rather than exploring other ideas in their answer.

GEOGRAPHY

Paper 0460/12
Paper 12

Key messages

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- Have a clear knowledge of physical processes and be able to explain a process, using labelled diagram(s), geographical terms and clearly sequenced ideas.
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General comments

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

Comments on specific questions

Question 1

This was far more popular than **Question 2** with the vast majority of candidates attempting this question.

- (a) (i) Most candidates gave well-worded definitions. A few candidates misinterpreted the question and wrote about amounts of migration or just defined one type of migration.
- (ii) Most candidates correctly identified examples from the diagram. Others ignored the instruction to use Fig. 1.1 and named other places.
- (iii) Most candidates identified appropriate reasons from Fig. 1.1. Only occasionally did candidates wrongly suggest other reasons for migration, for example to raise their standard of living.
- (iv) Generally candidates scored well, many gaining full marks. Many suggestions from the mark scheme were included in answers. Some weaker answers suggested general problems of living in cities, such as crime, or referred to simplistic ideas such as getting used to the weather or getting lost.
- (b) (i) Many candidates scored full marks. Some incorrectly identified apartments as an amenity or referred to villages in Bolivia.
- (ii) There were some excellent answers which included a variety of ideas suggested in the mark scheme. Many candidates focused on negative aspects resulting from the loss of skilled workers or family breakdown. Others just referred positively to remittances or incomes from the football leagues as stated in Fig. 1.2. There was generally little focus on other positive aspects such as reduced pressure on employment, food and water etc. Weaker responses tended to write general answers around the ideas of 'lack of people' or 'it affects resources'. A minority of candidates misinterpreted the question and focused on possible problems of immigration to the USA or answered as if the migrants were going to the villages and causing problems there.
- (c) There was a variety of case studies, with Nigeria, Niger, Bangladesh, Kenya, Zimbabwe and The Gambia being popular choices. There were some high quality responses covering a range of ideas to explain high birth rates, reducing death rates or both. However many answers were limited by ideas being stated as single points with little attempt at linking or developing them and most candidates focused on high birth rate rather than lower death rate. The most common limitations were to focus on migration or government policies or to select countries which did not have a high natural population growth rate e.g. USA.

Question 2

Only a very small number of candidates answered this question and it was far less popular than **Question 1**.

- (a) (i) Many but not all candidates identified the correct photograph.
- (ii) Most candidates identified the stock exchange as having the largest sphere of influence, however the other two services were reversed in order by many.
- (iii) Answers varied in quality with many candidates showing little understanding of the link between services and settlement type. Some candidates did not even mention types of settlement.
- (iv) The general lack of understanding shown about services continued in this question. Many candidates referred incorrectly to lack of transport. There was little recognition of the reasons why low order services, to which people only travel a short distance, have small spheres of influence.
- (b) (i) Whilst some candidates were able to state the relationship in simple terms they did not use examples to illustrate it and very few referred to the obvious anomalies. Many candidates did not recognise or describe the relationship and did not refer to population size and the number of services provided when referring to examples of different types of settlement.
- (ii) The most common correct answer was that more people results in more demand. The other ideas in the mark scheme were only seen infrequently.
- (c) Many answers to this were relatively weak and there were a significant number of omissions. Many offered a variety of problems rather than focussing on a problem as required by the question. Whilst the problems were sometimes described in detail in over long introductions the causes of the chosen problem were often ignored and solutions were at best simply stated. The strongest responses were from candidates who focused on traffic congestion in London or another large cities, with a variety of solutions suggested. However, these answers were only a small minority.

Question 3

This was a slightly less popular question than **Question 4**.

- (a) (i) Most candidates correctly chose barometer but anemometer was a popular distractor.
- (ii) Most candidates scored at least one mark, the advantages of being 'accurate' and 'easy to read' were the most common responses.
- (iii) Many candidates gave good descriptions about the features of the Stevenson Screen, although many answers went on to give explanations which were not required. Some candidates suggested ideas about location which were not relevant to this section and then went on to repeat them in **part (iv)**.
- (iv) Many candidates suggested ideas from the mark scheme and gave appropriate explanations, reference to the type of ground surface, the presence/absence of a variation of obstructions and security being the most common answers. Putting it on level or flat ground was a common irrelevant response. Some candidates used the same explanation twice to explain why a Stevenson Screen should be sited 'away from trees' and 'away from buildings'.
- (b) (i) Many candidates correctly named the sunshine recorder but the remainder of their answer was incorrect because they wrote about how the machine works rather than how it is used.
- (ii) Whilst there were some excellent responses most were relatively weak and the question was not answered well. Some candidates showed knowledge of cloud types but did not answer the question about how the candidate could observe and record. The better answers referred to oktas and different levels of cloud, but ways to estimate cloud cover or record results were usually missing from the answers.
- (c) Popular case study examples were coastal areas affected by Hurricane Katrina and the more recent cyclone Idai in Mozambique. Other examples included Haiti and Mauritius. Well prepared candidates gave a variety of ideas, developing them, however many gave brief lists of general

points with few, if any, specific details of their named example. Where figures of deaths, casualties, buildings destroyed etc. were given they were often inaccurate.

Question 4

This question was chosen by many candidates.

- (a) (i) Although most candidates correctly chose the statement referring to the confluence, the ones about the source and tributary were popular distractors.
- (ii) Many candidates correctly suggested the impacts of the tributaries joining and the fact that Cape Girardeau is downstream (or near the mouth) as reasons for flooding, but some candidates thought it was simply because the flow of water was that way. Common vague suggestions referred to a location close to the Mississippi or the fact that Fig. 4.1 indicated major flooding there.
- (iii) Many candidates were successful in giving three likely impacts of flooding in rural areas.
- (iv) This question discriminated well with perceptive responses suggesting a variety of valid ideas whilst weaker responses tended to focus on one only, sometimes in vague terms with wording such as 'build a wall' or unlikely scenarios, such as 'redirect the river'.
- (b) (i) A common limitation of responses to this question was not addressing the question correctly due to not describing precisely what they saw on the map. There were many references to it being an oxbow lake but they were told that in the question. The tributary stream was included in many answers, as was distance from the Mississippi but such statements were not describing the lake. Candidates used various descriptions to say it was curved, the most common correct answer. Few candidates used the scale accurately to describe its width or length or mentioned the north-south orientation.
- (ii) The question discriminated well. Some candidates scored full marks with excellent descriptions in the correct sequence of the processes involved. The diagrams varied greatly in quality and accuracy but the better responses annotated them well. The most common misconception was that the lake is formed by deposition rather than erosion and deposition. This was often linked to confusion about which bank was eroded and which was affected by deposition.
- (c) Common examples included the Ganges, Nile, Zambezi and Mississippi though a range of other examples were used including ones local to the candidates. Where possible the use of local examples in case studies is very effective as candidates are more easily able to learn them and refer to them with place detail in their answers. As usual weaker responses gave many descriptive points but failed to develop any of them in sufficient detail to score at level two. Farming, water supply, transport, tourism and fishing were common benefits which were suggested, stronger responses being able to develop these ideas, with relatively few adding place detail. A common error was to also refer to the difficulties of living by the river, which in this question was not relevant, wasting time and possibly preventing them from adding more detail about the benefits.

Question 5

This question was chosen by many candidates.

- (a) (i) The stronger responses successfully referred to employment sectors or how the population is divided up according to the type of work people do however common errors were to refer to the total number in workforce, types of jobs or change in the workforce over time.
- (ii) Whilst many candidates scored two marks the most common error was not to name a job in the service sector but to identify a type of industry.
- (iii) Most candidates correctly identified the trends shown on the graph referring to increases or decreases as appropriate. One common misinterpretation made by some candidates was to include mining (which was not one of the main changes) rather than agriculture or just rely on statistics rather than describing the changes.
- (iv) Many candidates found this question challenging and few showed good understanding of why employment structure changes over time. The most common correct suggestions referred to

machinery or technology and improved education/skills. Stronger responses who had rehearsed this type of question also referred to imports of agricultural products and manufactured goods, along with raw material exhaustion. A common irrelevant answer was that services are more attractive because they are better paid and/or have more comfortable working conditions.

- (b) (i) Many candidates had difficulty in describing the distribution though most gained some credit by referring to Africa and/or the idea of between the tropics. The use of words like 'above' and 'below' are not acceptable when compass directions can be used.
- (ii) This was a good discriminator. Many candidates could explain the effects of poor water supply but only the more able related this to development. For example dehydration or water-borne disease was often stated but not how this could affect the workforce or its productivity.
- (c) Zimbabwe, China, Iceland and Germany were popular examples. Many candidates did not go beyond describing or identifying different energy sources and a common mistake was to explain how the sources of energy are produced or used rather than explaining their importance. The most successful ways to do this included reference to renewable and non-polluting sources or to those sources which were important because of the availability of a sizeable resource or conditions suitable for generation of a specific type of energy, such as HEP or geothermal power. Place detail was added by better prepared responses, typically by referring to places where the energy type was available, such as the Kariba Dam or the Three Gorges Dam.

Question 6

This question was answered by a significant number of candidates but was less popular than **Question 5**.

- (a) (i) Many answers were acceptable because they included reference to an area becoming a desert or too arid. Some just referred to random ideas from Fig. 6.1 without defining desertification or just described the characteristics of deserts.
- (ii) Most candidates used the information in Fig. 6.1 as instructed to show a good understanding and gain credit. Some candidates did not gain credit because they only gave their own ideas about how climate change and population growth can cause desertification.
- (iii) The question discriminated well. Better responses used the ideas in the mark scheme with appropriate explanations especially afforestation, limiting the size of herds or rotating land used for grazing and crops. Weaker responses focused incorrectly on irrigation, fertilisers or planting crops. Other weaker responses simply put the words 'do not' in front of ideas listed from Fig. 6.1, such as 'overgraze' or 'cut trees' which did not gain credit.
- (b) (i) Many candidates introduced ideas of their own rather than 'using Fig. 6.2 only' as instructed, in so doing answering **part (ii)** in this section. Some missed out the crucial ideas of '**more** greenhouse gases/heat trapped' or '**less** heat escapes'.
- (ii) This question discriminated well. Where candidates explained why greenhouse gases were building up by reference to their sources they scored well. However, a significant number gave ideas which they should have used in **part (i)** about the build-up of gases and how this causing the greenhouse effect. As usual with this topic there was some confusion with depletion of ozone and global warming.
- (c) Most candidates identified and described appropriate problems, some of which were well developed with relevant ideas being linked. The most common ideas referred to melting ice, rising sea levels and coastal flooding. The effects on wildlife, particularly polar bears, was emphasised, as well as drought. Some candidates focused on higher temperatures but the problems which this caused were not always effectively developed and as in **(ii)** above the problems caused by ozone depletion were included by some candidates. Many candidates mentioned specific areas including the Arctic and Antarctic, and islands such as the Maldives. A significant number of candidates referred to the Amazon and the causes of problems occurring there (e.g. deforestation) along with the local effects of such actions, which was not the focus of the question.

GEOGRAPHY

Paper 0460/13
Paper 13

Key messages

In order to perform well on this paper, candidates are advised to:

- Follow the examination rubric correctly by answering three questions, one from each section.
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- Attempt all parts of the chosen questions and make sure that sub-sections are not missed out.
- Read questions with care, underlining command words and words which indicate the context of the question.
- Have the correct equipment for the examination, including a ruler, a sharp pencil and a calculator.
- Know how to respond to command words used in questions – for example, ‘describe’; ‘identify’; ‘explain’.
- Identify the correct focus specified in the question stem – e.g. causes or impacts; problems or benefits.
- Learn the meanings of geographical words and phrases in order to define and accurately use geographical words and phrases. When defining terms, candidates should not repeat a word or words as part of their definition, but use alternative wording to show their knowledge.
- Consider the mark allocations and answer space provided in the question and answer booklet in order to write answers which contain the appropriate detail and number of points. Answers which are of excessive length can take up too much time, and those which are too brief are unlikely to gain much credit.
- Write as precisely as possible in order to avoid making vague or general statements.
- Give full answers wherever possible, especially in the final two parts of each question, developing ideas as appropriate to the question rather than just including general information about the topic being tested.
- Be confident in using graphs, data tables, photographs, written text, diagrams and maps of various types. Graph and map completion tasks should be carried out with care using a ruler and sharp pencil if appropriate.
- Refer to source materials used in the resources to support ideas rather than directly lifting material from them without any interpretation, making sure that evidence from data is given where required to support an answer.
- Make good use of the information provided, such as the compass, scale and key on maps.
- Practise the skill of describing the features or characteristics from a photograph.
- Base their answer only on the information in a given figure if the rubric of a question instructs them to do so, for example by the use of the command ‘identify from Fig. X’. Answers that do not relate to that resource should not be included as they will not gain credit.
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General comments

The examination was considered appropriate for the age and ability range of candidates and it differentiated well between candidates of all ability levels. Many candidates performed well across the paper and a number of excellent scripts were seen, whilst others seemed to have had difficulty to interpret questions. All candidates seemed to have sufficient time to complete the paper, however the final parts of questions requiring extended answers were sometimes not attempted and/or missed appropriate detail.

Most candidates followed the rubric by selecting a question from each section as required. Occasional rubric errors were still seen, typically where two questions were selected from within one section. A few candidates attempted to answer all questions.

Questions 1, 3 and 6 were the most popular questions, though choice of questions was much more balanced in **Sections B and C** than it was in **Section A**. There were good answers seen to all questions, including those requiring extended writing such as the case studies. High quality answers in these case studies included developed ideas with place specific information, whilst weaker responses tended to be generic developments of ideas with little place detail to support them. Other weaker responses were characterised by the use of simple, brief statements and/or the inclusion of information which was not relevant to the question, for example long introductions which simply set the scene rather than answering the question.

Comments on specific questions

Question 1

This was generally more popular than **Question 2** with more candidates attempting this question.

- (a) (i) This question was well answered. Some candidates did not seem to consider that death rate is per 1000 and also per year.
- (ii) The majority of candidates correctly identified the two correct answers. Some candidates only ticked one answer.
- (iii) This question differentiated well. Most candidates appeared to know the formula, although some divided or multiplied deaths and births rather than subtracting one from the other. Some candidates showed the right calculation but did not state that the answer was per thousand.
- (iv) This question was well answered and candidates gave a whole range of answers, focussing particularly on the reasons for declining birth rates. Fewer candidates considered reasons for declining death rates.
- (b) (i) This question was well answered with many candidates describing clearly the overall population structure changes seen in the young dependent, economically active and old dependent populations. Weaker responses referred to individual age bands or the shape of the population pyramid and so did not gain credit.
- (ii) This question differentiated well and there were some high scoring answers which considered valid problems caused by a large dependent population. Weaker answers included vague ideas such as resources or services rather than defining these clearly. Some also considered future problems when the young dependent population aged rather than focussing on actual problems caused by a large number of young dependents.

- (c) This was a straightforward case study and differentiated well. The strongest responses included appropriate examples, particularly China, although there were also some pro natal policies considered such as France and Sweden. It is important that candidates describe a number of elements of the policy to fully access the marks. Some candidates did not seem to have answered the question set and incorrectly evaluated the success of a population policy rather than describing it. Candidates also need to avoid the use of an overall introduction providing context and instead need to concentrate on answering the question set.

Question 2

This question was less popular than **Question 1**.

- (a) (i) This question was often not well answered and a clear definition for an urban area was not always given, instead often listing features of urban areas.
- (ii) Most candidates correctly completed the pie graph for full marks, although some candidates did not use the correct order of segments, electricity generation and then other.
- (iii) Many candidates did not clearly compare the two countries. Instead they considered the countries separately or listed accurate statistics, but did not clearly state a comparison. The use of the word 'only' or 'just' with statistics is not a clear comparison and therefore did not gain credit.
- (iv) This question differentiated well. Stronger answers considered four distinct relevant problems and so gained full marks. Many other candidates described general problems such as sickness or disease, but did not specifically state the problems.
- (b) (i) Most candidates successfully identified either two or three causes of traffic congestion from the figure.
- (ii) Stronger responses gave a whole range of relevant strategies which can be used to reduce traffic problems. Weaker answers tended to focus on just one or two strategies and did not develop their answers fully enough for further credit. Ideas such as to improve public transport need further development for credit, for example by subsidising fares, bus only lanes or more bus routes.
- (c) This question discriminated well. Stronger responses considered a clear land use change on a local scale, describing the land use before and after the change and the problems caused by it. Conflict involves a number of different viewpoints and the strongest answers considered conflicting viewpoints or arguments to create a higher level of response and full credit.

Question 3

This question was generally more popular than **Question 4**.

- (a) (i) Most candidates correctly completed the bar graph, although some candidates appeared to mistakenly miss this question.
- (ii) Many candidates were able to correctly identify the two main problems shown in the graph, although some candidates did not use the graph and so answered with more general problems.
- (iii) This question differentiated well. Many candidates correctly identified a range of problems caused by a lack of water and sanitation. Other candidates considered the need for water to survive and to avoid dehydration but did not consider other factors or made generalised statements about hygiene or disease, which were not fully developed enough for credit.
- (iv) Stronger answers showed an understanding of specific measures to earthquake-proof buildings such as flexible steel frames, damper weight systems and the use of shock absorbers. Weaker answers considered stronger buildings, but these were often repetitive with no clear understanding demonstrated.

- (b) (i) This question differentiated well. Many candidates correctly identified the distribution along plate boundaries, but few candidates clearly identified areas within continents using clear compass directions, or considered the idea that they are in clusters or are linear. Many responses incorrectly referred to areas above or below the equator rather than stating north or south of the equator.
- (ii) Whilst most responses correctly suggested that there will be more deaths along plate boundaries, stronger answers also considered the impact of population density and the difference in level of preparedness and response between LEDCs and MEDCs to fully access the marks available.
- (c) This case study question differentiated well. Excellent answers showed a clear understanding particularly of destructive plate boundaries with good place specific detail. Some candidates appeared to have misunderstood the question and described the impacts of volcanic eruptions instead of the causes and so did not gain credit despite very detailed answers.

Question 4

This question was generally less popular than **Question 3**.

- (a) (i) The majority of candidates correctly identified the river feature.
- (ii) Most candidates correctly suggested that the feature is composed of sediment but many then began to explain its formation rather than describing other aspects such as its slope or lying just above the level of the river.
- (iii) Responses to this question were mixed. Whilst there were some good answers which discussed the idea of fast flowing water and the different stages of the formation of the feature, other responses showed limited understanding. Many used the term helicoidal flow but showed little understanding of the process and how it linked to erosion of the river bank.
- (iv) This question differentiated well. Stronger answers demonstrated a clear understanding of the stages in the formation of an oxbow lake, whilst weaker responses described how the river might alter but showed little understanding of the processes and the stages involved.
- (b) (i) This question was not answered well. Whilst many candidates correctly identified the delta's proximity to the South China Sea, few used compass directions or the scale to further develop their answer. Many candidates incorrectly referred to tributaries rather than distributaries.
- (ii) This question differentiated well. Stronger answers demonstrated a clear understanding of the stages of formation of a river delta, including processes such as flocculation. Weaker answers simply described the slowing and deposition of a river, but did not develop their answers further than this.
- (c) There was similar performance to **Question 3c** since many candidates did not appear to have read the question carefully and so described benefits as well as hazards. There were many excellent answers with good case study detail, particularly of flooding hazards, using case studies such as the river Ganges, Brahmaputra, Mississippi or often a local river to good effect.

Question 5

This was a less popular choice than **Question 6**.

- (a) (i) Candidates needed to clearly define the term subsistence farming. Whilst many defined subsistence, they did not clearly define farming, so what it is that farmers do to support themselves, for example grow crops, keep animals.
- (ii) This question was generally answered well with most candidates clearly identifying both crops and animals. It is important that candidates identify what is shown in the photograph rather than what is not there, such as machinery.
- (iii) Most candidates gained full marks here. Weaker answers confused maize, milk and water.

- (iv) Most candidates gained one or two marks for reasons such as lack of land or machinery. Stronger answers developed clear ideas such as being too poor to buy food or lacking other factors such as money to purchase fertilisers or to afford good quality seed.
- (b) (i) The trends in the graph were identified by the majority of candidates and often supported by accurate statistics using the correct units. Weaker answers did not compare the overall trends but instead focused on change from year to year, which did not gain credit.
- (ii) This question discriminated well with some excellent answers referring to a variety of mark scheme ideas. Weaker answers tended to simply consider one or two ideas but did not develop them. Seasonal variations were not valid as the question is about overall changes from year to year.
- (c) Whilst good place specific detail was often seen here, many candidates did not develop their answers beyond simple description or explanation. References were made generally to climate, however clear descriptions or relevant statistics were not often used.

Question 6

This was a more popular choice than **Question 5**.

- (a) (i) The vast majority of candidates used the resource and answered this correctly, however some incorrectly identified both oil and gas.
- (ii) Most candidates answered this well, however some candidates did not use the scale and named urban areas beyond 50 km.
- (iii) Whilst some candidates answered this well and made good use of the resource, many candidates answered this question with generic points rather than using evidence from the figure.
- (iv) Answers were varied and the question discriminated well. Weaker answers considered the large number of pollutants or activities taking place. Stronger responses considered the economic advantage of the activities, but few developed their answers to consider the sheer size of the polluted area and the fact that more than one country borders the Caspian Sea.
- (b) (i) Many candidates recognised how each of the activities are responsible for the emission of specific gases, particularly the cattle.
- (ii) This question differentiated well. A variety of answers was seen from excellent answers which showed a good understanding of the impact of the accumulation of greenhouse gases and also short and long wave radiation, to weaker answers which incorrectly focused on the depletion of the ozone layer.
- (c) Some excellent responses to this question were seen, using a number of different examples with clear place specific detail such as named species, locations or relevant statistics. Weaker answers tended to repeat the same idea several times rather than developing three discrete ideas.

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Paper 0460/21
Paper 21

Key messages

- When questions require a description of photographs, candidates should concentrate on what can be seen in the photograph and avoid speculation. This was evident in **Questions 3(a)** and **5(b)**.
- Candidates should understand the meaning of key terms listed in the syllabus, e.g. settlement pattern, linear, nucleated, dispersed (page 21).
- Although candidates were often competent in measuring 360° bearings they were often unable to give a compass direction correctly. The 16 points of the compass are specified knowledge on page 21 of the syllabus.
- Also in the mapwork question, adding information to a cross section and measuring distances were areas for improvement.

General comments

Responses to the questions ranged in quality across the whole paper. The range of marks was similar to last year but with slightly fewer excellent scripts (50 marks and above) seen. Candidates performed well on many part of **Question 1** and on **Question 4** overall. All candidates were able to complete the paper in the allotted time.

Question 1

- (a) Most candidates scored well in this section. Occasionally they copied the whole line out from the key where several different symbols were shown, leading to ambiguous answers. In **part (i)** the correct answer *marsh liable to flooding* was frequently given but where just *marsh* was stated, this did not receive credit as the symbol shown was very different. In **parts (ii), (iii), (iv)** and **(v)** most candidates scored full credit. In **part (vi)** the correct answer *wind generators* was correctly stated by the majority, but *windmills* did not score as this was the incorrect symbol.
- (b) In **parts (i)** and **(ii)** most candidates made meaningful comparisons of the rivers and gained full credit. Where errors were made, this was due to candidates muddling up the rivers and not always understanding the meaning of width and shape. **Part (iii)** proved to be more difficult for candidates and whilst most correctly stated that *River 1 flows to the east or south east*, only a very small number recognised that *River 2 flows to the south south west*. The 16 points of the compass should always be used in responses where appropriate.
- (c) The three settlement patterns were recognised by some, but many candidates filled in the table with other irrelevant ideas unrelated to the question. Candidates should ensure that they understand fully geographic terms such as these which are listed in the syllabus.
- (d) Some responses showed some confusion about the best way to tackle this question and there were many incorrect responses. Often the correct responses for **X** *arable* and **Y** *forest* were reversed.
- (e) In **part (i)** there were many incorrect answers. Page 21 of the syllabus advises the use of the edge of a sheet of paper and the scale line rather than mathematical calculations to measure distances. Candidates are recommended to check their answers to ensure that they make sense given the map scale.

In **part (ii)** the required response was *south south east* and this was only given by a few candidates.

In **part (iii)** more candidates gained marks and showed a good understanding of bearings.

Only a small number of candidates gained full marks in **part (iv)** for the correct answer of 495021. Many more gained a single mark for a partially accurate answer.

Question 2

- (a) Most candidates were awarded full credit, given that there was a reasonable tolerance allowed for answers. Those who did not score may not have selected the correct bar on the relevant population pyramid.
- (b) Only a few candidates scored all marks in this section. Many responses did not always seem to have considered the scale and shape of each of the diagrams. In particular, very few identified in **part (i)** that *Japan* had the lowest birth rate, with the majority incorrectly offering *Mozambique*, perhaps because it has the smallest actual number in the 0 – 4 age group. **Part (iii)** also attracted few correct answers, with *Japan* often incorrectly suggested.

Question 3

- (a) There were some good responses in this section and many features of the houses gained credit such as the *small size*, *scattered distribution*, *flat roofs*, *few windows*, *metal sheets*, *different colours* (silver, blue, red, grey), *tyres on roofs*, and the *similar style* of the buildings. Some of the weaker responses were irrelevant and made suggestions about the lives of the people living in the area. Others failed to concentrate on the buildings as the question required and wrote about the roads, gradient or natural environment shown in the photograph.
- (b) Candidates generally scored well in this section and marks were higher than in **part (a)**. Almost all answers stated differences between **Fig. 3.1** and **Fig. 3.2**. Among the common responses were clearly stated differences in density, size, building materials, trees and windows.

Question 4

- (a) In **part (i)** many candidates were able to use a labelled arrow to mark the position of Arenal directly above the rising magma on **Fig. 4.2** as required, although some omitted the question or failed to label the arrow. In **part (ii)** many candidates also were able to draw two converging arrows to show the directions of plate movement on **Fig. 4.2**. In both **parts (i)** and **(ii)** a large number of responses incorrectly placed the arrows on **Fig. 4.1** and did not score the marks. On **part (iii)** most responses gained credit for *Caribbean* though there was some confusion with the *Cocos* plate. In **part (iv)** most candidates correctly identified *convergent* plates.
- (b) In general, candidates found this section easier than **(a)** and gained both marks. Most commonly, the presence of *fertile soils* and *tourism* were given as correct answers although *geothermal power* and *mineral wealth* were also frequently offered.
- (c) Among a wide variety of hazards which endanger life, the most common correct answers were *lahars*, *pyroclastic flows* and *poisonous gases*. Some one-word answers such as *lava* or *ash* did not gain credit.

Question 5

- (a) Responses were somewhat weak in this section and very few correctly noted that **X** was a *wave-cut platform*, **Y** was a *cliff* and **Z** was a *beach*. These were all terms listed in **Section 2.3** of the syllabus.
- (b) Many responses recognised the *bay*, *beach*, *sand*, *rocks* and *grass*. Some responses also explained the formation of these features which was not required by the question and did not gain credit.

Question 6

- (a) There were mixed responses in this section but in general, candidates seemed to have spent some time studying **Fig. 6.1**. The best responses recognised that France has *many shared borders* with *MEDCs* and so *wealthy people can afford foreign holidays and travel to France by land*. Weaker responses were often vague and without the required evidence.
- (b) Many candidates chose to copy down ideas about the physical landscape from **Fig. 6.2** without explaining how these have helped tourism to develop. Good responses, for example, recognised that the presence of high mountains and snow could lead to the development of a skiing industry. Some candidates wrote about aspects of the human landscape which were not required here.
- (c) Many responses were too vague and did not focus on what the question asked. *Loss of ecosystems, deforestation and air pollution from motor vehicles* are examples of answers which gained marks. Again, the emphasis was on the physical environment and responses relating to the human environment did not gain credit.

GEOGRAPHY

Paper 0460/22
Paper 22

Key messages

- The correct method for giving four-figure and six-figure grid references is described on page 21 of the syllabus. Candidates should use this method when answering questions.
- Candidates should know the meaning of key terms listed in the syllabus, such as annual temperature range.
- **Section 2.5** of the syllabus requires candidates not only to be able to *describe* the two listed climates but also to *explain* them. In **Question 3(c)** many candidates were unable to explain why the equatorial climate is constant throughout the year. (In previous examinations candidates have been unable to explain the aridity of the hot desert climate).

General comments

Candidates performed well in all parts of the mapwork question with the exception of the grid reference in **Question 1(e)(iii)**. Answers to **Question 2(b)** were weak and candidates were not able to link the location of settlements to the contour map. **Question 6** was well answered but there were some aspects of **Questions 3, 4 and 5** which candidates found difficult.

Question 1

- (a) Generally, candidates were able to score high marks on this section, showing good skills of finding features on the map and identifying them using the key. **A** was a public road, **B** was a church (Examiners accepted parish or other church as the map symbol was unclear), and **C** was a mast (not a tower). The numerical answers caused most problems. The height of the spot height at **D** was 33 m and the height of the contour at **E** was 100 m.
- (b) There were many excellent answers to this question which required candidates to compare two areas of the map. The relief sections proved most difficult: there was flat land in **Fig. 1.2B**, gentle land in **Fig. 1.2A** but steep land in neither area.
- (c) When plotting the positions of the public road and the river on the cross section, candidates were required to use labelled arrows but many ignored this instruction. The arrows should have pointed clearly to the profile and not to the base line. Accuracy of the plotting was variable. When completing the profile many candidates scored one mark for showing the land rising continuously towards the left hand side of the diagram. Fewer scored a second mark for showing the highest point over 100 m but not more than 112 m above sea level.
- (d) Most candidates were able to score two marks for giving map evidence for a tourist settlement. They usually quoted the leisure homes and bathing and occasionally the camp site.
- (e) Most candidates scored one mark for giving the compass direction as north east. East north east was also an acceptable answer. Answers to the bearing were generally excellent and within the permitted tolerance of 63° to 67°. Most candidates scored one mark for giving a grid reference in the correct square but the third and sixth figures of the reference were less accurate than in recent examination sessions.

Question 2

- (a) Most candidates were aware that settlement hierarchy was a list of settlements in order of population size and importance and that services were the amenities provided in a settlement for the population e.g. shops.
- (b) The question was poorly answered and high marks were rare. This was generally because candidates wrote in very general terms and failed to refer to **Fig. 2.1**. and give specific information about the location of the settlements. In **part (i)** on transport, candidates often gave answers such as 'roads provide transport and accessibility' but failed to point out that the *settlements were along or near the roads*. Very few responses noted the nucleated settlement at the road junction. Similarly, in **part (ii)** candidates often said that the 'rivers provide a water supply' but failed to note that the *settlements were mostly near rivers*. In **part (iii)** few responses noted that the settlements were often slightly *away from the main river or at a higher level than the rivers*. In **part (iv)** many candidates described the relief of the area but failed to refer to settlement. Credit could be gained by referring to such points as the settlements *avoided the steep slopes, were on gentle slopes, avoided the highest land and were away from the flood plain*. Just occasionally a candidate referred to the *south facing aspect* or possible *shelter by hills*.

Question 3

- (a) In **part (i)** most candidates were able to complete the bar and line graphs successfully. **Part (ii)** proved more difficult. Candidates generally gave the correct mean temperature of the hottest month (27 °C) but were unaware that 24 °C was a *hot* temperature. For the annual temperature range (3 °C) Examiners allowed descriptions such as *low* or *small* but candidates often gave answers such as 'cold' indicating that they did not understand the term *annual temperature range*.
- (b) Most candidates gained full credit here. The daily range of temperature was 8 °C, although there were some answers of 29 °C, indicating that candidates confused the daily *range* with the daily *mean*. Most candidates realised that rainfall would be expected between 12:00 and 18:00.
- (c) The responses to this question were relatively weak. In explaining why the equatorial climate is constant throughout the year, just a few responses noted the constant high angle of the sun. Candidates seemed generally unaware of the constant length of day and night or the constant low pressure.

Question 4

- (a) Most responses correctly identified the focus of an earthquake as being *the point in the Earth where an earthquake occurs* and the epicentre as being *the point on the Earth's surface directly above the focus*.
- (b) The question required candidates to use information from both **Fig. 4.1** and **Table 4.2**. Most candidates were able to identify the earthquake effects on the buildings at Nelson as broken windows, however some then incorrectly quoted effects from intensities higher than the Intensity 5 at Nelson. When explaining the greater loss of life at Kaikoura compared with Wellington most candidates referred to nearness to the epicentres and the difference in intensities. Some candidates failed to make any comparison between the two towns and failed to gain credit. Credit was also given to those responses which referred to people falling or running outdoors and being hit by falling objects in Kaikoura.
- (c) Many candidates scored full credit. Those who got either **part (i)** or **part (ii)** wrong could still gain credit in **part (iii)** if they performed the correct calculation with their answers to **parts (i)** and **(ii)**.

Question 5

- (a) The agricultural system in **Fig. 5.1** was intensive and arable. Many candidates got one of these correct but very few got both. Responses should then have used evidence from the photograph to explain how soil erosion was prevented in the area. Examiners accepted terraces (or a description of terraces); this would slow runoff or increase infiltration. The grass strips would catch moving soil and the trees would stop wind or intercept rain. Many responses were awarded scored two marks but few scored full credit.

- (b) There was a mixed response to this question which required candidates to use evidence from **Fig. 5.2** to describe how food supply was increased in the area. There was evidence of deforestation, dividing the land into plots, irrigation and planting. Each of these points was often given by candidates.

Question 6

- (a) Most responses gained credit for noting the decrease in Europe, the increase in the Asia-Pacific region and the increase followed by a decrease in the USA.
- (b) Most candidates correctly identified the Arab States as having the greatest increase in internet use. Credit was also given to those who answered Africa, based on its nine-fold increase.

In **part (ii)** many responses were awarded full credit for suggestion how increased internet use could help people in LEDCs. Points given credit included communication with friends or family, international communication, education (a variety of points was made here), stimulation of economic development, providing jobs, allowing trading or payments, allowing advertising and entertainment. Responses tended not to mention difficulties to overcome in remote or inaccessible areas or the poor provision of land lines.



GEOGRAPHY

Paper 0460/23
Paper 23

Key messages

- Candidates should be aware that this paper is skills based and that they should make full use of the resources provided when answering the questions.
- Candidates were not sufficiently accurate when labelling features on a cross section, as in **Question 1(g)**.
- Many candidates were not familiar with the system of estimating cloud cover in oktas.
- In numerical questions candidates should always quote the correct units.

General comments

This paper was comparable with previous sessions with **Question 2**, **Question 3**, **Question 4** and **Question 5** all presenting as slightly easier than other questions except for **Question 2(b)** and **Question 5(c)**. Candidates found aspects of the mapwork question challenging, including the river description (**Question 1(d)**), the distribution of arable and woodland (**Question 1(e)**) and the cross section (**Question 1(g)**). **Question 6** was not found particularly difficult, but omission rates were quite high towards the end, suggesting that some candidates may have been running short of time.

Generally, candidates showed a good grasp of techniques necessary for successful interpretation and analysis of data and were competent in handling the wide variety of ways that data was presented to them.

Question 1

- (a) The 1:50 000 map was of Knislinge, Sweden. Candidates were directed to the western side of the extract, as shown in **Fig. 1.1**, and asked to identify various features. Feature **A** was a *turning place*. The type of land at **B**, shown by the white section on the map, was *open land* or *other land*. Many had a correct answer, while the most common incorrect response was deciduous forest, which shared the same line in the key. The natural vegetation at **C** was *deciduous forest*. Contour **D** was *25 metres* above sea level. Candidates found this relatively easy as this was the only contour in the immediate area with a label. Some candidates omitted the units (metres). Feature **E** was a *municipality boundary*. Being the only boundary type on the map made this very straightforward and almost all candidates had the correct answer.
- (b) In **part (i)**, the width of the road labelled **F** was shown in the key as *5 – 7 metres*, however, many candidates put answers of around 50 metres. In **part (ii)** candidates were asked to describe the general pattern of the main roads shown on **Fig. 1.2**, where the roads were *focussing on the town* in a *radial pattern* at the route centre. Although the candidates did not always use these terms, they were usually able to describe the pattern.
- (c) For the length of the surfaced section of the runway labelled **R** on **Fig. 1**, was between *2000* and *2200 metres*. Many candidates were within this tolerance but others had perhaps misunderstood the scale. The compass direction, from the end near Sigfridssten, was *SSE* or *SE*. There were many correct answers, but some gave a bearing rather than a compass direction, and there was also quite a high omission rate on this question.
- (d) The river crossing from 380260 to join with the river Helge å was *flowing east* and was *at least 6 metres wide*. After a *straight section* on the western edge of the map there were *meanders* with a *cut-off forming an island*. The river was crossing a *gentle gradient* with only a *few tributaries*. A couple of *dams* were also present. Most candidates made at least some of these points, typically

scoring 2 or 3. Those who did not score usually wrote about land use beside the river or wrote about the river Helge å.

- (e) In **part (i)**, the distribution of arable land on **Fig. 1.3** was on the *lower land* and the *gentler slopes*. This was one of the hardest questions on the paper with very few scoring full marks. In **part (ii)** the woodland was predominantly *in the west* and *in the south* and *on the higher land* or *steeper land*. There was a relatively high omission rate for this question.
- (f) In **part (i)**, Araslövssjön lake was surrounded by *marshland*, specifically marsh liable to flooding but marsh alone was accepted. The most common incorrect answer was deciduous forest. The lake in **part (ii)** was a *nature reserve*, shown by the label.
- (g) In **Fig. 1.4**, candidates were given a cross section and were instructed to mark the positions of the railway and the river Kålan. Measuring from the vertical axis on the western side, the railway was between *76 and 80 mm*, while the river was between *24 and 27 mm*. There were quite a few omissions of this question but those who answered it generally knew what was expected but did not always complete the task with enough accuracy.

Question 2

- (a) In **part (i)** almost all of the candidates were able to work out that the population density of region 6 was *40 – 99.9 people per square kilometre*. In **part (ii)** almost all candidate correctly selected the *centre region*. **Part (iii)** was also well answered. The region was largely divided into *desert*, where lack of rainfall would make *agriculture difficult*, and *mountains*, with *steep slopes* again affecting agriculture and also making building difficult. Additionally, the region would have *high temperatures* and *high evaporation* rates in the desert, but *cold* and *wet* conditions in the mountains, and the presence of a *dangerous active volcano*. In **part (iv)** difficulties of living in region 8 included *cold temperatures*, making *farming difficult*, and its *remote or isolated* situation, with the difficulty of access, in a community spread across *4000 islands*. Many noted the temperature or the distance from Santiago. Many also commented on the islands but could not always give a reason why this made life difficult. A number thought that there would be danger from tsunamis, although there was no evidence for this in the resource.
- (b) Chile's capital, Santiago, has a central location, making it as accessible as possible from all the other regions and thus helping to connect the north and the south of the country. Many mentioned the central location but relatively few went on to explain why this was an advantage

Question 3

- (a) Most candidates managed to describe the beach material in the photograph as *pebbles*, *shingle*, *stones*, *cobbles*, *small rocks* or *gravel*. The most common mistake was to describe the groyne. In **part (ii)** the evidence that the wooden structure was reducing longshore drift was the fact that the *beach material had built up on one side of it* and also that the *sea was coming further forward on one side* than the other. Candidates generally knew this although some described how the groyne prevented longshore drift, rather than stating the evidence from the photo.
- (b) Structure **F** was a *gabion*, made up of *rocks encased in wire*, while **G** was a *rip-rap* barrier made from a pile of large *boulders*. Most candidates got a mark for **G**. A few struggled for a suitable expression to describe the wire mesh in **F**. Weaker responses tended to confused **F** and **G**. Candidates were then asked to explain how structure **G** protected the coast. For full credit they needed to say that the rocks would *reduce the wave energy* and that this would *prevent or reduce erosion*. Many scored half of the available credit on this question. In **part (iii)** many candidates suggested *visual pollution*, *difficult to access the beach*, *cost* or *loss of habitats* as reasons why some people might oppose the development.

Question 4

- (a) Candidates were able to score freely for **Fig. 4.1**, describing the cloud as *white*, *cumulus*, with a *flat base* and *curved* or *irregular top*. Candidates found the *grey*, *stratus* in *uniform layers* in **Fig. 4.2** more difficult to describe and many thought the cloud type to be cirrostratus.
- (b) The cloud cover on Fig. 4.2 was 7, or even 8, oktas. It was clear that many candidates were unfamiliar with this, and there was a high omission rate on this question.

- (c) For the difference between stratus and cirrostratus clouds, many noted the height difference, while for cumulus and cumulonimbus the latter was taller, or simply bigger, and with a flat top.

Question 5

- (a) Fig. 5.1 showed stages in the production of aluminium from bauxite. By looking at both ends of the diagram, it could be seen that one tonne of aluminium was made from five tonnes of bauxite. There were many correct answers though some suggested 2.5 tonnes, as they were looking at the output of alumina at the intermediate stage. Almost all candidates correctly answered *red mud* in **part (ii)**, *caustic soda* or *lime* in **part (iii)**, and *alumina* in **part (iv)** (although there was some confusion with aluminium).
- (b) Almost all candidates had the correct answer of *India* for the country with the same rank for both aspects of the graph. The most common mistake was to quote two countries with the same rank, such as Canada and UAE. In **part (ii)**, the quantity of bauxite mined in Guinea in 2014 was between *19 and 19.3 million tonnes*. A few missed the mark here, due to either rounding up their answers or omitting the units of million tonnes. In **part (iii)**, candidates suggested *lack of capital* and that they could not afford the huge amounts of electricity needed for production, a *shortage of technology* or *lack of the necessary skills* as the reason why Guinea was ranked 4 for bauxite mining, while having no aluminium manufacturing. A few suggested that Guinea lacked raw materials, which clearly was not the case, with its fourth position in the ranking for bauxite mining.
- (c) Few credit worthy responses were seen for this part of the question. Only a few candidates pointed out that for the same amount of aluminium output less tonnage would need to be shipped if alumina was imported rather than bauxite.

Question 6

- (a) In **part (i)**, most candidates had no trouble and answers in the range 82 per cent to 85 per cent were acceptable. In **part (ii)** using **Fig. 6.2**, two problems for Egypt of relying on groundwater were that the groundwater was *deep* and, at least in part, *saline*, the dry environment would have insufficient rain to renew the supply, making it *unsustainable*, and that extraction from beneath the surface would be difficult. Candidates typically scored one mark here. Commonly candidates assumed that groundwater would be dirty and the cause of various diseases. In **part (iii)** many candidates knew that groundwater was obtained by *pumping* the water out of the ground or lifting it from a *well* or *borehole*. A few responses were rather vague, writing about digging or mining or about use of pipes, without making it clear how they would be used. In **part (iv)** the map gave a couple of options for a source of water for desalination: the *Mediterranean Sea* or the *Red Sea*. A common mistake here was to give a fresh water source, while there was also a high omission rate on this question. In **part (v)** most candidates pointed out the *expense of desalinating water* being a major disadvantage.
- (b) Finally, candidates were asked to explain why Egyptians would be opposed to the new Grand Renaissance Dam in Ethiopia. Few candidates used the map to deduce that the dam would reduce flow in the Nile and could lead to water shortages for irrigation, hydroelectric power, industry and domestic use. The amount able to be stored in the Aswan Dam might also be reduced. Commonly candidates wrote about why there might be opposition to the dam at the point of construction, in Ethiopia.

GEOGRAPHY

Paper 0460/03
Coursework

Key messages

This report refers to the performance of centres in the November 2019 examination, however, the comments made here are equally applicable for centres that make their entries for the first time in June 2020.

The number of entries for the coursework option showed a small increase compared with November 2018, although the number of centres remained the same. There were no centres who opted for the 0973 03 option rather than 0460 03. The centres were equally split between the Northern and Southern Hemisphere. Human Geography topics dominated over Physical Geography ones, with one centre offering candidates a choice of each, although candidates could only submit one piece for coursework. Candidates achieved equally well on each topic. This session was notable for the wide range of topics undertaken, both physical and human with there being no evidence that candidates did better in any one single topic.

For most established centres, the quality of the coursework submissions continues to improve. However, for some new centres it was clear that all the available documentation had not been read or that the staff involved had not received training on how to run and/or mark the coursework option. If you have not already done so, then you should submit an outline proposal for approval by CIE. This details the nature of the coursework that you are planning for your candidates to undertake, and should be based on the route to geographical enquiry. Besides the *Moderator's Comments on School-Based Assessment of Coursework* report on the submitted coursework, it is the main opportunity for CIE to offer advice based on good practice as well as comment on proposals which may hinder a candidate. This particularly applies to the nature and amount of data collected. It is important that enough primary data is collected to allow candidates to exhibit a depth of understanding in their analysis. Provided suggestions are at an appropriate level for those studying IGCSE and the topic is on the IGCSE syllabus, then approval is nearly always forthcoming. Once submitted, there is no need to resubmit this year on year if the proposal remains unchanged.

It is also recommended that teachers who are new to the coursework option attend the relevant course for IGCSE Geography operated in their region if possible. In addition, there is training available online. There is also the Coursework Handbook available from CIE which includes examples of coursework which are annotated to show how they should be marked.

Recently some centres have submitted a number of different proposals with the aim that each of their candidates collects data on their own on a different topic. We do not recommend doing individual studies and these cannot be approved. It is usual that data is collected as a group and then collated by a teacher and redistributed to the candidates for them to work on their individual hypotheses. The candidates therefore collect data in groups and then contribute this to the overall data collection. For reasons of safety we do not recommend that candidates collect data on their own. Should a candidate do so, for instance to add extra data for their own study to that which has already been collected as a group, we would expect them to be accompanied by an adult, especially when administering questionnaires or collecting data on a river or along a beach.

It must be pointed out that for most centres the moderation process runs smoothly. It is inevitable that this report focuses on aspects of the moderation which were not done so well or where candidates could improve their coursework to access the higher grades.

General comments

Where candidates collaborated in one overall data collection exercise, these tended to be well organised and resulted in a large amount of data. This was collated by a member of staff and subsequently redistributed in

order that each candidate could work on his/her own individual hypotheses. However, where candidates collected their own data in small groups this did not tend to work so well.

Although data collection is normally a collaborative exercise, individuality is key to reaching the highest marks. It is therefore important that a group of candidates undertake a range of different hypotheses on any one topic. One model is to have one overarching hypothesis and then each candidate attempts a maximum of two sub-hypotheses. In other cases each candidate was given one hypothesis by the centre and then he/she uses their own initiative in devising another. Any hypotheses devised by the candidates should be vetted by their teacher to see that they are viable and thus fit within the proposed data collection strategy. There are some centres in which all candidates do the same hypotheses and submit the same computer generated graphs. In some of these cases very little individuality was demonstrated.

It was noted by the Moderators that the better studies were those that were more concise. There seemed to be a concerted effort to keep to the word limit and only a few that tended to be a little verbose and exhibiting a loss of focus on the original aims of the investigation. Getting candidates to declare a word limit usually gets them to concentrate on the issue.

It was also reported that in general the studies were well balanced with candidates demonstrating a familiarity with the Route to Geographical Enquiry. On occasions the introduction and methodology were too long and the analysis and conclusion, too short, despite the fact that it is quality not quantity that should be emphasised.

The strongest area for some candidates was the data presentation, where many not only effectively employed a range of different methods, but showed some complexity in their graphs which gained access to the higher marks for the criteria. However, scanned graphs that had been hand drawn, were often difficult to read as were some maps which were scanned at the wrong scale and resembled postage stamps. The data collection was also well described by the majority of candidates who thus scored highly for the Observation and Collection of data criteria.

The analysis continues to be the weakest section, and although description of the data was often thorough it lacked explanation or the explanation was rather speculative. Conclusions often lacked reference to key data, which prevented access to the highest marks, although the evaluation was in comparison, much stronger and revealed that candidates had a good appreciation of some of the drawbacks of their data collection strategies.

Comments on specific assessment criteria

Since each centre will receive a coursework report entitled *Moderator's Comments on School-Based Assessment of Coursework* which will refer to both particular strengths, and weaknesses, it is points that are common to several centres which are reported below and are based on each of the assessment criteria in turn.

In general markers were accurate in applying the *Generic mark scheme for Coursework assessment*. In nearly all centres it was applied consistently and thus the Moderators tended to agree with the order of candidates. There were quite a few centres whose marks had to be adjusted, but this was usually within the range of -3 to +3. While many centre's marks were not changed, there seemed to be a pattern of negative adjustments above 47 marks and positive ones for those below 35. *Knowledge with Understanding* and the *Conclusion* tended to be adjusted negatively, while *Organisation and Presentation* was adjusted positively. Those very few centres which had a large adjustment applied, were generally relatively new to the moderation process; the reasons would be detailed in the their coursework report.

The criteria of *Knowledge with Understanding* tended to be assessed a little too highly. Some introductions were far too long, possessing detail which was extraneous to the part of syllabus topic which the hypotheses were testing. This applied to much historical information for instance. The scene needs only to be set briefly and then is followed with some relevant geographical theory which is linked to the aims of the study as well as the hypotheses e.g. push and pull factors in the case of migration or Bradshaw's model in the case of a rivers study. It is usual that the hypotheses are justified in the light of theory. As it was, some hypotheses were just listed with little or nothing in the way of justification or predicted outcomes. A glossary of geographical terms was included in some studies; these are largely superfluous, unless it is demonstrated how the concepts described will be tested. On the other hand, in some studies there was no geographical theory at all which not only meant there was no context for the justification of the hypotheses, but this also made the explanation in the analysis rather limited.

It is important that the location in which the data is collected is given a context and this is usually accomplished by the provision of a map or a series of maps at different scales. These maps were often scanned in to the study without any annotations and thus they gained little or no credit. Google maps are often used but are not always fit for purpose. The most important is a local scale map in which the sites at which data was collected are clearly located. A regional scale map could also be used to show, the overall drainage basin for a river for instance, or the area of a large city where the data was collected.

Markers are reminded that whilst it is inevitable that much of a candidate's knowledge will be demonstrated in the introduction, for instance, with the description of relevant theories, it can still appear in all the other sections, and in particular, in the analysis, when explanation for the patterns that have been identified are sought. Likewise, understanding should be assessed throughout the study and relevant comments made on the script, for example when a theory has been appropriately applied or indeed a well-reasoned account of why it has been dismissed.

The criteria *Observation and Collection of Data* was by and large, accurately assessed by the markers and very few adjustments had to be made. Candidates usually described the data collection techniques in detail and quite often in tabular form. Here, not only was the equipment described but also the reasoning behind using it, together with some of the limitations. The latter is subsequently described again in the evaluation, and thus, perhaps some wordage can be saved here (by limiting such comments to the evaluation).

The advice that at least 50 questionnaires should be undertaken by the group as a whole, is now well understood by established centres. However, those candidates who go out in pairs or small groups and collect data on their own, are the ones who are more likely to fall well short. Only collecting data from 5 – 10 people will not yield enough data to allow the appropriate depth of analysis.

A further weakness in many studies was the lack of description of the sampling procedure especially for questionnaires. Where such a description existed the justification of the method was missing. This also applied to why each of the sites used for data collection was chosen.

There are some centres who attempt to collect all the data within a one to two hour period. This often, but not always, results in a limited amount of data, compared with those who have been given a lot longer. The former is thus self-penalising.

Centres are reminded that the coursework must be based on the collection of primary data by the candidates themselves. There are now only isolated examples of candidates whom base their data collection on a preponderance of secondary data. This is unlikely to score at a high level. However, there have been some very good studies which have compared their data with that collected by the school in the past, and this is perfectly admissible. All centres should encourage candidates to include tables of their data, preferably integrated with the data presentation and analysis sections. This facilitates easy reference to the data alongside relevant graphs. Furthermore, it also provides evidence that the candidate has taken part in the data collection exercise.

Some centres are still tending to overmark the criteria *Organisation and Presentation*. This is often due to the lack of complex methods of data presentation. The Moderators noted how many candidate were reliant on pie charts, bar graphs and line graphs. There were few complex techniques employed in some centres, although there were some radar graphs, compound bar graphs and scattergraphs with a line of best fit, seen in others. Opportunities were missed to produce located bar graphs and/or proportional circles. To these could be added maps with either flow lines, desire lines or isolines. It is worth noting that beach profiles and river cross sections count as a complex technique, but only if they are readily comparable by having the same scales. Well drawn field sketches were also rare, as were worked examples of a statistical technique such as Spearman's Rank Correlation. In the latter, the whole of the workings should be shown and not just the correlation coefficient, produced by the push of a computer key.

In addition, many of the bar graphs tended to lack labels especially on the Y axis, so were not effective; this is very common when graphs are produced using the computer. It should also be noted that different sorts of bar graphs only count as one technique. Furthermore, the same data presented in a number of different ways is likely only to count once, albeit if they are complex techniques.

Almost all studies contained photographs. These should be individual and centres should discourage the use of the same set of photographs for all studies. Photographs without any sort of labelling do not get any credit. It is not only expected that they are relevant, but should have annotations to indicate their relevance. Each photograph should have more than just a title.

Scale and orientation indicators to aid understanding should be included on maps. Some of the best maps continue to be those which have been hand drawn.

Most candidates followed the route to geographical enquiry and therefore produced studies with an appropriate structure. This often, but not always included an index of contents and page numbering. Many took great care to reference their secondary sources. Some studies included no references, despite using theory in the form of diagrams which had clearly come from a textbook. As mentioned in past reports, it is pleasing to see the increase in integration of text and diagrams/graphs. There were only a few studies seen which lumped all their graphs together and none where they were included in the appendix as seen in the past.

The Analysis is becoming more accurately marked with the marks awarded by most centres tending to reflect the depth of interpretation and explanation. For some new centres the analysis was too short and lacked reference to key data. The more established centres seemed to encourage the identification of anomalies and the suggestion of reasons why they might be there. However, these reasons were too often speculative, and used phrases such as 'It might be explained by...' 'The reason could be...' or 'It may have been...' which are best avoided. Some candidates could use their models or theories discussed in their introduction more in their interpretations. There were some thorough analyses which used the data and referenced the graphs well, but the reasons were just too short and tenuous to reach mid to higher Level 3. On some occasions the analysis was limited by the sheer lack of data, which is a pity since this is where candidates can really demonstrate their depth of understanding. An example would be in the interpretation of the result of statistical testing such as the coefficient generated from the use of Spearman's Rank Correlation and in particular if the result of this value is significance tested. Use of statistical testing was rare with only the former and the chi-squared test reported by Moderators.

Overall the conclusions were disappointing and as was the case last November, the criteria *Conclusion and Evaluation* tended to be overmarked. Although some candidates made conclusion statements in the analysis section, which markers should take into account, the general conclusions were still too short. Some centres awarded higher marks but only a summary of the hypotheses was given not a discussion on why they were proven or rejected. In addition, there was a consistent lack of key data to back up the assertions made for each hypothesis. Markers are reminded that as well as 'clear conclusions' the Generic mark Scheme for Coursework Assessment requires them to be 'clearly related to evidence collected' in order to be awarded the higher marks. Although this usually refers to selected numerical data, it can be reference back to stated characteristics shown on figures such as graphs, maps or tables. Where theoretical models or concepts were discussed in the introduction, it was reported that there was positive reference to them in some concluding statements.

The strongest part of many candidate's concluding section was invariably their evaluation. The best responses highlighted a number of areas which could be improved upon together with some sensible and applicable suggestions on how they could be accomplished. On the other hand there were some candidates who clearly did not discuss possible limitations of their coursework strategy and these made only a short attempt to provide an evaluation. On a positive note, from statements made in the evaluation, it was clear just how much candidates enjoyed their time collecting data since it added some reality to what they had learned in class.

Administration

All centres got their samples to CIE on time. Most of the paperwork was completed accurately and included with the sample, most of which had the Individual candidate Record Card attached. Candidates were listed in candidate order on the Coursework Assessment Summary Form, which also helped moderation. However, some centres did not include the correct number of scripts for their sample. This should be as follows;

- 0 – 50 candidates – 10 sample scripts
- 50 – 100 candidates – 15 sample scripts
- 101 + candidates – 20 sample scripts
- 201 + candidates – 10 per cent of the entry

Please continue to double check the paperwork to make sure there were no mathematical errors either in the addition of marks on the Coursework Assessment Summary Form or in the transcription of marks to the MS1. Only two errors were reported this time round.

Many thanks to markers who made helpful comments on the scripts using the wording from the Generic Mark Scheme for Coursework Assessment. These were very helpful and facilitated the smooth running of the moderation process. If your centre has not done so, it would be very much appreciated if markers make these comments (in pencil) on the scripts for your next submission. Where a centre has more than one marker it is essential that an internal moderation takes place. There is evidence that these have been conscientiously carried out by most centres and marks changed accordingly. However, the change for an individual candidate is not always reflected in the change in marks for individual assessment criteria, only the overall totals. These should be written on the Individual candidate Record Card. This information is essential for the Moderator's job to be carried out effectively. There have been occasions when one marker's marks from a centre has differed markedly in standard from the remainder of the markers and an internal moderation is the best way to resolve this problem.



GEOGRAPHY

Paper 0460/41
Alternative to Coursework

Key messages

Every examination is different but there are a few generic tips and key messages that need making that should improve candidate performance in future. Here 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. If you make an incorrect conclusion to the hypothesis you will gain no credit for the answer.
- When giving figures in an answer always give the units if they are not stated for you.
- Read questions carefully and identify the command word e.g. *Describe, Explain, Suggest*.
- When asked to compare, make judgements e.g. *higher, lower*, rather than just list comparative statistics.
- If comparing statistics, it is important to use paired data rather than one set on its own.
- Check you are using the resources that a question refers you to, e.g. *Support your conclusion with evidence from Fig. 1.6 and Table 1.2*.
- Attempt all completion tasks on graphs, tables or diagrams – not all the answers are on lines and in writing. Many candidates are missing out on relatively easy marks by not attempting these questions.
- Take into account the marks awarded. Examiners do not expect you to be writing 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*). This is very helpful to the Examiner in finding your answers.
- When completing graph work use a dark-coloured pencil or pen as scripts are scanned for marking and light colours do not always show up. **Always shade bar graphs and pie charts accurately.**
- When you think you have finished, check that you have not missed a question out. Some questions are hard to find if they are on pages with a lot of graphs or maps. **Make sure you have answered the questions on every page. This applies specially 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 was similar to previous years – with weaker responses scoring on the practical questions, such as drawing and interpreting graphs and tables, and stronger responses scoring well on the more challenging sections requiring explanation and judgement especially regarding hypotheses. Most candidates answered **Question 1** more successfully 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. This is an on-going problem from year to year despite it being highlighted in each report to centres. 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 or ignoring command words, and to the use of appropriate fieldwork techniques and equipment. Particular questions where candidates did not score well often related to them not carefully reading the question, for example **Question 2d(ii)** where some candidates focused on how the instrument worked rather than how it could be used by candidates in their fieldwork. As in some previous papers **Question 2d(ii)** required candidates to suggest a

suitable investigation to extend their fieldwork. This type of question is frequently included on this paper and is an area which centres should practise with candidates. However, it is not good practice to develop a series of generic improvements or methodology which may apply to all fieldwork, as such suggestions tend to be vague and not worth credit.

Centres need to be aware 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 2a(i), 2a(ii), 2a(iii), 2a(iv), 2a(v) and 2d(ii)** focused on specific equipment and techniques commonly used in fieldwork. Centres are encouraged to carry out basic fieldwork with candidates, especially using simple techniques which can be done on the school site or in the local area.

Comments on specific questions

Question 1

- (a) (i) This proved to be a difficult opening question for many candidates. They needed to compare Figs. 1.1 and 1.2 to see which buildings were on the map but not on the photograph. Some candidates just picked out buildings from the photograph which looked newer. Other candidates made the error of picking two buildings from the same part of the industrial area.
- (ii) Nearly all candidates correctly identified building 'X' on the photograph.
- (iii) The question was well answered by many candidates. They described or identified various features from the mark scheme. A significant number of candidates scored full marks from their environment descriptions without making reference to the building. Weaker responses were vague with descriptions such as vegetation, water, a clean area.
- (b) (i) The question differentiated well. Better responses described the distribution as scattered or spread out and noticed that most bio-medical companies were on the edge of the industrial area. Weaker responses incorrectly described them as evenly distributed. Some candidates described them as 'not in the centre' which was not accepted. Also some candidates showed a lack of understanding by referring to distribution in the city rather than the industrial area,
- (ii) This was a section which proved to be difficult for candidates. Better responses referred to reasons such as sharing information, being near a university, or suggested a general location requirement such as good road links or open space. However, many candidates suggested that companies could help each other and work together rather than recognising that they would be in competition. Weaker responses also suggested that sharing energy supply and being industries which gave off pollution would be reasons for their proximity.
- (iii) 5 per cent of candidates did not attempt the question. Most candidates plotted the dividing line accurately at 90 per cent and shaded the segments correctly. Weaker responses reversed the order of the segments, drew the dividing line inaccurately or shaded the technical consulting section incorrectly by not using vertical lines.
- (c) (i) Most candidates drew the bars accurately. Some candidates reversed them or did not plot the bio-medical bar accurately at 7 per cent. A few candidates drew both positive and negative bars for both industrial sectors.
- (ii) Most candidates agreed that hypothesis one was correct. They also identified examples of industrial sectors which had increased or decreased in number of companies and gave supporting data. Some candidates made the error of stating that companies rather than industrial sectors had decreased. Some candidates also gave details of industrial sectors where there had been no change, which was not needed.

- (iii) This was a difficult question for many candidates. Most candidates gained one mark by referring to the advantages of the companies for workers in other industries in the area, but only better responses referred to profits or customers which these companies could gain from this location near to other workplaces. Some candidates gained credit for suggesting a general location advantage such as cheap land or good road access. A few candidates incorrectly thought that the health club would act as a first aid centre or that the local high technology firms would supply these companies with equipment.
- (d) (i) Most candidates completed the divided bar graph accurately. A small minority plotted the dividing line at 30 or 32 rather than 31, and a few candidates reversed the order of the segments or shaded the lines to show 'higher university degree' in the wrong direction. Some candidates plotted results which did not go up to 50 but then left the remainder of the graph blank.
- (ii) The question differentiated well. To gain credit candidates had to identify that most of the workforce had a degree and thought that they were highly skilled. Some candidates expressed these ideas in statistical form which was acceptable if they specified that the number was out of 50. Many candidates did not use the answers from Question 3 in the questionnaire to complete their answer. They needed to pick one of the statements and, as in questions one and two, give the number or proportion of workers who agreed with it.
- (iii) The most commonly suggested benefits were higher wages, training and examples of company benefits. Some candidates misunderstood the question and wrote about how the workers would benefit the company. Weaker responses gave vague answers such as 'wages' or 'getting to know colleagues' or suggested unlikely benefits such as free transport.
- (e) The final question which tested knowledge of high technology industries discriminated well. The factor of road, rail and air transport links was a popular and correct choice. However, a significant number of candidates chose large quantities of raw materials rather than the correct factor of links to universities.

Question 2

- (a) (i) Most candidates understood the advantages of using electronic recording instruments. Common answers included quick to use and easy to read, and accurate with less chance of error. Some candidates suggested that electronic instruments were automatic but did not give an advantage of this such as they did not need to be read by a person.
- (ii) Nearly all candidates made the correct links between weather features and measuring instruments.
- (iii) The requirement to draw a traditional rain gauge proved to be quite difficult for many candidates. There was a high omission rate of 11 per cent which suggested that these candidates had not studied weather instruments. However, better responses drew an appropriate diagram and labelled it to show features such as the funnel, measuring container and scale. In better diagrams the rain gauge was shown to be half buried in the ground and labelled to show this. Weaker responses drew a container which could not be recognised as a rain gauge but did gain some credit for appropriate labels such as showing a scale on the container.
- (iv) Candidates generally had more idea of where a rain gauge should be positioned, although 4 per cent did not attempt this question. A range of ideas were suggested and the question differentiated well. Many candidates referred to putting the rain gauge away from trees or buildings and some explained the reason well by reference to interception. Other popular suggestions were to put the rain gauge on grass and away from people or animals with appropriate reasons. Weaker responses described appropriate positions but gave vague explanations such as 'to get accurate figures', or 'so there is no interference' when referring to trees or buildings. Some candidates suggested that the rain gauge should be put on the roof; these candidates appeared to be confusing it with a wind vane or anemometer.
- (v) The question proved to be challenging. Although most candidates recognised a wind vane from the photograph, they needed to explain precisely how it worked. Many candidates were too vague in suggesting that the wind vane moved in the wind rather than explaining that the arrow rotated or spun when the wind blew. Some candidates suggested that the compass points moved rather than being fixed to show location. Many candidates vaguely suggested that the arrow showed the direction of the wind rather than being precise in stating that the arrow pointed to the direction

which the wind came from. However, better candidates did show a good understanding with accurate statements.

- (b) (i)** This was another graph plotting question with a high omission rate, in this case 8 per cent of candidates did not draw the rainfall bar. Most candidates were accurate in drawing the bar but a few drew a very low bar, presumably try to use the atmospheric pressure scale.
- (ii)** Nearly all candidates correctly identified the two atmospheric pressure measurements. Only a few candidates reversed the order of the two figures.
- (iii)** The question was a good discriminator. Most candidates correctly concluded that hypothesis one was incorrect and usually gave the correct relationship between atmospheric pressure and rainfall. Many candidates then chose an appropriate set of paired data to support their decision. Only the better candidates were able to give more detail about the relationship by picking out particular trends from the graph, for example that highest rainfall amounts were recorded when atmospheric pressure was below 1000 mb or that there was no rainfall when atmospheric pressure as 1010 mb or higher.
- (c) (i)** 6 per cent of candidates did not attempt to plot the temperatures on the ESE graph. Whilst most candidates who attempted the plots were accurate, some candidates made the error of plotting the points in the wrong order, i.e. the 10° plot before the 12° plot. Also some candidates did not plot the points in the correct positions above the horizontal axis.
- (ii)** Nearly all candidates gave the correct wind direction of north north west (or NNW).
- (iii)** Most candidates understood the conclusion that hypothesis two was correct and better candidates recognised that warmer winds came from the south thus temperatures were higher, and colder winds came from the north so temperatures were lower. Weaker candidates often suggested one of these ideas. The use of data to support the statements also differentiated between better candidates who gave accurate paired data from two different directions and weaker candidates who gave two temperatures from the same or adjacent directions.
- (d) (i)** Many candidates had difficulty in naming a weather element, despite being given four examples of weather elements in the question. 7 per cent of candidates did not give any answer. Many candidates mistakenly suggested a weather instrument such as anemometer or sunshine recorder which was not credited. Wind speed was the most popular weather element chosen. Some candidates showed no understanding of the weather topic by suggesting ideas such as river or seasons.
- (ii)** The final question tested candidates' knowledge of how to collect weather data through fieldwork. It proved to be challenging for many candidates but did discriminate well. Most candidates named an appropriate measuring instrument for the weather element they had chosen. The most popular choice was wind speed. Many candidates did not focus on how candidates could use the instrument to collect data but wrote about how the instrument worked. Better responses did describe in detail how the instruments could be used, with the use of a wet- and dry- bulb thermometer or hygrometer to measure relative humidity the option which scored most highly. Candidates who chose wind speed or sunshine gave more simplistic answers about how the instrument worked but not how it could be used in fieldwork.

GEOGRAPHY

Paper 0460/42
Alternative to Coursework

Key messages

A few tips to pass on to candidates:

- 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*. Make your decision after weighing up the evidence then state it at the start of your answer. Some candidates provide the correct evidence but seem to forget to write down a decision. If you agree with the hypothesis, do not just repeat the wording of the hypothesis; you need to make a decision about it and state it too. There is no credit for repeating the hypothesis as an answer.
- When giving figures in an answer always give the units if they are not stated for you.
- Take care when adding plots to graphs and use the key provided. Also take care when joining lines up between plots as marks are often awarded for this in addition to the plots. Any numerical answers should be clear e.g. a 4 often looks like a 9; a 2 like a 5, a 0 like a 6, a 1 like a 7.
- Read questions carefully and identify the command word e.g. *Describe*, *Explain...* and also the key words, for example if asked for *data* then statistics are required whereas being asked for *evidence* could involve description as well as statistics.
- When asked to compare, make judgements e.g. *higher*, *lower*, rather than just list comparative statistics. If comparing statistics it is important to use paired data rather than one set on its own. It is also important to indicate which statistics relate to which sites if appropriate e.g. in **Question 1(g)(ii)** when choosing two sites to illustrate variation of shopping environments, it was not enough to say one site is 14 and another is 30 – a better answer is that Site 1 is 14 but Site 8 is 30.
- Check you are using the resources that a question refers you to for evidence or data e.g. Fig. 2.5 and Table 2.2. Remember some resources will be in the Insert not on the examination paper. If you are referred to a map or graph and a table, use statistics from the table rather than try and judge them from the map or graph which can cause inaccuracy.
- Attempt all completion tasks on graphs, tables or diagrams – not all the answers are on lines and in writing. Many candidates are missing out on relatively easy marks this way; in this session this was particularly the case with **Questions 1(b)(iii)**, **1(g)(i)**, and **2(d)(i)**. Note that, where there is a completion task, the instructions are now **emboldened** to try and avoid you missing them out. It is better to use a bold pencil when completing graphs or diagrams so that errors can be erased and corrected; candidates who need to correct answers in ink often create a mess that is difficult to credit.
- Use a protractor and a ruler to improve accuracy and presentation where required. This was particularly the case with the pie graph in **2(e)(ii)**.
- Take into account the marks awarded. Examiners do not expect you to be writing outside the lines provided so do not write a paragraph when only two lines are given – this wastes time.
- As all scripts are now scanned for marking, it would be preferable for candidates to write in black, using a sharp pencil, and make sure any plotting and shading of graphs stands out clearly.
- If you have to write more than the lines allowed, there are additional lined pages at the back of the examination paper to use. Indicate this with a phrase such as (*continued on page 17*). This is very helpful to the Examiner in finding the rest of your answers. Also make sure you have indicated the correct question number on extra pages; in this session quite a few candidates gave an incorrect reference which made it difficult to match to the correct answer earlier in the booklet. There should be no need for you to request additional booklets.

General comments

Most candidates found this examination enabled them to demonstrate what they knew, understood and could do although **Question 1** proved to be more difficult than **Question 2**. Weaker responses overall gained credit on the practical questions, such as drawing graphs, and those of stronger standard 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 than with others. As there are no choices to make, it is difficult to miss sections out – though many candidates do – and on this paper there were a few sections that indicated high percentages of *No Response*. These were especially noticeable where graph completions were required i.e. on **Question 1(b)(iii)**, **Question 1(g)(i)** and **Question 2(d)(i)** – especially as completing graphs proved to be a relatively easy task for candidates that attempted them. If there is a graph on the examination paper, candidates should expect to have to do a plot or plots on it; it would be very unusual if a graph on the exam paper – unlike in the Insert – was already complete. All the instructions for completing graphs and diagrams are **emboldened** so candidates should not miss these.

There may have been a few time issues given a few *No Response* answers at the end of **Question 2** but the booklet format does not allow or encourage over-writing of sub-sections and not many candidates needed to write more than the lines allowed for. Most points for teachers to consider, when preparing candidates for future Paper 42 questions, relate to misunderstanding or ignoring command words and giving plenty of practice using past papers to ensure they read the instructions carefully and complete graphs and other practical activities within the time allowed. Particular questions where candidates do not score well often relate to them not taking time to thoroughly read and understand the resources referred to. Such failings mean that some candidates do not obtain a mark in line with their geographical ability.

Apart from the ongoing issue of some candidates not attempting straightforward completion tasks on graphs and maps, another area to focus on was knowledge of basic and common fieldwork techniques i.e. carrying out a pedestrian count, a land use survey, and measuring a beach profile. All these have appeared regularly in previous papers. Centres should be aware that, although this is an *Alternative to Coursework* examination, candidates will still be expected to show that they know how fieldwork equipment can be used and how fieldwork methodology, demonstrated in the *Route to Geographical Enquiry* in the syllabus, is implemented even if they have only limited opportunities to carry it out in and around the centre.

Question 1

This question was based on fieldwork carried out in a town to delimit the CBD (Central Business District). It involved creating a suitable recording sheet for a pedestrian count, an appropriate method to carry it out, completing an isoline map, describing a method to identify the CBD, analysing a shopping environment survey and discussing ways in which this varies and how a CBD can change. Candidates had to support a *False* decision related to Hypothesis 1 in **Question 1(e)** and draw their own conclusion about Hypothesis 2 in **Question 1(g)(ii)**. The main areas of concern were **Questions 1(d)**, **Question 1(e)**, **Question 1(f)** and **1(g)(iii)** – the latter being the least well answered on the whole paper. **Questions 1(a)**, **1(b)(iii)** and **1(g)(i)** were the best answered. **Question 1(b)(iii)** was, by far, the sub-section with the highest *No Response* on the whole paper.

Question 2

This question was about carrying out fieldwork at a popular tourist beach in south east England. It involved identifying safety hazards and how to reduce them, knowledge of coastal processes, describing a method to measure a beach profile and comparing two beaches, comparing infiltration rates on two different beaches and analysing people's views on coastal protection. Candidates had to make judgements about two Hypotheses; one on whether the beach profile was steeper than the wave-cut platform profile and a second Hypothesis on whether infiltration rates were faster on the beach than on the wave-cut platform – in both cases the Hypotheses were correct. **Question 2(c)(i)** and **2(d)(iii)**. **Questions 2(a)(i)**, **Question 2(b)(i)**, **Question 2(d)(i)**, **Question 2(d)(ii)** and **Question 2(e)(i)** were all well answered although it should be noted that **Question 2(d)(i)** also had, by far, the highest *No Response* data on this question.

Candidates found **Question 1** less accessible than **Question 2** overall.

Comments on specific questions

Question 1

- (a) The vast majority knew that CBD meant *Central Business District*. A small percentage of candidates did not respond to this question.
- (b) (i) Carrying out a pedestrian count or survey is usually one of the most popular and common fieldwork exercises that takes place in secondary schools. Most of the candidates that did attempt this question gained 2 or 3 marks for drawing a recording sheet that mentioned Site, Date/Time, provided a space for tallying (with examples) and a space for a Total count. These candidates also focused on the pedestrian count as required in the question. Some of the candidates tried to create a recording sheet that included a survey of building heights and traffic controls despite the question referring to pedestrian counts only. A few suggested video surveillance and use of cameras. It is vital for candidates to read questions carefully.
- (ii) Candidates who had been taught – or had experienced – how to carry out a pedestrian count did this well. They referred to doing the work in groups and dividing the jobs between candidates e.g. one counting and one recording. They also mentioned deciding how to do the count, for how long and the number of times in a day or doing it over several days. References to the equipment to be used such as a counter, tally chart or stopwatch were less present but occasionally stated and credited. A few described how they would choose sites, ignoring the fact that they had been told that the 30 sites had already been chosen. Too many focused on sampling – either systematic or random – which is totally inappropriate to counting the number of pedestrians passing a point in a fixed time. Maybe they were confused by a tallying system which, while counting all the pedestrians, marks them off after every 5th count? A few gave unsuitable responses including putting marks on or giving tickets to pedestrians so they were not counted twice, or dividing them into perceived age groups. Some ignored the question and wrote about how they would carry out a traffic survey or measure building heights.
- (iii) There were three different types of response to this question. Quite a few candidates did realise that the 200 isoline should be drawn between $\frac{182}{209}$ and $\frac{156}{270}$ and drew that line correctly for 2 marks; others drew the line the wrong side of the 209 plot but correctly through the $\frac{156}{270}$ area gaining 1 mark and there was the third type of response where a significant minority made no attempt to answer it. A small number also drew the line through the existing 209 and 270 points. This straightforward completion diagram had, by far, the highest *No Response* figure on the paper. Presumably the candidates assumed it was complete and did not see the instruction at the top of the page.
- (c) This was well done by candidates who stated that the advantages were that the method of counting would be easy, quick or save time. Many candidates realised that disadvantages included the fact that the storeys might be different heights or that the selection of 5 buildings could be subject to bias. Weaker responses just referred to the method being accurate or not being exact or that the buildings might all have different storeys which are not relevant to how counting storeys might be a good or bad indicator of height.
- (d) The question required candidates to suggest three traffic restrictions that they could have recorded in a town; these needed to be permanent restrictions that limited the movement of traffic. Many candidates just listed any methods of traffic management or control rather than restrictions such as traffic lights (robots), roundabouts, speed limits, temporary closures for events, accidents or roadworks and the use of traffic police – none of these were appropriate. Responses which gained credit wrote, for example, about one way streets, bus or cycle lanes, areas with height/weight restrictions, tolls or congestion charges and no parking areas.
- (e) Candidates appeared to focus their answers more on comparing boundaries rather than comparing areas that were delimiting the CBD by various means; very few compared the areas as evidence to disprove the hypothesis that different methods produced the same result. The strongest responses did compare the area delimited by the buildings that were 3 storeys or more with the area with

more than 300 pedestrians or with any of the other areas. Many responses only focused on one method without any comparison with another area yet, to disprove the hypothesis, it was essential to compare two areas rather than different boundaries in order to confirm that each method did not produce the same result.

- (f) This question stated that these candidates chose a **different** fieldwork method to delimit the CBD but many candidates referred to the three methods mentioned in the previous question i.e. checking whether buildings were high or there were a lot of pedestrians or whether traffic was busy – none of which was relevant to this question. A few responses did note that looking at land use was a different method and did suggest starting by identifying the land use in the area and then deciding which ones were relevant to a CBD thereby helping to delimit a boundary on a map and using a key to denote the land uses which were and were not part of the CBD but these were few and far between. Some responses suggested drawing an isoline around the CBD land uses. Very few gave any details about the creation of a land use map with a key, shading or a scale. This was the least well answered question by candidates on the whole paper with a high *No Response* rate.
- (g) (i) Plotting 17 on the provided axes at Site 12 was done well in most responses and plotted within the tolerance allowed. Although – on this occasion – shading did not count towards the mark, candidates should be aware that the shading used on other bars should be copied rather than shading any plotted bar in any style. Sometimes the correct shading will count towards the mark. Again a high percentage of candidates did not attempt this question yet those that did gained a straightforward mark.
- (ii) Most candidates agreed that the hypothesis was true and most could provide evidence of two sites with different index numbers although they did not always state the site number and just said that the lowest was 14 and the highest was 30. A few did provide spatial evidence of variation e.g. stating that Site 8 with 30 was the highest which was in the CBD and the index decreased as you moved farther away from the CBD, but not many answers gave such an overall view. Some responses just listed each site with its index number thereby producing a long and tedious answer which gained one mark for stating one paired data difference.
- (iii) This question wanted to know how, in carrying out the shopping survey, candidates could have improved its reliability. Clearly the candidates that had carried out the survey had only used one street from north to south as part of the CBD so it could have been more reliable if they had surveyed other streets around the CBD. It would also have been important for candidates to have discussed and agreed on the meaning of the 1–5 criteria in the survey as well as having different groups carry it out at the same time to compare results. Answers along these lines scored well. However many responses described what they would do if they did it again e.g. have more groups, do it at a different time of day, do the survey when the shops were open or repeat the ‘questionnaire’ (it was a survey carried out by candidates not a questionnaire) and ask shoppers to complete the survey. Along with 1(f) this was the least well answered question on the paper.
- (h) It was important, in suggesting how a CBD might change, that candidates did refer to an increase/decrease or less/more in their answers as quite a few just suggested what might change e.g. ‘*the buildings might change*’ which was too vague and did not predict how they might change. The strongest responses suggested that CBDs could expand or decrease, that shops or businesses could increase or decrease and that there could be more high-rise buildings and more pedestrianisation for example. The question did not require suggestions regarding social aspects of the CBD such as increased crime or homelessness, more pollution and traffic or changes in population. Physical changes rather than social changes were required for credit here.

Question 2

- (a) (i) Almost all candidates did well on this starter question; only a small number gave answers other than the correct one which was Hypothermia. Incorrect responses included drowning, cliff collapse and a few gave the '*Likelihood*' number from the table – usually 4 – rather than the hazard associated with it.
- (ii) The correct and common responses that most candidates gave included staying away from the cliff, wearing warm or waterproof clothes and staying together in a group or carry a mobile phone. It was not accepted to suggest wearing a hard hat to avoid cliff collapse as the work was on the beach and so the candidates should not have been going near or on the cliff edge in any case. Vague answers such as wearing suitable/appropriate clothes needed specific examples. A few gave practical engineering solutions to avoiding cliff collapse which were irrelevant to the question such as building a barrier or sea wall near the cliff.
- (b) (i) Linking the erosional process to its definition was done well by most candidates. Almost all responses linked *Solution* to its correct definition beginning '*Acids...*' but a few linked *Hydraulic Action* to the first *Definition* and this was often followed by *Attrition* being incorrectly linked to the *Definition* in the 3rd row which should have been matched with *Hydraulic Action*.
- (ii) Candidates should have used the photograph in the Insert to recognise that there was no protection at X which was exposed to waves but that there was protection from a beach, sea wall and groyne at Y. It was important that candidates did state or describe the protection function of the engineering – a few just stated that there was a sea wall or a groyne at Y without saying what its function was or how it protected the beach. A number of candidates made no reference to X or Y in their answer so it was not possible to credit these when it was not clear whether they were referring to X or Y. And small number confused X with Y giving the reverse answers required.
- (d) (i) Measuring the profile of a beach is a standard fieldwork technique involving ranging poles which are used at a fixed distance or at a break in slope, a measuring tape and a clinometer to measure angles along the transect. Candidates who had experienced this, or had been had taught the technique, did this well often scoring 4 marks halfway through their answer. Many responses only mentioned putting a ranging pole at the cliff edge and at the low water mark, measured this total distance and tried to read an angle from one pole to the other. A number just referred to the equipment they would use and stated that they would measure the profile using this equipment. Many responses showed limited knowledge of the equipment they would use e.g. references to 'sticks', 'measurers', and 'protractors'. A small number seemed to think that one ranging pole was put on one beach and another on the separate wave-cut platform and the angle was taken between them. It is worth noting that several candidates wrote that the clinometer was used to measure the gradient – it does not do this; it measures the angle of the slope which can then be used to help work out the gradient.
- (ii) It is important to note here that candidates will not get credit for copying out the hypothesis word for word if they agree with it – there has to be evidence of a decision that they have made about the hypothesis. Here most candidates did state that the hypothesis was correct and also recognised that the beach profile was shorter and higher therefore making it steeper. While this was true, evidence from Fig. 2.3 was required in the form of data e.g. the beach was 2.2m high but the wave-cut platform was 0.9m high, and the beach profile was 19m long but the wave-cut platform was 24m long or 5m longer. These measurements were essential to get the full 3 marks rather than just giving a valid description. Many did give the comparative height data but not the length data.
- (e) (i) The two plots were accurately marked by almost all candidates that attempted this question however it did have a high *No Response* rate indicating that too many candidates assumed the graph was complete despite the emboldened instruction above it requiring them to '**plot the results**'.
results'.
- (ii) The vast majority of candidates made the correct choice regarding the hypothesis on this question.
- (iii) Clearly any credit for this question needed to support the correct choice in (ii); if candidates had made an incorrect choice then no credit could be awarded in this sub-section as it would be supporting a wrong answer. Most candidates did support their correct choice by stating that the figures for infiltration on the beach were at much higher rates – indeed always higher – than on the

wave-cut platform where infiltration was much slower. A second mark was awarded for providing accurate comparative data e.g. maximum infiltration on the beach was 120 mm per minute as opposed to a much lower maximum figure on the wave-cut platform of 12 mm; or that the beach infiltration was always over 30 mm but the wave-cut platform was never more than 12 mm. Some candidates compared the same horizontal measurement point instead of taking the overall view e.g. comparing 120 mm with 10 mm on measurement D which was not credited.

- (iv) This was done well with most candidates correctly matching the *Groynes...* statement with the *Wave-cut platform...* statement.
- (f) (i) The divided bar graph was well done by a large majority of candidates who plotted 71 very accurately and then added the correct diagonal shading. The only candidates who gained less than 2 marks were those that did not attempt it and those who shaded the diagonal shading in the wrong direction despite plotting it correctly.
- (ii) The pie graph required a plot at 81 per cent going clockwise around the graph in the direction of the key. Most candidates who attempted this managed a plot within the accepted tolerance levels and shaded the two slices correctly in the right order. A few plots were too close to the 80 mark and the smaller slice was shaded with diagonal lines instead of the horizontal lines required for *residents* as illustrated in the key. A few responses incorrectly plotted the graph anti-clockwise thereby having a plot at 89 per cent – 11 per cent from the top – and gained no plotting mark although, if the larger slice was shaded with the correct *visitors* shading, a mark could be gained provided the smaller slice had the correct horizontal lines.
- (iii) While a number of candidates did not attempt this question, it proved it be a very reliable discriminator in that most candidates gained the range of marks from 1–4 depending on how they described and interpreted the statistics for each of the questions illustrated in the Insert. Many responses used terms like *Most/The majority...* and clearly understood that the majority meant over 50 per cent of the people that answered the questionnaire. Some limited credit was awarded for using vague terms such as *Many/A lot...* a more precise use of language was needed. A few mistakenly stated that most or the majority favoured Groynes as a method – this was not true as 38 per cent is not most or the majority – it was however the most popular or preferred option but not a majority choice candidates need to be careful of their use of the term '*Majority*'. A few candidates gave their own opinions instead of judging those of the residents. A number of candidates only listed all the higher percentage figures from each response table despite the question stating '*Refer to the results in Table 2.3 but do not copy them out!*'

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 need making that should improve candidate performance in future. Here 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. If you make an incorrect conclusion to the hypothesis you will gain no credit for the answer.
- When giving figures in an answer always give the units if they are not stated for you.
- Read questions carefully and identify the command word e.g. *Describe, Explain, Suggest*.
- When asked to compare, make judgements e.g. *higher, lower*, rather than just listing comparative statistics.
- If comparing statistics, it is important to use paired data rather than one set on its own.
- Check you are using the resources that a question refers you to, e.g. *Support your decision with evidence from Fig. 1.4 and Table 1.1*.
- Attempt all completion tasks on graphs, tables or diagrams – not all the answers are on lines and in writing. Many candidates are missing out on relatively easy marks by not attempting these questions.
- Take into account the marks awarded. Examiners do not expect you to be writing 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*). This is very helpful to the Examiner in finding your answers.
- When completing graph work use a dark-coloured pencil or pen as scripts are scanned for marking and light colours do not always show up. Always shade bar graphs and pie charts accurately.
- When you think you have finished, check that you have not missed a question out. Some questions are hard to find if they are on pages with a lot of graphs or maps. Make sure you have answered the questions on every page. This applies specially 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 was similar to previous years – with weaker responses 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. Most candidates answered **Questions 2** slightly more successfully than **Question 1**.

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. This is an on-going problem from year to year and has been highlighted in each report to centres. Although there were no significant reports of time issues some candidates do write too much in some sub-sections. Candidates 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 to the use of appropriate fieldwork techniques and equipment. Particular questions where candidates did not score well often related to them not carefully reading the question, for example **Question 2a(iii)** where some candidates wrote about the attractions of an LEDC for tourists rather than reasons for the increase in the number of tourists over 30 years, and **Question 2b(ii)** where some candidates based their

answers only on statistics despite the instruction not to copy them out. As in some previous papers **Question 2e(ii)** required candidates to suggest a suitable investigation to extend their fieldwork. This type of question is frequently included on this paper and is an area which centres should practise with candidates. However, it is not good practice to develop a series of generic improvements or methodology which may apply to all fieldwork, as such suggestions tend to be vague and not worth credit.

Centres need to be aware 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 know appropriate fieldwork techniques even if they have only limited opportunity for fieldwork within the centre. For example, **Questions 1b(i), 1b(ii), 1b(iv), 2b(i), and 2c** focused on specific techniques commonly used in fieldwork. Centres are encouraged to carry out basic fieldwork with candidates, especially using simple techniques which can be done on the school site or in the local area.

Comments on specific questions

Question 1

- (a) Most candidates correctly identified the features of the tropical rainforest vegetation with the appropriate reason for the adaptation.
- (b) (i) There were many good answers, most referring to calculation of an average measurement or being able to identify an anomalous result. Weaker responses referred to obtaining more data but by itself this would not make results more reliable. Also they wrote about results being 'accurate' which gained no credit or repeated the idea of reliability which was mentioned in the question.
- (ii) Nearly all candidates recognised the quadrat from the photograph. A few candidates thought that it showed callipers.
- (iii) Many candidates did not suggest an appropriate weakness. They referred to the fact that it did not produce percentage humidity statistics or suggested that other factors could make the paper turn pink. The best answers referred to the subjective nature of the test and that different candidates would interpret the time taken to change colour differently.
- (iv) There was a high omission rate of 10 per cent which suggested that many candidates were not familiar with such a task. Many candidates who attempted the question scored one or two marks by reference to timing the length of time for water to infiltrate and pouring a measured or specific volume of water onto the soil. Candidates who were familiar with the fieldwork task also described the use of a tube or cylinder into which the water is poured, and that the test should be done at different areas of the site in order to obtain an average result.
- (c) (i) Nearly all candidates correctly chose site 3.
- (ii) Again nearly all candidates identified the correct site and measurement.
- (iii) Most candidates calculated the correct infiltration time. A few candidates made the wrong calculation from the data and others failed to show their calculation.
- (d) (i) Most candidates plotted the three pieces of information correctly. A few candidates were inaccurate in their plots of time and reversed the shading in the divided bar.
- (ii) The question which required a conclusion to be made to hypothesis one provided good differentiation. Most candidates made the correct decision that the hypothesis was false. Better responses described the correct relationship that where humidity is greater vegetation cover is lower. Many candidates gave paired data from two appropriate sites to support their decision. In contrast weaker responses ignored the variables given in the hypothesis and focused incorrectly on the time taken for the cobalt chloride paper to turn pink.
- (iii) The question also provided good differentiation. Having been told that hypothesis two was incorrect; candidates had to support the decision with evidence. Better responses contrasted infiltration time and vegetation cover at sites A and C and supported their idea with paired evidence from the two sites.

- (e) Good differentiation was again achieved. Weaker responses made irrelevant references to roads, rivers and height. They also referred to the different percentage of vegetation at the two sites but did not elaborate. Most candidates recognised that site A was more developed for tourism, but only the best responses developed this idea by reference to soil compaction. Similarly most candidates stated that there was less development but only the best ones explained how this related to the rate of infiltration.
- (f) (i) Many candidates correctly identified a bar graph as most suitable to show the information. Although a significant number wrongly selected one of the alternatives in roughly equal proportions.
- (ii) Candidates suggested various reasons for the variation in the number of plant species. Some referred to tourism at site A or the development of the coffee plantation at site B but did not always gain credit because they failed to link the development with removing species or destroying vegetation. Other candidates correctly identified other variables between the sites, especially altitude, soil type and humidity. Weaker responses suggested the presence of a road or river but these were unacceptable as they do not affect plant species.

Question 2

- (a) (i) Most candidates identified the correct number of tourists visiting Mauritius in 2005.
- (ii) Again most candidates identified the correct time period. A few candidates gave a longer time period such as from 2005 or up to 2010 but such answers were not accurate enough to be credited.
- (iii) The question differentiated well. Many different reasons for tourism were suggested but many did not explain why the number of visitors had increased. The best responses did refer to cheap flights, paid holidays and more leisure time as well as the growth of internet research and bookings. Many candidates suggested the development of tourist facilities but did not specify what these were. Some candidates gave vague suggestions such as 'better infrastructure' and 'better access' and 'more developed' which did not gain credit. Many candidates suggested general reasons which encourage tourism such as attractive scenery, cheap costs in an LEDC, and interesting culture which would not explain an increase in tourist numbers.
- (b) (i) Many candidates realised that only tourists needed to do the questionnaire for hypothesis one. They explained that there was no point asking local residents as the questionnaire was targeted at tourists so residents' answers would be biased or irrelevant. Some candidates incorrectly suggested that that it was suggested so that answers from tourists and residents could be compared.
- (ii) Many candidates identified that Europe provided the majority of tourists and that Australasia or South America provided the least. A few candidates compared numbers from different continents which was acceptable, but the use of statistics was not.
- (iii) Nearly all candidates correctly drew the two bars. However, there was an omission rate of 3 per cent. A few candidates made errors through imprecise plotting or misreading the scale.
- (iv) Most candidates scored two marks, although some only scored one mark because they plotted the line in the wrong position or reversed the segments. A few candidates just labelled the segments rather than shading them and completing the key as instructed.
- (v) The question was challenging but also proved to be a good discriminator. Most candidates made the correct conclusion that the hypothesis was correct and gained credit for comparing statistics about the physical and human attractions. A common error made by a significant number of candidates was to refer to tourist numbers rather than the number of visits. The tourist number was 100 who did the questionnaire but they visited more than one attraction each.

- (c) The question about sampling techniques is frequently included in this paper, usually with mixed results. The relatively high omission rate of 4 per cent again indicated that some candidates are not familiar with the three sampling methods included in the syllabus. However, many candidates did name an appropriate sampling technique and usually scored one mark for describing it. Systematic and random sampling were often described rather than stratified sampling. Many candidates who chose random sampling were able to describe the use of a random number generator or picking numbers out of a hat in order to produce an order to ask people rather than just saying they would ask the next person they saw.
- (d) (i) Again there was a high omission rate of 7 per cent on a graph completion question. Candidates who did draw the bars were usually accurate, especially in plotting the index score for improved transport. Some candidates misread the scale and so plotted one or both bars incorrectly.
- (ii) Most candidates identified the correct statement to support hypothesis two. However, the two distracters were a frequently chosen. Candidates need to read and interpret the statements carefully. The first statement is incorrect because there are equal numbers of benefits and disadvantages (8). The second statement is incorrect because the total index score for benefits and disadvantages is the same (600). The third statement is correct because the answers to question four in the questionnaire stated that overall 87 per cent of people thought that the benefits of tourism were greater compared with 13 per cent who thought that the disadvantages were greater.
- (e) (i) Most candidates only suggested that there would be more traffic on the roads. Fewer candidates suggested a second idea such as the roads would be too narrow to cope with the increase in traffic, or that tourist traffic would be seasonal.
- (ii) The final question required candidates to describe another fieldwork investigation. The topic was to investigate the impact of traffic congestion. Some candidates described more than one investigation which was acceptable as the question did not specify one investigation. The most commonly described fieldwork method was a traffic survey or count at different points on the island. A second popular method was another questionnaire for local residents which could ask about impacts on them. The question allowed more able candidates to give details about how these two investigations would be conducted and they scored well. Weaker responses did not provide specific details of methodology but made vague suggestions about counting vehicles and asking people what they thought about traffic. A few candidates suggested different methods such as timing journeys in different seasons and comparing pollution or noise levels. Although these investigations were acceptable there was little detail as candidates had clearly not undertaken such fieldwork.