

GEOGRAPHY

Paper 0460/11

Paper 11

Key Messages

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

- ensure that the examination rubric is followed correctly, answering 3 of the 6 questions only.
- *note that from May/June 2016 candidates will need to answer one question from each of the three syllabus theme (i.e. **question 1 or 2, question 3 or 4, and question 5 or 6**).*
- answer all parts of the chosen questions as questions requiring the completion of a map or graph are omitted by some candidates.
- read the question carefully – it is important to spend time doing this. If it helps underline command words and words which indicate the context of the question.
- know the meaning of and respond correctly to command words used in questions. In particular know the difference between ‘describe’ and ‘explain’.
- identify the correct focus specified in the question stem – e.g. causes or impacts, natural or human environment.
- learn the meanings of key words in order to be able to define and accurately use geographical terminology. When defining words or phrases candidates should not simply repeat a word or words as part of their definition.
- describe a distribution from a map and name features to support their answer.
- describe the location of a feature or place, supporting this by giving distances and directions from named places.
- use the mark allocations and answer space provided in the question and answer booklet as a guide to the length of answer required and the number of points to be made. Some candidates write over long answers to questions worth few marks at the expense of including detail in those requiring extended writing.
- write as clearly and precisely as possible avoiding vague, general statements.
- write developed ideas wherever possible where extended writing is required in the final two parts of each question, ensuring that ideas are developed with the correct focus.
- perform basic skills such as interpreting graphs, photographs and maps of various types, using accurate statistics or referring to specific features as appropriate to support ideas.
- approach questions which ask for comparison by writing comparative statements rather than writing discrete comments about each item being compared.
- avoid direct lifts from resource materials when a question asks for interpretation of ideas.
- have a range of case studies so that appropriate ones can be chosen for the topics tested and ensure they are aware of the scale of the question – e.g. city or country or area.
- include place specific information in case studies, while avoiding writing a long introduction to the question with place detail at the expense of answering the question.
- when using the extra space at the back of the question and answer booklet make it clear that the answer is continued and indicate the number of the question accurately.

General Comments:

The examination was considered appropriate for the age and ability range of candidates and it differentiated effectively between candidates of all ability levels. As always some excellent answers were seen. Most candidates were able to make an attempt at their chosen questions, however, some candidates found it difficult to interpret tasks and write effective responses to some or all questions. Some candidates disregarded the rubric by answering four questions, however, it was rare to encounter papers where all questions had been attempted.

Question 1 was the most popular and **Question 3** was the least popular and the least well answered overall. There were many good attempts at all the case study questions, the final part of each question particularly aging population, deforestation and impacts of manufacturing industry on the natural environment. High quality answers in these case studies were characterised by a range of developed ideas and occasionally some place detail. Some weaker responses tended to be generic developments of ideas with little place detail to support them whilst others were characterised by the use of simple statements. In some cases the detail provided was largely irrelevant to the question being asked, including long and unnecessary introductions, some of which occupied almost all the answer space.

Case studies require place specific place information to allow access to the highest level. This requirement can vary between questions – a country (**Question 1**) or an urban area for example (**Question 2**). Some candidates did not carefully consider their choice, limiting their mark by inappropriate choices, for example choosing a country rather than an urban area or vice versa. Where an 'area' is required (**Questions 4 to 6**) choosing a country usually tends to be unacceptable as this is likely to be too large a scale.

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

Comments on Specific Questions

Question 1

- (a) (i) Probably 50% of candidates answered correctly with some being just outside the tolerance.
- (ii) Most were able to get one or both of these correct. Some lost marks by referring to economically active in the first part and in the second part by referring to 'percentage birth rate' or similar rather than '0–4'.
- (iii) Most candidates were able to score something here, often it was for greater percentage in Barbados or for reference to more even decline through the age ranges in Jamaica. Many tried to compare individual bars or referred to either males or females (sometimes using statistics) rather than presenting an overview.
- (iv) Most candidates scored here for either lowering of death rate reasons or lowering of birth rate. Some excellent full credit answers were seen but others were vague with references to living standards or rich/poor countries without any specific idea.
- (b) (i) Almost all candidates scored the full credit available here . However, a few missed out the idea of family planning being 'compulsory' and lost that mark.
- (ii) This question was generally not well answered. Many answers contained simplistic statements such as 'pay them to have children', 'ban contraceptives', etc. rather than reflecting any real or plausible policies. A few good France and Singapore answers were seen although an example was not needed here, just the policies.
- (c) More candidates developed their ideas of problems than benefits and those who gained Level 2 and beyond did so usually through developing ideas of dependency and cost to the taxpayer. Many candidates made little attempt to develop simplistic ideas but others did so fairly well and linked them well. Few gained Level 3, however, as there was little place specific detail in responses.

Question 2

- (a) (i) The vast majority of candidates answered this correctly.
- (ii) Lots of good ideas were seen here, particularly relating to distance, though the difficulty of travelling across international/regional boundaries was a focus of some incorrect responses. Relatively few made the obvious point about the proximity of Ho Chi Minh City to the Central Highlands though many successfully speculated about the variation in pushes between the two regions.
- (iii) Most candidates understood what was required here and some gained full credit. Others lost out because of vague answers often referring to ideas such as 'facilities, services, standard of living or opportunities'.
- (iv) Most candidates were able to score some marks here and obviously understood age/sex structure. A good understanding was shown of the importance of work as a factor in migration and the role of culture in determining family roles in many LEDCs. Some commented that it could be people of any age and sex, which is true, however, such candidates did not consider the overall impact on population pyramids of migration which indicates that it is still largely dominated by economically active males.
- (b) (i) Most candidates recognised more rapid growth of Hanoi, some supporting it with appropriate statistics however, some did not compare and just listed statistics.
- (ii) This question differentiated well with some excellent ideas seen and overall some high scoring answers whilst others focussed too narrowly on one idea, often crime/civil unrest which limited their marks. Some vague responses were also seen such as 'need more space, more services'.
- (c) The best answers related to solution of traffic problems, though a few good squatter settlement answers were seen. It was good to see local examples being used by many. The expected differentiation was achieved with relatively few Level 3 answers, however, the use of local examples tended to assist some candidates in recalling place detail. Weaker responses were either very simple or focused just on one idea being developed fully at the expense of anything else. This was particularly true of answers choosing crime as a problem.

Question 3

- (a) (i) Most answered correctly.
- (ii) About half of all candidates answered correctly, those who mentioned hard rock usually went on to score the second mark. However, there were lots of irrelevant ideas which were probably just guesses.
- (iii) Mainly correct ideas seen but some wrong answers seen with depositional features often mentioned.
- (iv) Some candidates knew the processes and scored well though many did not, either mismatching the name and definition or just writing generically.
- (b) (i) Most gained some credit here, usually for increase in size of beach material from sea to cliff, though many found the ideas difficult to express. The word 'shingle' was not seen or used much, though most knew sand and pebbles and were able to describe how these changed.
- (ii) Many just seemed to guess here though a few perceptive candidates referred to ideas such as rock type, wind strength/direction, wave type and the influence of longshore drift. Many incorrectly referred to 'tides/currents or amount of waves'.
- (c) Many candidates referred to formation of sand dunes as a result of marine rather than aeolian processes. Others did refer to wind but gave simplistic statements rather than developing or linking ideas such as deposition and trapping of materials by obstacles, or colonisation and anchoring of dunes by vegetation such as marram grass.

Question 4.

- (a) (i) Mostly answered correctly.
- (ii) Most candidates scored at least one mark for references to support and/or absorption of nutrients/water.
- (iii) Some candidates just copied words from Fig 7 and others wrote about climate, however in contrast better candidates noted correct features and all mark scheme ideas were seen. Tall, evergreen, dense, different species and layered were common correct ideas.
- (iv) Some good references were seen to food supply and varied habitats though it was surprising that more candidates did not focus on rainfall, temperature and lack of seasons.
- (b) (i) Generally candidates interpreted the graph quite well – most could spot the trends and many quoted appropriate supported statistics, though it was rare to see the full three marks awarded.
- (ii) Varied answers were seen here with some full marks awarded from a variety of mark scheme ideas, others focusing too narrowly or looking just at climatic impacts rather than the tropical rainforest ecosystem.
- (c) The full range of marks was seen here. Good Level 2 answers developed the points often by reference to the economic reasons for deforestation or the needs of the expanding population. Simple Level 1 answers tended to be lists of uses of the wood and/or deforested land. Level 3 answers were unusual though some specific references were seen, e.g. to Trans-Amazonia Highway. Too many candidates gave 'Brazil' as an example of tropical rainforest which was too broad, limiting their marks to MAX 5, though in reality this would have had little impact as most of the answers from such candidates were Level 1 or low/mid Level 2 responses anyway.

Question 5

- (a) (i) Most correctly identified 'secondary'.
- (ii) Most scored one or both marks as they were able to pick out similarities and differences. The rapid decrease of Japan in 2009 was misinterpreted by some candidates.
- (iii) Cheaper labour was the most frequent idea mentioned though all other mark scheme ideas were seen. Weak answers such as 'more profit/it's cheaper', 'expand the business' and 'no need to export' were common and many incorrectly mentioned 'raw materials'.
- (iv) Job creation and economic growth were mentioned by many candidates though few scored more than half of the marks available. Some misconceptions that China would 'earn all the profits from the industry' were seen likewise that people in China would 'now have cars whereas in the past they didn't' neither of which scored any marks.
- (b) (i) Many scored full marks here though mistakes were made by some, the most common ones being 'furnace' for a process and 'glass is cut into lengths' as an output.
- (ii) A few very good responses were seen covering several factors and showing clear understanding. Many weak answers showed little or no understanding of factors affecting industrial location. Transport links, labour availability and raw material availability were the most common correct answers but few developed the ideas well or referred to a wide range of factors for full marks.
- (c) Many answers were at Level 1 with simple ideas, although some development was seen particularly ideas relating to clearance of vegetation and water/atmospheric pollution and their impacts on habitats/food chains/wildlife. Some candidates referred to global warming and acid rain when developing the idea of air pollution, which was acceptable as the question did not specify the 'local' natural environment. Some however wrote about impacts on people which were irrelevant and gained no credit.

Question 6

- (a) (i) The majority of candidates correctly plotted the information on the scattergraph.
- (ii) Most candidates gained at least 1 mark here though many did not use evidence to get the second mark.
- (iii) Varied responses were seen here though full marks were not seen very often. Ideas of 'skills, demand for services and high paying jobs' were the most frequent responses seen though many candidates just wrote about one idea.
- (b) (i) To some extent most candidates could interpret this unusual resource and compare the information shown effectively. Many scored full marks and most scored something.
- (ii) Ideas of seasonal unemployment/lack of income were well understood by many. While many referred to problems caused by tourism in National parks (e.g. litter, traffic, etc.) many did not relate these to peak season/seasonal changes idea stated in the question.
- (iii) This question was generally well answered providing the natural environment focus was recognised. Answers relating to people were not relevant and vague references to, e.g. noise, litter were not credited unless they specified the impact on the natural environment. Candidates could generally provide more negatives than positives.
- (c) Almost all candidates chose suitable examples and it was good to see the use of local examples though Level 1 lists were far too common. Few candidates developed the description as required and, whilst many gave examples which were place specific, the lack of descriptive detail resulted in relatively weak answers.

GEOGRAPHY

Paper 0460/12

Paper 12

Key Messages

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

- ensure that the examination rubric is followed correctly, answering three of the six questions only. *Note that from May/June 2016 candidates will need to answer one question from each of the three syllabus themes (i.e. **Question 1 or 2, Question 3 or 4, and Question 5 or 6**).*
- answer **all** parts of the chosen questions. Questions requiring the completion of a map or graph are omitted by some candidates.
- read the question carefully – it is important to spend time doing this. If it helps, underline command words and words which indicate the context of the question.
- know the meaning of and respond correctly to command words used in questions. In particular, know the difference between ‘describe’ and ‘explain’.
- identify the correct focus specified in the question stem – for example, causes or impacts, natural or human environment. Some candidates do not respond to key words such as CBD (**Question 2(c)**), relationship (**Question 4(b)(ii)**) or political (**Question 5(b)(iii)**), rendering their answers largely irrelevant.
- learn the meanings of key words in order to be able to define and accurately use geographical terminology. When defining words or phrases, candidates should not simply repeat a word or words as part of their definition.
- describe a distribution from a map and name features to support their answer.
- describe the location of a feature or place, supporting this by giving distances and directions from named places.
- use the mark allocations and answer space provided in the question and answer booklet as a guide to the length of answer required and the number of points to be made. Some candidates write overlong answers to questions worth few marks at the expense of including detail in those requiring extended writing.
- write as clearly and precisely as possible avoiding vague, general statements.
- write developed ideas wherever possible where extended writing is required in the final two parts of each question, ensuring that ideas are developed with the correct focus.
- perform basic skills such as interpreting graphs, photographs and maps of various types, using accurate statistics or referring to specific features as appropriate to support ideas.
- approach questions which ask for comparison by writing comparative statements rather than writing discrete comments about each item being compared.
- avoid direct lifts from resource materials when a question asks for interpretation of ideas.
- have a range of case studies so that appropriate ones can be chosen for the topics tested and ensure they are aware of the scale of the question – for example, city or country or area.
- include place-specific information in case studies, whilst avoiding writing a long introduction to the question with place detail at the expense of answering the question.
- make it clear, when using the extra space at the back of the question and answer booklet, that the answer is continued and indicate the number of the question accurately.

General Comments

The examination was considered appropriate for the age and ability range of candidates and it differentiated effectively between candidates of all ability levels. As always, the most able and well prepared candidates performed very well across the paper and some excellent answers were seen. Most candidates were able to make a genuine attempt at their chosen questions; weaker candidates, however, found it difficult to interpret tasks and write effective responses to some or all questions.

Some candidates disregarded the rubric by answering four questions; however, it was rare to encounter papers where all questions had been attempted. Usually, if all questions had been attempted they were all very weak. Some stronger candidates, however, crossed out several lengthy answers, wasting time which could have been spent working on their chosen answers.

The handwriting of some candidates was difficult to read. Whilst it is accepted that candidates are writing under time pressure, it has to be noted that few, if any, candidates actually seemed to be short of time. It is vitally important that all answers are legible, as answers which cannot be read cannot earn marks.

Question 1 was the most popular and **Question 5** was the least popular and the least well answered overall. There were many good attempts at all the case study questions, the final part of each question, particularly population measures, deforestation and protecting the natural environment. High quality answers in these case studies were characterised by a range of developed ideas and occasionally some place detail. Some weaker responses tended to be generic developments of ideas with little place detail to support them, whilst others were characterised by the use of simple statements. In some cases, the detail provided was largely irrelevant to the question being asked, including long and unnecessary introductions, some of which occupied almost all the answer space.

Case studies require place-specific place information to allow access to the highest level. This requirement can vary between questions – a country (**Question 1**) or an urban area, for example (**Question 2**). Some candidates do not carefully consider their choice, limiting their mark by inappropriate choices, choosing a country, for example, rather than an urban area or vice versa. Where an 'area' is required (**Questions 3 to 6**) choosing a country usually tends to be unacceptable as this is likely to be too large a scale.

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

Comments on Specific Questions

Question 1

- (a) (i) Most answers were correct, although some candidates inexplicably missed out the task.
- (ii) This was generally well answered, although weaker candidates were unclear how to express the idea of subtraction, some not making it clear that the death rate was subtracted from the birth rate.
- (iii) Most candidates recognised that growth is greater in the north, and supported this by suitable comparative data from the key, though a few did not compare the north and south as required. Few candidates named individual states with supporting data or identified anomalies, of which there were several. Common errors were answers given in terms of population density or absolute size, and/or referring to cities rather than states.
- (iv) Many candidates identified a range of reasons from the mark scheme. Weaker answers tended to refer vaguely to 'services', 'facilities', 'better infrastructure' or 'crime' whilst some just focused on one issue rather than identifying several reasons. An error made by some candidates was to explain what positive and negative migration were and refer only generically to 'push and pull factors' rather than giving examples of either. Some candidates gave opposite pushes and pulls for which no additional credit was given.
- (b) (i) This was a good discriminator. There were some excellent answers which contrasted the growth rates in the two periods with accurate statistics throughout. A significant misunderstanding was to refer to birth rates and death rates with detailed statistics but failing to link these indicators to growth.
- (ii) There were many good answers which identified a range of appropriate reasons. The emphasis was usually on improving health care, sanitation and diet.
- (c) There was a range of case studies and the focus of answers should have been on describing the policies rather than writing about their effects which some candidates included. Whilst anti-natalist policies, such as those deployed in China, were dominant, there were some relevant answers about Russia, France, Sweden and African countries such as Botswana, with some of the chosen case studies referring to appropriate pro-natalist policies. Some answers gave excellent details;

others, however, were somewhat vague with little more than generic references, and in answers about China sometimes incorrect details were given. References to migration policies were also acceptable and a minority of candidates included such ideas in answers about countries such as Australia and Canada, though most tended to be simplistic.

Question 2

- (a) (i) Candidates met with varied success in writing their definition with many finding it difficult to express. A common error was to refer to an urban area as being 'more developed' or defining the CBD alone rather than an urban area in general.
- (ii) Better answers used the evidence in Fig. 3 well, scoring both marks, whilst common errors were to focus on roads and/or not refer to both the inner city and the outer suburbs.
- (iii) This was a good discriminator. Weaker candidates did not use the evidence in Fig. 3 to guide their answers, whilst more perceptive answers usually referred to residential areas, low cost land and accessibility. Some candidates did not seem to appreciate that the reason for location would be from the shop owner's perspective, rather than that of the customer.
- (iv) Whilst relevant, answers usually concentrated on the large area, parking facilities and occasionally offices, hi-tech industry or specific services. Many candidates wrongly focused on 'location' rather than 'characteristics'.
- (b) (i) Those candidates who were familiar with the terms 'order', 'sphere of influence' and 'frequency' scored well. Overall, however, this question was not well answered. Many candidates did not have the knowledge to answer the question and others concentrated on differences within the row of shops rather than the row of shops as a whole.
- (ii) This was a good discriminator. Many different types of shop were suggested, though occasionally candidates did not identify a type of shop or chose one which was already there. Better answers used the photograph and were guided by the large size of the premises, windows for display, complementary shops, and the large number of potential customers to make an appropriate suggestion. Answers which used terminology such as 'sphere of influence', 'threshold population' and 'convenience goods' were the most impressive, whilst the weakest ones suggested uses which were more appropriate for a premises in a large CBD rather than a small row of shops in the outer suburbs. Some candidates gave a good suggestion for a shop, but then discussed how it would benefit the consumer rather than the shop owner, whilst others wrote about general locational factors rather than considering the actual unit available.
- (c) The best case studies tended to focus on traffic congestion and air pollution, in particular ones using examples well known to the candidates. Although case studies were from many countries, New York and Harare were the most common. Many weaker candidates identified problems in simple terms, but did not develop either the problem or why it occurred in what were generic responses gaining Level 1 marks. Some answers drifted into urban problems in general, including squatter settlements, rather than concentrating on problems in the CBD.

Question 3

- (a) (i) Wording used varied, with 'edge of plates' and 'where two plates meet' being the most common; however, most candidates were able to convey the correct idea. Common errors were to refer to 'the edge of continents' or 'where volcanoes occur'.
- (ii) Many candidates drew two correct arrows showing that they were familiar with the type of plate movement at their chosen boundary.
- (iii) If candidates knew the direction of plate movement, they usually gained credit for referring to the gap or magma rising. A significant proportion mixed up the direction of movement and wrote about plates converging rather than diverging.
- (iv) Similarly some candidates wrote about divergence here. Many of the correct responses, however, included impressive details about subduction, destruction of crust and build-up of pressure.

- (b) (i) Most candidates used Fig. 6 effectively to suggest appropriate effects.
- (ii) This was another good discriminator with most candidates making at least one relevant point, whilst others included, and in some cases developed, a range of appropriate ideas, such as building strength, earthquake-proofing and preparation/education about what to do in an earthquake. Two common errors were reference to prediction and population density.
- (c) The most popular areas chosen were Kobe and Haiti. Whilst Haiti is a country, it was deemed acceptable as Haiti is small; 'Japan' was not precise enough as an alternative to 'Kobe'. Similarly Afghanistan, New Zealand and Turkey needed to be more precise in terms of the part of the country where the earthquake occurred.

Having chosen an appropriate example, some wrote fluently and in detail about the causes of the specific earthquake they had selected but many wrote simple accounts in general terms at Level 1. Many candidates wrote about the effects of their chosen earthquake rather than the cause as required, thereby gaining no marks.

Question 4

- (a) (i) Nearly all candidates identified Paraguay correctly.
- (ii) Most candidates were able to score at least one mark by referring to the location on or near the Equator or between two relevant lines of latitude. Common errors were for candidates just to refer to a specific latitude, use inappropriate descriptions like 'above' and 'below' or totally ignore the lines of latitude.
- (iii) Generally this question was well answered. If candidates referred to each feature as 'high' they scored three marks. Some answers were overcomplicated by unnecessary statistics, for example, using them to suggest that there was great variation in temperature and humidity when there was little range of temperature or humidity there.
- (iv) Whilst there were a small number of excellent responses referring to the position near the Equator and the consequent processes resulting in large amounts of heat and rainfall all year round, many candidates wrote about the properties of the rainforest vegetation rather than the climate.
- (b) (i) Descriptions varied in quality. Some candidates wrote what they had learned about typical rainforest vegetation rather than what they saw in the photograph, whilst others strayed into describing adaptations.
- (ii) This was a good discriminator. Weaker candidates did not focus on the tropical rainforest and wrote in general terms about plants needing water and heat to grow, or suggested the problems of climate for growth, whilst other candidates made excellent references to the ways in which the vegetation of the rainforest is determined by specific climatic features. Answers most commonly gained credit for explanations of the dense vegetation and the 'evergreen' nature, along with references to features such as drip-tip leaves and tall trees. Many candidates referred to buttress roots without relating this to the climate.
- (c) There were some excellent explanations of deforestation which suggested a variety of reasons, with stronger candidates developing their ideas, typically by reference to economic benefits, whilst weaker candidates simply suggested undeveloped ideas listing the use of the wood or the deforested land at Level 1. Only a small number gave place-specific references, usually about Borneo or Amazonia.

Question 5

- (a) (i) There was a varied level of response. Many candidates identified 'commercial' but were incorrect in their second characteristic or only selected one word.
- (ii) Whilst there were some accurate responses, many candidates did not know what intensive farming is, a common misconception being that it involves a large area of land.

- (iii) Whilst most candidates were able to score three marks for identifying three appropriate processes, others mixed up inputs and processes, whilst some went beyond processes which occur on the farm, referring, for example, to transporting or selling produce.
- (b)
- (i) This was another good discriminator. Some candidates used compass directions well but others gave weak descriptions and/or used phrases such as 'on the edge', 'at the bottom' and 'up at the top'.
 - (ii) This question required candidates to use the information provided to suggest reasons for the variation in land use in Bosnia-Herzegovina; however, many candidates gave generic responses. Those candidates who did recognise the link between land use and relief and/or water supplies and related it to information in Figs. 8A and 8B were able to score marks, but few developed their ideas in order to make explanatory points.
 - (iii) The term 'political factors' was not well understood overall. Where marks were scored, it was usually for reference to the impact of conflicts and the government acquiring farmland for other purposes. Few candidates had any real knowledge of the impact of government policies such as subsidies and quotas.
- (c) For many candidates who chose this question, this was their highest scoring section though relatively few included relevant place-specific detail. Whilst many candidates named a whole country rather than an area, many candidates developed their ideas well, particularly about the effects of drought on farming, with stronger candidates writing about its effects on both crops and animals. Other good references that were included were to flooding and soil erosion. Some weaker candidates focused too much on why areas have low productivity normally, such as low rainfall, but this did not address the issue of food shortage. A few responses ignored natural factors and included others such as the impact of wars and conflicts, whilst some described the consequences of the food shortage and/or government solutions rather than writing about why there are food shortages as required.

Question 6

- (a)
- (i) Many candidates did not define both 'atmosphere' and 'pollution' so did not gain credit. As a general rule, they should be encouraged to re-word all italicised words when giving a definition.
 - (ii) Many candidates scored two marks for ideas about fumes from machinery and methane from grazing animals, though others made vague references to 'cows' and 'tractors' and 'chemicals' which needed to be elaborated.
 - (iii) This was a good discriminator. Good candidates described the process in detail and included reference to specific greenhouse gases and their effects. Many candidates incorrectly referred to the ozone layer and confused global warming and ozone depletion.
 - (iv) There were many good answers with a range of valid ideas which showed an excellent understanding of this issue. Weaker candidates gave extreme answers such as 'people will be wiped out' and suggested that the 'Poles will melt' or vaguely referred to it being 'too hot' or 'floods occurring'.
- (b)
- (i) Most candidates correctly identified three sources of pollution, though two common errors were making reference to 'industrial infrastructure' and including information about oil and gas in more than one idea.
 - (ii) This was another good discriminator. Where candidates used the information in Fig. 10, they tended to score well. There were good explanations about the effects on fish and subsequently on people's health or income.
- (c) Many different case studies and ideas were used at a variety of scales, the most common being about stopping poaching, creating conservation areas and preventing air or water pollution. Better candidates developed ideas about one area, whilst weaker answers listed simple or generic ideas at Level 1 without any real detail or precision. Some candidates focused on the urban environment rather than the natural environment, thus limiting potential credit, whilst the best answers typically identified a national park or game reserve, such as the Kruger or Masai Mara, and focused on ideas relating to protecting wildlife and vegetation.

GEOGRAPHY

Paper 0460/13

Paper 13

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The handwriting of some candidates was difficult to read. Whilst it is accepted that candidates are writing under time pressure it has to be noted that few, if any, candidates actually seemed to be short of time. It is vitally important that all answers are legible, as answers which cannot be read cannot earn marks.

Question 1 was the most popular and **Question 3** was the least popular. There were many good attempts at all the case study questions, the final part of each question particularly problems of an ageing population, formation of waterfalls and impacts of a drought. High quality answers in these case studies were characterised by a range of developed ideas and occasionally some place detail. Some weaker responses tended to be generic developments of ideas with little place detail to support them whilst others were characterised by the use of simple statements. In some cases the detail provided was largely irrelevant to the question being asked, including long and unnecessary introductions, some of which occupied almost all the answer space.

Case studies require place specific place information to allow access to the highest level. This requirement can vary between questions – a country (**Question 1**) or an urban area for example (**Question 2**). Some candidates do not carefully consider their choice, limiting their mark by inappropriate choices, for example choosing a country rather than an urban area or vice versa. Where an 'area' is required (**Question 2, 4 and 6**) choosing a country usually tends to be unacceptable as this is likely to be too large a scale although **question 4** in this case asked for a country or area.

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

Comments on Specific Questions

Question 1

- (a) (i) Most candidates understood 'growth of less than 0%' and answered correctly. However, some stated incorrect ideas such as low or slow growth or more dying than being born.
- (ii) Quite well answered overall, many candidates referring to a specific country or North Asia/Eastern Europe the vast majority scored at least 1 mark with many scoring 2.
- (iii) Most candidates gained credited either for greater percentage in Africa or for more variation in Africa, with supporting data.
- (iv) Most candidates scored well here and displayed a good understanding of reasons for a combination of lowering of death rates or reasons for high birth rates. Many scored full marks.
- (b) (i) Many candidates interpreted the graph well and provided good comparisons without using statistics as instructed.
- (ii) This question differentiated well with some excellent understanding shown of pro and anti-natalist policies by better candidates. References to anti-natalist policies were generally more impressive than pro-natalist with good details on China's one child policy predominating. Weaker answers on pro-natalist contained simplistic statements such as 'pay them to have children', 'ban contraceptives' etc rather than reflecting on any real or plausible policies. Some better Singapore answers were seen here too. However, an example was not needed here, just the policies.
- (c) There were many impressive answers seen here with many candidates getting into and beyond Level 2, usually through developing their ideas of dependency and cost to the taxpayer. Whilst weaker candidates made little attempt to develop simplistic ideas, many others did so, and linked ideas together well. Relatively few got into Level 3 however as there was little place specific detail included.

Question 2

- (a) (i) The vast majority of candidates correctly plotted the information on the scattergraph, though some did misread the scale for population.
- (ii) Most candidates scored at least 1 mark and many used evidence to gain full credit.
- (iii) Many correct answers were seen here though some appeared to not appreciate that settlement X was very small and many incorrectly ticked 'department store, bookshop and university'.
- (iv) Most candidates were able to gain credit here and obviously understood the link between settlement size/accessibility and service provision. The question differentiated well with stronger candidates developing ideas relating to both size and accessibility. Some attempted to use appropriate terminology such as threshold population and sphere of influence which was pleasing to see.
- (b) (i) The vast majority of candidates were able to divide the bar correctly and score full marks.
- (ii) Many candidates missed the instruction to 'explain why' and simply described the differences which the question did not ask for so therefore they didn't gain any marks. Many of those who had read the question properly produced some very perceptive responses, especially relating to frequency of purchase and availability of services of different types.
- (c) Whilst some excellent responses were seen there were too many general descriptions of transport provision, especially public transport, and such answers were not high scoring. The question asked for a description and explanation of 'the pattern of transport routes' and this was only addressed effectively by a relatively small number of candidates.

Question 3

- (a) (i) Mostly correct though some candidates selected 'levee' rather than 'flood plain' and some chose one feature only.
- (ii) Most candidates correctly identified 'X' and justified their choice by reference to speed of flow.
- (iii) Flooding and marshy land were common correct answers though few scored full marks. References to erosion, particularly the land being cut off were fairly common though inappropriate or too simplistic for credit. There were a few impressive references to difficulties of access and the likelihood of specific diseases such as malaria, which may be present in such an environment.
- (iv) Many candidates knew the processes involved in oxbow lake formation and scored well though others, especially the very weak candidates, did not, either giving brief simple responses for one mark or showing a complete misunderstanding and gaining no marks at all.
- (b) (i) The vast majority of candidates scored well on this, mistakes made tended to be putting inappropriate land uses, especially areas of low cost housing, in zones A and/or B.
- (ii) Generally this was high scoring, though it did differentiate well in conjunction with the previous part as weaker candidates lost marks by trying to justify inappropriate choices of land use, typically low cost housing in flood prone areas. Also the location of factories in flood prone areas was justified by many by referring to disposal of waste in the river, which whilst seeming logical was not an appropriate answer as candidates had been asked to pick the most likely land use in part (i). In an MEDC such as the Netherlands (see stem) factories would not be developed so close to the river, nor would environmental legislation be likely to allow the disposal of materials in the river. Perceptive candidates gave some excellent reasons for the location of nature reserves in such areas, explaining not only by reference to the lack of damage caused by flooding but also the advantages of regular floods in such an area (e.g. deposition of silt, water availability, creation of distinctive wetland environments etc.).

- (c) This question differentiated well. There were some excellent responses, supported by fully labelled diagrams but at the opposite end of the spectrum some simplistic answers were seen showing little real understanding of the processes involved. The whole range of marks were seen here.

Question 4

- (a) (i) Probably around half of the candidates choosing this question answered correctly. Some definitions showed confusion between weathering and erosion and many did not state 'in situ'.
- (ii) Generally this question was well answered with most answers focusing on the high diurnal range of temperature. Some candidates also explained why freeze thaw and/or biological weathering were unlikely which was another acceptable approach to answering the question.
- (iii) The vast majority of candidates responded well to this question. The process was well understood and marks were high.
- (iv) Again this question was well answered and was high scoring with candidates showing excellent knowledge of the process and all mark scheme ideas were seen.
- (b) (i) Generally candidates interpreted the photograph quite well and most could identify features such as the steep slope/cliff, scree, bare rock and lack of vegetation. Features such as the crack/joint were commented on which was acceptable but others listed any limestone features which were not evident in the photograph such as clints, grykes and caves and as such these were not credited.
- (ii) This question differentiated well as many varied answers were seen. Some gained full marks from a full and detailed understanding of the chemical processes involved, others lacking understanding or focusing too narrowly on 'acid rain' gained few or no marks at all. All mark scheme ideas were seen and some candidates developed their answers well.
- (c) Some very good answers were seen here. Good Level 2 answers developed the points often by reference to the impacts of lack of food and water. Simple Level 1 answers tended to be lists of impacts without any attempt to develop or link ideas. Level 3 answers were not high in number but some were seen from candidates who were able to include place specific details such as named parts of the country or area selected.

Question 5

- (a) (i) The vast majority of candidates answered correctly but some errors were seen as not all candidates selected the correct photos.
- (ii) Many candidates scored one or both marks here. Most were able to pick out ideas such as work and many included another appropriate mark scheme idea.
- (iii) This question was also generally well answered, providing candidates realised they needed to write about people and not the natural environment. Inevitably some candidates incorrectly referred to the natural environment and thus did not gain any marks.
- (iv) Again well answered on the whole, the issue here being the need to refer to the natural environment rather than people which some candidates did not do. Vague references (e.g. noise and litter) were not credited unless they specified the impact on the natural environment and 'visual impact' was not considered appropriate as this would be on people. Some candidates referred to global warming and acid rain when developing the idea of air pollution, which was acceptable as the question did not specify the 'local' natural environment.
- (b) (i) Most candidates compared the two pie charts well, either giving a descriptive answer or using statistics. Candidates should however be encouraged to compare sectors directly in this type of question (e.g. 'more primary percentage in Nepal') rather than producing two discrete descriptions.

- (ii) Varied responses were seen here and the question differentiated well. Ideas of skills, technology and raw material availability were the most frequent responses though many weaker candidates just wrote about one or two ideas and didn't develop them.
- (c) Despite the use of many somewhat dated examples, in some cases going back to the Industrial Revolution, many answers did reveal an understanding of how an employment structure is likely to change as a country develops. Level 1 descriptions with simple ideas were common though the explanation was more developed from more able candidates thus allowing progression into higher levels. A common error was to neglect the 'change' element which the question required. Descriptions of the current employment structure alone were inappropriate as they did not answer the question.

Question 6

- (a) (i) Mostly correct definitions were seen here though a number of weak candidates simply reworded with 'the cost of labour' which was insufficient to gain credit.
- (ii) The vast majority of candidates identified the correct order and gained both marks.
- (iii) This question was generally well answered by reference to whether jobs were labour intensive or could be easily mechanised. There were also many appropriate mentions of skills and their impact on wage costs. Many candidates scored at least 2 marks with many gaining full marks.
- (iv) Whilst some good answers to this were seen generally responses were disappointing and somewhat vague in comparison to when this has been set as a case study question. Some candidates missed the 'high tech' focus and wrote generally about industrial location whilst others focused in detail about 'pleasant environment for workers' at the expense of explaining which other (perhaps more significant) factors are likely to attract high tech industries.
- (b) (i) Most candidates knew the difference between inputs, processes and outputs though some struggled to define inputs and processes particularly whilst others gave examples (e.g. raw materials) rather than definitions.
- (ii) Most candidates were able to construct simple systems diagrams but some lost marks by choosing an inappropriate example, such as a primary industry like farming, rather than a manufacturing or processing industry. The question differentiated well.
- (c) The focus of the question was 'inputs' to the farming system rather than a general description of the system with its processes and outputs. The most successful candidates identified a precise farming system (e.g. rice farming in the Ganges Valley or wheat growing in the Canadian Prairies) enabling them to describe the inputs and explain these requirements. Weak answers tended to be Level 1 lists linked to a vague example (e.g. commercial farming in New Zealand) with little or no explanation and much irrelevant detail about processes.

GEOGRAPHY

Paper 0460/21

Paper 21

Key Messages

- When measuring horizontal distances on maps, candidates are encouraged to use the method described on page 25 of the syllabus. This avoids errors which may occur if candidates attempt calculations using the representative fraction.
- When describing distributions, candidates should use compass directions and avoid phrases like 'above the Equator' or 'at the bottom of the map'. Candidates are expected to be more geographically correct in their answers.
- In questions asking for descriptions of features in photographs, candidates should keep to the brief in the question and describe what they can see in the photograph rather than write in general terms about the topic.
- Large numbers of candidates believe that tributaries flow away from larger rivers, and interpret the flow direction of a river as being in completely the opposite direction to reality. Improving this would help many candidates gain marks.

General Comments

Many candidates performed less well on **Question 3** than on **Question 4**; however, stronger candidates performed well in all the questions. There were parts of each question which candidates found to be demanding. These are described below.

Comments on Specific Questions

Question 1

- (a) Candidates generally identified road **A** as *narrow tarred*, feature **B** as a *railway* (although some spoiled their answer by referring to cutting, embankment and tunnel), feature **C** as a *power line*, and river **D** as the *Ncema*. Many candidates were able to give the height above sea level of the spot height at **E** as *1162 m*. Feature **F** was usually identified as a *bridge*, although some candidates referred to a gravel or earth bridge and were not given credit.
- (b) Descriptions of the relief in the area shown on **Fig. 2** were weak and very few candidates were able to score all four marks available. Many candidates referred to the *hill or mountain, steep slopes* and the highest point of *1452 m*, but few scored other points such as the *ridge, many summits, valleys, or lower, more gentle ground in the north east or south west*.
- (c) Candidates were able to name the *wide tarred road* and many *tracks* as transport features of the area shown on **Fig. 3**. They generally found it more difficult to identify two features of the water supply or drainage. These included the *small rivers, many rivers* and the *lake*. The main river, the *Umzingwani*, was outside the area shown on **Fig. 3**.
- (d) Many candidates correctly identified the flow direction of the river as north to south and gave evidence such as the north to south direction of joining tributaries. Very few noted the build-up of water to the north of the dam wall. However, significant numbers of candidates completely reversed this and said that the tributaries left the river and flowed towards the north. Others incorrectly used the word *distributary*.
- (e) This was often very well answered. Although many candidates gave answers to the distance measurement within the required range of *5000 to 5200 metres*, there were others who measured the distance in centimetres with a ruler, then attempted to convert this using the representative

fraction. These candidates did less well and sometimes gave implausible answers such as 2.5 metres or 500 000 metres. Many candidates gave correct bearings within the allowed tolerance of 033° to 037° . Answers to the grid reference were better than in the past with many correct answers of 251475.

Question 2

- (a) Most candidates were able to note that population density was greater in the south and went on to illustrate this by referring to two located figures, such as $0\text{--}2/\text{km}^2$ in the north and $25\text{--}100/\text{km}^2$ in the south. A small number did not give the units (per square km) in their answers. Many answers to this, **2(c)** and **4(b)**, were spoiled by reference to 'the top and bottom of the map' or 'above the river'. Candidates are expected to use compass directions at this level.
- (b) Most candidates were able to score one mark for saying that population density was greater in the wetter areas. The better candidates went on to illustrate this with statistics such as *dense where rainfall is over 1000 mm*.
- (c) This was usually answered well. Candidates noted that the main towns were in the south, along the rivers and in the areas of higher rainfall. The reason given for this was usually water supply, although some referred to irrigation or transport.

Question 3

- (a) In giving evidence for a dry climate, few candidates referred to the bare ground, sparse vegetation or scrub. Candidates were not given credit for simply saying that the vegetation occurred in deserts.
- (b) To answer this question, candidates needed to describe what they could see in the photograph rather than write about their background knowledge of shield volcanoes, composite volcanoes and even plate tectonics. Points which gained credit included *conical shape, steep slopes, bare rock, lack of vegetation, black rock, white or brown rock, lava flow, crater, narrow summit, and valleys or gulleys*.
- (c) The most common correct responses were ash falls and pyroclastic flows. Occasionally gases and lahars were mentioned. Few candidates scored two marks.

Question 4

- (a) Answers were generally very good. Most candidates were able to state Japan's output of high technology goods in 2000 within the allowed tolerance of 184–188 billion US\$. Most noted that China's increased output was greater or more rapid than that of the other producers. Rather fewer noted that Japan's output was more constant or had a smaller increase overall than the other producers.
- (b) This question was very well answered. Points given credit included the locations in the northern hemisphere, in MEDCs, in coastal locations, any two of Europe, North America/USA and Asia/China, one in India or the Middle East and most in Europe. As mentioned earlier in this report, phrases such as 'above the Equator' were very common and were not given credit.
- (c) In answering this question, only a small number of candidates were able to give both correct responses of *research facilities* and *links to other high technology industries*.

Question 5

- (a) Most candidates were able to identify the box on the left as the Stevenson Screen, but fewer correctly identified the anemometer or wind vane.
- (b) Candidates were often able to note the problems of the proximity to the car park and trees. The better candidates explained their answers fully by referring to shade or shelter, heat from exhausts or interference by people.

- (c) Most candidates scored half of the available credit. Some noted the features seen in the photograph such as the cables, mast, sensor or solar panels. Others appreciated that this involved digital, remote or computerised recording.
- (d) Many candidates noted that the box looked old and that the fence would make the instruments inside more secure. Some realised that the box would require frequent regular visits but the newer instruments could be read remotely, although these ideas were not expressed clearly.

Question 6

- (a) Most noted that **Fig. 8** showed that the Aral Sea had shrunk, although there were some candidates who thought that it had grown. Fewer candidates noted the decline in the fishing port of Muynak.
- (b) Candidates were required to use **Figs. 8** and **9** to give an explanation of the food and health problems that the people would suffer. Many were able to score two or three marks but full marks were rare. Possible explanations included: *the lack of fish to eat, growth of an industrial crop not food, soil infertility meaning reduced crops, polluted drinking water, weakened immune systems meaning people are liable to disease and poor living conditions or large families cause the spread of disease.*
- (c) The most commonly quoted advantage of stopping irrigation was that the salt would be washed out of the soil and that drinking water would be cleaner. Stronger candidates noted the disadvantage that cotton growing would be adversely affected.

GEOGRAPHY

Paper 0460/22

Paper 22

Key Messages

- When measuring horizontal distances on maps, candidates are encouraged to use the method described on page 25 of the syllabus. This avoids errors which may occur if candidates attempt calculations using the representative fraction.
- When describing distributions, candidates should use compass directions and avoid phrases like 'above the Equator' or 'at the bottom of the map'. Candidates are expected to be more geographically correct in their answers.
- In questions asking for descriptions of features in photographs, candidates should keep to the brief in the question and describe what they can see in the photograph rather than write in general terms about the topic.
- Large numbers of candidates believe that tributaries flow away from larger rivers, and interpret the flow direction of a river as being in completely the opposite direction to reality. Improving this would help many candidates gain marks.

General Comments

There were no questions on the paper which candidates found particularly difficult or easy, and stronger candidates performed well in all the questions. There were, however, parts of each question which candidates found to be demanding and which are described below. Because of this, few candidates scored very high marks.

Comments on Specific Questions

Question 1

- (a) Candidates generally identified feature **A** as a *railway*, although a few spoiled their answer by saying that the railway had a cutting, embankment and tunnel. Most candidates identified river **B** as the *Nsezi*. The feature at **C** was usually described as a *quarry* or *excavation*, although there were some incorrect answers of *mine dump* or *mining trench*. Candidates generally gave the height of the contour at **D** as *1060 m*.
- (b) There was a wide range of answers describing the reasons for the growth of the settlement around Mbalabala. Good answers referred to features such as the *wide tarred road, railway or station, road junction or route centre, quarry, reservoir or dams or rivers for water, gentle or flat land*, and the development of services in the area such as the *hotel, school and barracks*.
- (c) Many candidates correctly identified the flow direction of the river as north to south and gave evidence such as the north to south direction of joining tributaries or the increased width towards the south. However, significant numbers of candidates completely reversed this and said that the tributaries left the river and flowed towards the north. Others incorrectly used the word *distributary*. The other natural features of the river included the *width of 200–400 m* and the *increasing width towards the south, meanders, braiding, rapids, tributaries* and *gentle gradient*. Weaker answers included non-natural features and features of the surrounding land.
- (d) Although many candidates gave answers within the required range of 6000 to 6300 metres, there were others who measured the distance in centimetres with a ruler, then attempted to convert this to metres using the representative fraction. These candidates did less well and sometimes gave implausible answers such as 2.2 metres or 600 000 metres.

- (e) Most candidates were able to gain credit for giving an answer in the correct grid square and there were many who gave the correct response of 246356 metres. This was answered better than in previous sessions.
- (f) Answers were very mixed and not all candidates were able to recognise the contour patterns. Few were able to identify the isolated hill at **X**, perhaps because they failed to locate the feature on the map extract. More were able to identify the valley at **Y**, perhaps because they saw the V-shaped contour patterns on **Fig. 3** and guessed between **Y** and **Z**.

Question 2

- (a) This was a fairly straight forward question where most candidates scored well. Examiners gave credit where candidates made relevant points but under the wrong headings. Points given credit included, for relief: *hills or mountains, ridge, or a good description of gradient*; for the coast: *bay, beach, sand, low tide, calm sea*; for the vegetation: *dense, luxuriant, trees or bushes, palms and flowers*.
- (b) Few candidates were able to gain full credit for this question. Credit could be gained for a comment on the shape of the coastline, or on the wind, for the state of the sea and also for the material on the beach. Few candidates referred to the offshore wind at **A/X** and the onshore wind at **B/Y**. There were, however, some good comparisons of the sea state and the shape of the coastlines.

Question 3

- (a) Given that the tropical desert climate is one of two types named in the syllabus, descriptions of its distribution were rather weak. Marks were available for stating that the deserts shown on **Fig. 5** were *around the tropics, around (although not 'between') latitudes between 10° – 35°, coastal, on the west sides of continents, and where there were cold ocean currents*. Expressions such as 'above and below the Equator' were not given credit.
- (b) Candidates found this a relatively difficult questions. Examiners gave credit to any expression which indicated movement from higher latitudes to lower latitudes. Many candidates thought that the ocean currents were winds and others thought that they were a result of the deserts.
- (c) There were many excellent answers to this question which tested knowledge rather than skills. Candidates noted that long tap roots *reached deep water* or the water table; small, hairy leaves *reduced transpiration*; shallow, widely spreading roots *caught rainfall or caught water before it evaporates or percolates, or increased the area to catch water*; and thick, fleshy stems *stored water*.

Question 4

- (a) The vast majority of candidates were able to name either Gauteng or Western Cape as a province which has gained population as a result of internal migration. Most went on to note that Eastern Cape has lost 4% of its population due to migration, although a few spoiled their answers by failing to quote the units.
- (b) The majority of candidates noted the direct correlation between population change due to migration and GDP per capita. Examiners were generous when interpreting the expressions used by candidates to describe the axes. In giving a reason for the relationship, candidates adopted two approaches, both of which were given credit. Some decided that migration was the causal factor and gave answers such as *population gain means more workers or tax payers*, while others took the opposite approach and argued that *people move to more affluent areas as a result of more jobs, better living standards or more pay*.
- (c) Most candidates who gained full credit did so by quoting two examples of provinces, relating a province with a high urban population with population gain (Gauteng or Western Cape) or a province with a low urban population and population loss (Limpopo or Eastern Cape).
- (d) Examiners credited a wide variety of difficulties of the physical environment such as drought, exhausted or eroded soils, pests, earthquakes, volcanic eruptions, desertification or land degradation, and floods. Credit was not given for clearly human difficulties such as war.

Question 5

As usual, the photograph interpretation question produced a wide variety of answers, the best being those which focused on what could be seen in the photographs.

To suggest a type of urban land-use in the foreground, credit was given to those candidates who suggested the CBD and to those candidates who suggested a residential zone. Descriptions of the buildings which gained credit included: *flats or apartments, multi-storey, some shorter buildings, flat roofs, balconies, high density, different colours* and *the multi-coloured building*. Those candidates who decided that the area was the CBD then went on to give a textbook description of the CBD scored few marks.

Most candidates recognised that the type of urban land-use on the hill in the background was residential. Descriptions of the buildings given credit included: *single storey, small, sloping roofs, different colours, some larger buildings* and *high density*. As in the first part of the question, there were some candidates who tried to explain the pattern of land-use. This was beyond the scope of the question and was not given credit.

Question 6

- (a) Most candidates correctly identified Country **C** as the one using the biggest percentage of nuclear power.
- (b) Most of the correct answers were those which stated that the country totals could be converted into a bar graph. Very few suggested the use of different sized circles.
- (c) Candidates were required to suggest the reasons for the judgements that the countries had made in choosing their power supplies. For Country **A**, these could include why they had chosen HEP and nuclear and why they had chosen to use less fossil fuel and other renewables. For Country **B**, these could include why they had chosen to use fossil fuel and other renewables and not HEP. For Country **C**, the reasons were similar to those for Country **A**, although the emphasis on nuclear power had to be explained.

Reasons given for the use of HEP included: *many rivers, high rainfall, steep relief, capital to build HEP stations, cheap running costs, lack of pollution* and *a decision to use a renewable source*. Some candidates referred to the country having a lot of dams, which was not given credit.

Reasons given for the use of nuclear power included: *the country had the technology or capital required, nuclear used small amounts of fuel, nuclear will not run out soon, it may be considered renewable* and *no greenhouse gases were emitted*.

Reasons given for the use of fossil fuels included: *coal or fossil fuels were available in the country* and *the resulting lower transport costs*.

Candidates did not tend to refer to the use of other renewables.

GEOGRAPHY

Paper 0460/23

Paper 23

Key Messages

- When measuring horizontal distances on maps, candidates are encouraged to use the method described on page 25 of the syllabus. This avoids errors which may occur if candidates attempt calculations using the representative fraction.
- In questions asking for descriptions of features in photographs or diagrams, candidates should keep to the brief in the question and describe what they can see in the photograph or diagram rather than write in general terms about the topic.
- Large numbers of candidates believe that tributaries flow away from larger rivers, and interpret the flow direction of a river as being in completely the opposite direction to reality. Improving this would help many candidates gain marks.

General Comments

The paper was comparable with that for previous years. **Question 6** proved to be fairly easy, while **Question 4** was relatively difficult with more extended writing.

Candidates were provided with additional writing space on pages 16 and 17. Relatively few made use of this, instead preferring to continue in other empty spaces on the paper; some additional material that was squashed and abbreviated tended to be difficult to read and understand. The additional pages have been provided so that candidates always have ample lined answer space without the need to use separate additional sheets of paper. Candidates should be reminded to clearly indicate the question number whenever they use the additional space.

Comments on Specific Questions

Question 1

- (a) The 1:50 000 map was of Tshatshani, Zimbabwe. Candidates were instructed to study the area of the map indicated on **Fig. 1**, in order to identify the features. **A** was a dip tank. **B** was a gravel or earth road. **C** was a hut. **D** was a spot height of 1034 metres. **E** was an area of smooth rock on a low hill. Many candidates had mostly correct answers. Common errors were choosing narrow tarred road for **B**, omitting the unit of metres on the land height at **D** and using human rather than natural features for **E**.
- (b) A west to east cross-section was provided in **Fig. 2**. This had a very flat section line, so it was essential to locate the features by measuring from 390810 at the western end. Most candidates had a reasonable attempt at this, but not many were sufficiently accurate on all three locations.
- (c) The Kezi School was located at 499886. Most candidates gave answers in the correct general location, though a number were slightly north or slightly east of the correct grid reference.

To the south-east, in Kezi, some of the buildings could be identified by the abbreviations associated with them. Post office (PO), district administration office (DAO), police station (PS) and hospital were the correct answers. Many candidates had identified all of these for two marks. Two or three correct gave one mark. A few failed to score, as they had hospital but made various assumptions about the other buildings, such as 'houses', 'shops', etc., which were not evidenced from the map.

- (d) Having located the school in part (c), candidates now had to measure from there to the ruins on the Dombwe-Dombwe hill and then give the compass bearing for this. A distance of 7000 metres to 7200 metres was acceptable, with 245° to 248° for the bearing. Please note the comment above regarding distance measurements.
- (e) The Shashani River could be found on the western side of the map, where it flowed from north to south, and candidates were asked to describe its physical features. Typical river descriptors were applicable: meanders, tributaries and variable width, and rapids, islands and gentle gradient were also appropriate. An additional tributary mark was available for more specific information describing the three main tributaries or the many small tributaries. Candidates appeared familiar with this type of question and there were many good descriptions, making full use of the available answer space. A common error was to take flow direction as south to north and thus assume tributaries to be distributaries.
- (f) Candidates were given a choice of answers to determine the height above sea level of the river in 5484, at the edge of the map. The 1000 metre contour line could be seen on both sides of the river in this area, indicating that the river was flowing at a level close to, but below, this height. The correct answer, of under 1000 metres, was a popular choice for candidates, with the most common error being the next choice, of exactly 1000 metres.
- (g) Candidates again had a choice of answer, this time four adjacent squares. They had to choose the highest drainage density and the highest settlement density. The main rivers crossed 4883, making this the highest drainage density, while the huts were clustered in 4983, making this the highest density of settlement. Most candidates answered correctly.

Question 2

- (a) **Fig. 3** was a simple, uncluttered diagram and candidates were asked to describe the characteristics of the trees shown. From the scale provided it could be seen that the trees were tall, reaching over 20 metres and up to 30 metres in height. The trunks were straight and thin in width, with no branches until above 20 metres. The crowns were rounded and overlapping, forming a canopy, while at the bottom of the tree, the wide base indicated buttress roots. Some candidates started describing from the diagram but used background knowledge such as thin bark, drip-tip leaves and large leaves, features which were not evident from the diagram. Thus most candidates gained some credit, but not always full credit, even though the writing space was usually filled.

In part (ii), candidates then had to explain the link between the hot, wet climate and the characteristics of the trees. Valid ideas included tall, or straight, to compete for sunlight; tall due to the continually hot and wet conditions allowing continuous, rapid growth; buttress roots to give stability in the wet soils. Candidates found this difficult and often did not quite write enough to make the necessary link. Characteristics had to be those that could be seen on **Fig. 3** and thus be valid in part (a)(i).

- (b) The trees shown in **Fig. 3** were part of the canopy layer of the tropical rainforest. Evidence for this was their 20 metre to 30 metre height, or the fact that their crowns were touching. Most candidates correctly selected the canopy, but some just stated that the trees were tall, which was not sufficient for the second mark. Those who had chosen the wrong layer usually picked *emergent*.

Question 3

- (a) **Fig. 4** showed variation in average world temperature over a period of 130 years. To help candidates make some generalisations, the mean temperature over the 130 years was indicated on the graph and candidates were asked to identify which of four given periods had temperatures closest to that mean. The correct answer was 1951–1980 and almost all candidates identified this.

They then had to give the lowest temperature and the year of its occurrence. This happened between 1908 and 1909, so either was acceptable, and the temperature fell to between -0.46°C and -0.47°C . Many had the correct year, though a few opted for 1910 when they could have been more precise. There were more errors with temperature, due to the negative scale, and answers were sometime given a factor of ten increase due to an incorrect decimal point.

Parts (i) and (ii) had encouraged the candidates to study the graph and they were now asked to describe the main trends shown. It was important to keep to the main trends and not go into

unnecessary detail. 1880 to 1910 saw a decrease, which was followed by an increase until 1940. There was a decrease from 1940 to 1950 and then an increase from then onwards. Another approach was to make use of the mean line, with 1880 to 1939 being below the mean. Some candidates adopted a mixture of these two approaches and that was acceptable, as was the general comment of overall increase over the entire period.

- (b) The general trend, since 1975, had been for world temperatures to increase. This was likely to result in a rise in sea levels and increased flooding in coastal areas. Many candidates had correctly pointed this out. A few wrote about natural disasters, without sufficient detail, while others put the flooding down to tsunami events.

Question 4

- (a) **Photograph A** showed a settlement in the Andes. Candidates had to describe the site and situation of the settlement, using both the photograph and the map of the area provided in **Fig. 5**. The settlement was on the floor of a flat, or gently sloping, valley and also the lower slopes of the valley side. The map showed a junction of valleys and a road junction, as well as the presence of a river. Candidates generally noted the valley and the river but did not always give sufficient detail about how the road related to the settlement, or indeed the location of the settlement in relation to the valley shape. Most candidates gained some credit, but not always full credit.
- (b) In part (b), candidates had to suggest why much of the area was without settlement. Many wrote about the mountainous land, with its steep slopes being unsuitable for building and agriculture. Others pointed out that the land near the river would be prone to flooding, and would be needed for agriculture, and that lack of roads made the whole area remote and inaccessible. Less commonly, candidates suggested that the environment would be cold and lacking in sunshine, due to the effect of aspect, and that rocky areas with thin soils would be difficult to cultivate. Most candidates gained credit, but few had sufficient ideas for full credit.

Question 5

- (a) **Photograph B** showed a commercial arable farm in Chile. Candidates first had to define these terms – commercial being products for sale and arable relating to the production of crops. Candidates usually knew one of these but sometimes assumed that the second term was the opposite to or in some other way related to the first.

Candidates then had to describe other features of the farm from the photograph. Many noted the large area of flat, or gently sloping, land and some pointed out that there was just one crop, planted in lines, with two stages of growth. Many noticed the poles, wires and pipes but some were not sure of the purpose of these and wrote about the pipes to support the plants, while fences kept out predators, rather than pipes for irrigation and poles and fences to support the plants.

- (b) In part (i), candidates had to make a decision as to the use of the thin pipes. Candidates usually realised that they were for irrigation and **Fig. 6** provided the reason, with its mention of dry summers giving a rain-free growing season.

Following on from this, the snow falling on the mountains would be advantageous to the farmers of the Central Valley, since on melting it would provide a water supply. Many made this connection.

- (c) Candidates were again referred to the photograph, to suggest why insect pests would rapidly cause damage on the farm. Many noted that the plants were close together and that there was no netting or other physical protection. Less commonly, some realised that the monoculture of the grape farm would make all plants vulnerable to the same pest.

Question 6

- (a) **Fig. 7** showed the sources of energy used by Canada and Egypt, and candidates were given the information in **Table 1** to enable them to complete **Fig. 7**. Most did this correctly. The most common error was to use the data as 54 and 41 degrees rather than as percentages, which resulted in a blank, unused section on the graph.
- (b) Answers of between 25% and 27% were acceptable for the percentage of Canada's energy generated by HEP.

In part **(ii)**, candidates had to describe the main similarities in energy use between the two countries. There was no need to give specific data, just comment on the general pattern. Many realised that oil and gas were the main sources in both countries, and mention of both of these was sufficient to gain both of the marks. Some also noted the relatively low use of coal in both countries, though it was not correct to say that coal was used the least.

In part **(iii)**, candidates then needed to focus on three differences. They could now look at the specific details and compare the amounts used in each country. Egypt used more oil and more gas. Canada used more hydro-electric, more coal, more nuclear and more renewables. Some candidates had clearly made an effort to choose three different types of examples: one where Egypt had more, one where Canada had more, and one where only one country used the resource.

GEOGRAPHY

Paper 0460/03
Coursework

Key Messages

During this session there was a fairly small entry, mainly from Southern Hemisphere centres. This is usual for this session of the Syllabus. The report includes points arising from this series, but they are equally applicable for centres that make their entries in the June series, so may be taken as guidance for those centres too.

General Comments

As almost all centres have submitted proposals in advance of candidates undertaking the work, there are virtually none which are not fully in line with the Syllabus. The principal criterion for approval is that the work falls within the scope of the Syllabus. A secondary one is that the nature of the planned work is pitched at an appropriate level for the age of the candidates undertaking IGCSE Geography. Other advice is usually offered if all else is sound. Advice does not need to be adopted for proposals to be accepted. However, it is based upon reports that are submitted by the team of CIE Moderators who read all the work submitted. They identify strengths of work which allows candidates to access high grades in the Coursework, and they also report on weaknesses that have been observed during the moderation process. Where a particular good practice regularly leads to higher grades, this is passed on at the proposal stage if this has not already been included in the proposal. Similarly, if certain approaches do not usually help candidates to higher grades, and these have been included in a proposal, the experience and advice of Moderators is passed on.

Comments overall

All the work submitted during this session was clearly within the Syllabus and no difficulty arose in that area. The level of work undertaken was also quite appropriate to the age group, so all the studies, whether they had previously been submitted in proposals or not, would have been approved by CIE. Where weaknesses did occur, these will have been reported back to centres, but some of the points made were common to several centres, so these will be the ones reported on here.

It is worth mentioning that of the five criteria in the generic mark scheme, there is one that is almost always high scoring and is usually the one that is given most attention in proposals. That is *Observation and collection of data*. It is usually well planned and executed with care, and it is exceptionally rare for this work to be weak. *Organisation and presentation* is usually good, but sometimes can be weaker for one of two reasons. Sometimes presentation relies rather heavily on one specific technique. The generic mark scheme identifies 'a range of appropriate techniques' for the highest level, so over reliance on just one technique will not allow Level 3 marks to be awarded. The second way in which weaknesses can occur with this criterion is when only fairly simple techniques are used. For some centres in the past, all candidates used only bar and pie charts to present their findings. These are often computer generated so look good, but frequently reveal little more than the raw numbers recorded from data collection. Bars and pies are not automatically unchallenging, and they can be used in much more appropriate and creditworthy ways. This can best be served by an example, which it should be noted, is not taken from any of the centres which submitted work this session. Many studies examine changes that can be expected in an urban area as one moves from the centre to the periphery. Certain locations may be chosen, and average number of storeys of buildings may well be one of the measures taken. The locations of collection points may well be named, and a bar chart drawn for each in alphabetical order. This would be unlikely to reveal any geographical pattern. But if a graph with distance from the centre on the x axis, and a scale for average height on the y axis were presented, with a bar for each location at its distance from the centre, geographical pattern emerges and one appropriate technique will have been accomplished.

The most common form of weakness in investigations occurred in all three of *Knowledge with understanding*,

Analysis and interpretation and *Conclusion and evaluation*, but the root cause for all of these three stems from the first two steps of the route to geographical enquiry. Weakness in 1 *Identification of issue, question or problem*, and in 2 *Objectives of the study are defined*, will not prevent a proposal from being approved, but where such weaknesses do occur, the experience of CIE Moderators will be passed on to help overcome any shortcomings in these areas in the comments accompanying the approval response. Despite the feedback provided by CIE Moderators, this is still the most common reason for candidates not achieving high marks.

In both proposals, and in the work of candidates that is submitted, good attention to 1 *Identification of issue, question or problem* produces clarity about what is to be investigated, supported by geographical reasons as to why this might be worth investigation. So the subject for investigation might be 'Changes in the channel and bedload of River x from source to mouth.' The reasons why changes in the channel and bedload occur should be explained. This does not necessarily mean that a named theory should be stated, in fact, if a named theory or model is mentioned, this is sometimes viewed as being sufficient in itself without the reasoning as to why it should be so, by some candidates. Too often an investigation of a river ends up as an account of everything that could readily be measured at a number of points along a river without any particular purpose in mind. Sometimes a table showing the Bradshaw model has been included, but may have no explanation as to why the model should show the features it does, and why they should work. Handled well, with clear explanation, the Bradshaw model can be a particularly good starting point for high quality work, but clear understanding of the theory to the reader is essential.

Once the area of investigation has been established, and the geographical understanding behind it made fully clear, the questions to be investigated, or hypotheses, need to be established. From the understanding of the theoretical background, predictions of what might be expected to be found in the real world can be made. These are the hypotheses or questions to be investigated. After considering the work of traction, saltation and attrition along the course of a river, predictions about the nature of bedload from source to mouth can be made. It might be expected that the average size of bedload will become smaller from source to mouth, and that the average weight of bedload will become less from source to mouth, and that the average angularity of bedload will become more rounded from source to mouth, amongst other predictions that are possible. If the background to these predictions has been sound, it will be fully clear why they are being investigated.

It is vital to have established the issue, question or problem clearly, and to have made specific questions to be investigated, when the Analysis stage is reached. Here, the findings should be explained. It is fine as a starting point to state what the findings are, but a good Analysis goes on to explain them. It is usual that some of the expectations that were stated in the hypotheses, will be found to be supported. Theoretical background that was outlined earlier can be used to explain such results. In this way a hypothesis can be confirmed (not proved). In reality, there are likely to be some results that do not fit in with expectations. Such anomalies can be identified, but more importantly, they should be accounted for in some way. If they can be accounted for by modifying the underlying understanding outlined at the start, this will be credited well. Such results might lead to rejecting the hypothesis (not disproving it).

The Conclusion can then summarise what has been confirmed and what has been rejected, identifying the key pieces of evidence that can be found amongst all the data that was collected. This can then show what parts of the background understanding seem sound, and which parts are more questionable, or may need further modification.

The main point is that it is almost impossible to write a strong Analysis and Conclusion without having established clear geographical understanding, and some expectations based on it, right at the outset. The best place to do this is in the initial proposal. Within the proposal, some guidance about presentation techniques, what analysis involves and what should be found in a conclusion can help candidates enormously to bring out their abilities in a relevant way in the write up of their investigations.

If all of this can be included in the initial proposal, candidates are guided towards producing work that can achieve high credit.

GEOGRAPHY

Paper 0460/41
Alternative to Coursework

Key Messages

Every examination is different but there are usually a few generic tips and key messages that need making that should improve candidate performance in future. Most of these have featured in previous reports but the same issues keep coming up again, despite the entry being a fresh batch of candidates with several new Centres. 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*.
- 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 this conclusion with one piece of evidence from each of Fig. 10, Fig. 11 and Table 7*.
- 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 allow, 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 out a question. 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 especially to questions where you are asked to complete tables, diagrams, graphs or maps.**

General Comments

Most candidates found this examination enabled them to demonstrate what they knew, understood and could do. The overall range of marks went from 0 to 49 out of 60 – a smaller range than in previous years – with weaker candidates scoring on the practical questions, such as drawing and interpreting graphs and tables, and candidates of higher ability scoring well on the more challenging sections requiring explanation and judgement, especially regarding hypotheses. **Questions 1 and 2** were very similar in terms of difficulty.

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 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 1(c)(iii)** where candidates needed to explain why the results showed a pattern, not support the pattern with additional data. As in some previous papers, **Question 2(d)** required candidates to suggest suitable fieldwork investigation methodologies and **Question 1(d)** required candidates to suggest improvements to the investigation methodology. Such questions are frequently included on this paper and are an area which Centres should practise with candidates. However, it is not good practice to develop a series of generic improvements which may apply to all fieldwork as such suggestions tend to be vague and not worth credit.

Centres need to realise 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 1(a)(i), 1(b)(ii) and 2(a)(iii)** 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 premises or in the local area.

Comments on Specific Questions

Question 1

- (a) (i) Although there were some good answers in which candidates were able to describe this popular fieldwork task, many candidates found the introductory question difficult. Candidates most commonly gained credit for referring to placing the ranging poles at equal distances apart, and measuring the angle of slope by using a clinometer. Only the better answers included details of the important idea of using the same point on each pole to align the clinometer. The answers from weaker candidates were typically vague and scored limited credit for statements such as 'read the angle with the clinometer'. A minority of candidates had no experience of the task and wrote about putting the clinometer in the river and the poles across the river.
- (ii) Most candidates could suggest an advantage of using a digital clinometer. The advantages most commonly suggested were that it would be quicker to obtain the angle, the angle would be more accurate, it would be easier to read the angle on a digital screen, and it is portable to move from one site to another. Some candidates mistakenly thought that a disadvantage of a digital instrument is that it would not give an accurate reading. The most common disadvantages which were suggested were that it was fragile and the battery may run out.
- (iii) Many candidates recognised that the two measurements should be excluded because they were different from the others, and better candidates used the term 'anomaly'. Candidates also suggested that the exclusion of these measurements would produce a more accurate result because they may have been measured incorrectly.
- (iv) Most candidates correctly calculated the average angle. The most appropriate answer was given to one decimal place to correspond to the other average results in the data table. Answers given to two decimal places were also credited, although they were not in line with other results.
- (v) This question is typical of a data completion exercise which is omitted by many candidates. Most candidates did plot the average angle accurately. If their average angle calculation was incorrect in (a)(iv), their answer was credited in this section if it was plotted accurately. Candidates who showed the average angle with a cross rather than a horizontal line did not gain credit as their symbol did not match the key.
- (vi) There was a wide range in the quality of answers as candidates made a decision about hypothesis one and supported their decision with evidence. Almost all candidates agreed with the hypothesis, although the quality and accuracy of their supporting data varied. The best answers included average results from the three sites which were clearly indicated that they varied downstream. A few candidates saw from the graph that results at the three sites did not overlap but had different ranges.
- (b) (i) Answers varied in quality between those which clearly explained the significance of measuring three different dimensions to those which did not understand that volume was the product of measuring length, width and height. Candidates often expressed their answer in terms of length

being out of proportion to the other measurements, or that two pebbles of the same length could have different widths.

- (ii) Most candidates correctly identified at least one piece of equipment. The most common error was to include a quadrat.
 - (iii) The task of completing the histogram was not attempted by 10% of the candidates. Candidates must read the question paper carefully so that they do not omit graph completion questions. Candidates who plotted the bars usually did so accurately, having carefully analysed the data to include individual results in the correct categories.
 - (iv) Candidates did not need to make a decision whether to agree or disagree with the second hypothesis, but needed to support the decision that there was no clear conclusion. This proved to be a question which resulted in clear differentiation between candidates. Better candidates used the average results from the three sites to indicate how sizes varied, and the best answers also included data from specific categories in the histogram to show how sizes decreased and increased downstream. Some weaker candidates tried to argue that there was a conclusion to the hypothesis and that they could agree with it, despite being told in the question that there was no clear conclusion.
- (c) (i) The task of plotting two bar graphs was not attempted by 9% of candidates. Those who did complete the task usually scored both marks. Some candidates plotted inaccurately through careless reading of the scale.
- (ii) Candidates needed to explain that measurements increase with distance from the inside bank. Weaker candidates did not understand the idea of pattern and gave an answer which described the increase and decrease of volume at individual sites across the meander.
 - (iii) Many candidates found this a difficult question. Some candidates referred to data which showed the pattern rather than explaining why there was an increase in volume across the river meander. Candidates who attempted an explanation of the pattern often showed a misconception that load is bigger on the inside of the meander because there is less current so pebbles are deposited. Few candidates suggested that the current would be stronger on the outside of the meander and so would have more energy to move the larger pebbles.
- (d) The quality and detail of suggestions varied considerably. This extension question referred to the tasks which had been performed in the fieldwork within **Question 1**. Candidates needed to focus their suggestions on improving these methods rather than suggesting new methods of data collection or different fieldwork projects. Consequently, answers which suggested working on different rivers or in different seasons, or in different weather conditions received no credit. Appropriate suggestions included measuring at shorter distances across the river channel, measuring more pebbles at each site across the river in order to calculate an average measurement, and using measuring equipment such as a pebbleometer or a measuring cylinder to measure water displacement.

Question 2

- (a) (i) The introductory question discriminated well between candidates. Approximately half the candidates listed the descriptions in the correct order. The most common error was to place derelict land above overgrown vegetation in the rank order.
- (ii) Many candidates gave appropriate suggestions recognising that scores would be linked to individual perception and that different places where candidates lived could cause their judgements to differ. Other candidates negated their answer by referring to 'people interviewed having different opinions'.
- (iii) This proved to be another challenging question for many candidates. They focused on interviewing people which showed a basic misunderstanding of how an environmental quality survey is undertaken. Candidates also suggested ideas which had already been decided, such as descriptions of categories and which areas to survey. Candidates need to read the question introduction carefully because it often contains such information. Good answers referred to ideas such as going in groups to the different areas, agreeing a time to do the surveys to ensure

consistency, looking at the area and giving each category a score, and discussing with other candidates to agree a score.

- (b) (i)** Most candidates correctly plotted the four bars on the graph.
- (ii)** Most candidates plotted both scores accurately on the scatter graph. One error made by a minority of candidates was to omit the names of the two areas which were needed to distinguish them from other areas.
- (iii)** Most candidates identified the correct conclusion that the hypothesis was partly true. Whilst many candidates recognised that Shepway was an anomaly, only the best answers developed this idea by stating that the other four areas supported the hypothesis. The quality of supporting data varied and gave differentiation within the answer. To gain credit, answers needed reference to environmental quality and distance from the centre for two contrasting areas. Weaker candidates gave data for one area but did not give any comparative data from another area.
- (c) (i)** This proved to be another question which discriminated well between candidates. There were many perceptive answers relating to both the advantages and disadvantages of an on-line questionnaire. Their responses to an unfamiliar question revealed personal initiative from these candidates. The most commonly suggested advantages were that people could choose their time to complete the survey and that the candidates may use IT to process the results. Common disadvantages which were suggested included lack of Internet connection, that some respondents would not be IT literate, and that there was no control over who answered the questionnaire or, indeed, if anyone would respond. Weaker answers were characterised by ideas that the on-line questionnaire would be easier to do or faster or cheaper.
- (ii)** This was another question which was not attempted by 10% of the candidates. In most years, the examination paper contains a task which involves completing a pie graph and candidates should be prepared to answer it. Most candidates who attempted the question plotted the sections and shaded them correctly. As usual, a common error was to reverse the order of the segments, but this cannot be accepted as the key makes it clear in which order the segments should be plotted.
- (iii)** As in previous graph completion questions, 10% of candidates did not attempt the task. Most candidates were successful in plotting the missing sections and shading them accurately. A common error from weaker candidates was to plot the second dividing line at 92% rather than 96%.
- (iv)** Most candidates correctly chose Tovil as the area with the best quality of life. Many justified their choice with appropriate data. The best answers were comparative in some way, either by using terms such as 'highest percentage' or 'most' or 'higher than in other areas'.
- (v)** The conclusion to the second hypothesis was stated as false. Candidates needed to look at the different pieces of evidence to find support for this conclusion. The question proved to be a good discriminator and there were some excellent responses which made clear and accurate reference to named areas, distance from the town centre and appropriate percentage statistics. Many different answers were accepted, provided that they supported the statement that the hypothesis was false. Despite being told this, a minority of candidates wrongly attempted to find data to show that the hypothesis was true. Weaker candidates did not express their ideas clearly enough to make the point or ignored the evidence and suggested why these variations may occur.
- (d)** The final section proved to be a challenging but effective extension question. It differentiated well between candidates of different abilities, although few candidates scored full marks. Candidates were informed that different methods should be suggested, thus they gained no credit for developing methods already carried out such as the bi-polar survey or questionnaire. The best answers referred to looking at specific secondary data such as crime statistics, undertaking a participant observation study, or interviewing local residents or officials. Some candidates suggested the collection of data on pollution, but this was only accepted if it was specific, such as measuring the level of noise.

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.
- 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.
- 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.
- Check you are using the resources that a question refers you to for evidence or data e.g. Table 4, Fig. 10. Remember some resources will be in the Insert not on the examination paper.
- 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 **Question 2**.
- 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.
- If you have to write more than the lines allowed indicate this with a phrase such as (*continued on page 16*). This is very helpful to the Examiner in finding the rest of your answers. There are additional lined pages at the back of the examination paper to use.
- Make sure any shading of graphs is clear.

SECTION 3

General comments

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

There is less general advice to be given for areas for improvement with this paper than with others. There were no reports of time issues - despite a number of *No Response* answers at the end of **Question 2** - as 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. Particular questions where candidates do not score well often relate to them not taking time to thoroughly read and understand the resources referred to. This can mean that some candidates do not obtain a mark in line with their geographical ability.

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, such as the hygrometer, can be used even if they have only limited opportunities within the Centre.

Question 1 required candidates to know about, or have some experience of, carrying out fieldwork involving the measurement of temperature in a small area. This is a popular activity that all Schools could organise on their grounds whether entering candidates for Paper 3 or 4. Candidates needed to be aware of simple differences between a digital and max-min thermometer, how to complete line and point graphs for temperature plots, how to use a table of data with average and individual temperatures on it, and to know why temperature varies. They needed to make decisions on two hypotheses that needed support from provided resources. They needed to consider how to improve the investigation and also the definition of relative humidity, the use of a hygrometer and relative humidity tables. This question was quite well done with most candidates attempting all sub-sections. The areas of concern were the lack of use of average temperatures to justify hypothesis decisions in **(b)(iv)** and **(c) (iii)** and the lack of understanding of the use of a hygrometer. **Question 1(b)(iii)** and **Question 1(c)(ii)** were the sub-sections with quite high *No Response*.

Question 2 required candidates to have knowledge or experience of carrying out fieldwork into visitors to beaches. Methods of carrying out questionnaires and visitor counts were covered along with methods of recording data on recording sheets or on questionnaires. The plotting of bar charts, bi-polar surveys and the use of pie charts with keys were included alongside calculating figures to complete tables. The two hypotheses explored the contrasting attractions of both beaches and the different reasons for visiting them. This topic is usually much more accessible than physical topics such as in **Question 1** yet statistics showed that candidates found some sub-sections hard and the omission rates on the latter parts of **Question 2** were higher than **Question 1**. Areas of concern included the confusion between a visitor count which does not involve asking questions in **(a)(ii)**, how to overcome the shortcomings of the bi-polar survey in **(b)(i)**, using data in **(b)(iv)** and generating relevant geographical questions to add to the questionnaire in **(d)**. **Question 2 (b) (ii)**, **Question 2 (c) (i)** and the last three sub-sections were those with quite high *No Response*.

SECTION 4

Comments on specific questions

Question 1

- (a) (i)** Candidates showed a pleasing knowledge of the advantages of a digital thermometer. The most popular answers were that it was faster, easier to read, more accurate and portable. It was not accepted that it was cheaper or that an advantage was that different units such as °C and °F could be provided as this syllabus only requires candidates to use the Centigrade unit. Max-min thermometers also usually show °C and °F.
- (ii)** Many responses just suggested taking more readings or using more groups to take more readings or taking readings at the same time the next day! The best answers either suggested that a candidate took more readings and then calculated the average or the reading was checked using another or a different thermometer.
- (b) (i)** Some candidates mistakenly gave the highest *average* temperature here of 35.1°C when the question asked for the highest temperature on the Guyot building which was 35.6°C.
- (ii)** Most candidates chose 4 metres as the correct answer; others misunderstood the word 'variation' in the question and gave figures including temperature figures. A small number did not attempt the question.
- (iii)** The vast majority of candidates did well and gained full credit for two accurate plots; the 15.30 plot at 35.2 was less well done than the 36 plot. A significant minority of candidates failed to attempt the graph completion and thus could not gain access to two relatively easy marks.
- (iv)** Almost all candidates correctly chose the Eno building as being better for supporting the hypothesis that temperatures will be highest next to buildings. Many then just chose the highest temperatures for the Eno building and used those to justify the choice however, to justify the choice the data needed comparing with the Guyot building which was not chosen. Candidates needed to refer to the average temperature rather than pick out individual ones and also needed to choose the data closest to the building i.e. at 0.5 metres. An answer that stated the average temperature at 0.5 metres was 31.2°C next to the Eno building which was higher than 29.9°C at the Guyot building gained full credit.

- (v) Good responses were seen to this question with most answers referring to buildings absorbing and emitting the sun's heat or the additional heat that may be radiated out from internal heating systems.
- (vi) There was a large variation of choices here with all of them being chosen by candidates; the correct answer was 8 metres which the majority circled.
- (c) (i) Most candidates calculated the average temperature as 34.2°C correctly rounding down to 1 decimal point from the exact calculation of 34.24°C to match the data in the table. The latter figure was credited though as was its correct plotting in the next question. It should be noted that, if the other data in a table is rounded, then candidates should also write their answer in a similar format.
- (ii) Given that almost all candidates attempted the calculation in the previous question, it was disappointing to see a significant number fail to attempt the plotting of their calculation on the graph. Most candidates could plot 34.2 or 34.24 accurately; a few misread the vertical scale so plotted the 0.2 part two squares up from the 32°C line instead of one. Some used a cross to plot instead of a circle which was not credited given the different symbols were keyed for different buildings.
- (iii) As with **Question 1 (b) (iv)**, candidates often stated individual temperatures to support the hypothesis; average data is what was required as separate individual data does not give an overall picture of how the evidence supports the statement as being true. The best answers recognised that average temperatures were always higher at every distance from the Eno building and also at every time apart from 6.30 when they were the same. Using the correct average figures to back their observations up produced correct answers gaining full credit. This question proved to be the most difficult on **Question 1**; the lessons to be learnt are to make sure candidates understand the significance of using average figures rather than individual sites to back up hypothesis decisions.
- (iv) This was well answered; most candidates used the key to spot that the Guyot building was in shade at 9.30 whereas the Eno building was facing the sun hence accounting for the temperature differences. Candidates who just referred to 'one building' without specifying which were not credited.
- (v) The question asked for one other factor that could cause temperature variation in a small area so any factor causing shade or aspect could not be credited as that had been covered earlier. Simple references to humidity, the presence of water, vegetation (though not if referring to shade) and the influence of wind were all seen and credited.
- (vi) This was not well answered; with many candidates suggested measuring other buildings, measuring at different seasons, using two thermometers or just repeating the investigation and calculating averages. The question wanted two ways to make this investigation more reliable which could be achieved by having shorter time intervals or distances or checking readings with a partner.
- (d) (i) A significant number of responses did not choose the correct definition which was the second one listed; most errors came with choosing the first definition.
- (ii) Candidates found this question difficult. The syllabus refers to several traditional weather instruments and candidates should understand how they all work including, where possible, experiencing some practice in using them even if they are not going to carry out formal fieldwork for assessment. The use of the hygrometer was not well understood. Most candidates knew the dry-bulb thermometer measured air temperature but the working of the wet-bulb thermometer and what it actually measures was poorly understood even with a diagram to help. Some candidates confused the purpose with that of a max-min thermometer and referred to the wet-bulb thermometer measuring water temperatures and also referred to mercury in one and alcohol in the other. Some candidates did not specify which thermometer they were writing about using expressions such as 'one thermometer...' and 'the other thermometer...'
- (iii) This was quite well done with most candidates working out a difference of 9 degrees and then using the relative humidity tables to calculate an RH of 36%. A few used the 15C figure in the tables.

Question 2

- (a) (i) A significant number of candidates did not attempt this question. While many candidates could show that they knew how to carry out a tally of 27 people, many did not realise that the recording sheet also required them to circle the time, day and month given in the same style as the location which was illustrated. Some wrote out these details instead. The majority that read the instructions carefully circled the three correct words and drew a tally of 27. It should be noted that geographical convention requires that tallies are drawn in groups of 5; some tallies were in groups of 4 or in 27 independent strokes which were not credited.
- (ii) This question proved to be the worst answered sub-section on the whole paper. Many regarded it as an independent question and gave answers that had already been decided in (i) i.e. they had been given the dates and times for the counts, they were told to use a tally system. Having been told they were carrying out a visitor count yet many responses suggested asking questions of, or interviewing, the visitors and being polite and saying thank you. Others suggested clothing advice or the use of insect repellents; a few suggested using a counter or clicker when they had been told to use a tally system. Those that suggested using a watch, starting and finishing at the correct times, working in pairs to count and staying in the same location for the three counts were credited but few gained full credit here.
- (iii) Most candidates realised that Sunday was a non-working day and that Monday was a working day so carrying the visitor count out on different days would lead to some useful comparative results. A few thought both days were holidays so that the candidates would be able to carry out the counts without missing School. Others thought both days were the busiest of the week so they would get good results.
- (iv) Almost all candidates recognised that there would be less visitors in January however there was no comparative statement regarding the temperature likely to be colder than in the summer though 'it would be cold' was stated by many. There were few references to tourist seasons and comparing summer with winter. Some thought there would be more tourists due to winter sports.
- (v) Almost all candidates that plotted the two bars for 46 and 35 gained both marks however a large number did not attempt the graph completion.
- (b) (i) This question proved quite difficult for the majority of candidates. Many explained why there were difficulties instead of answering the question about how they could be overcome. The majority gained credit for suggesting that the survey should be carried out at the same time but less suggested that the candidate scores should be discussed, agreed or averaged as a way to overcome different scores.
- (ii) Some candidates miscalculated the total; others missed out the significance of using the + sign in front of the 4 in the total box. A significant minority did not attempt this calculation. It was generally well answered though; candidates must be aware that, if there are – and + signs used in the table, it is important to specify these with other figures even if convention allows positive figures not to need the + sign displaying.
- (iii) A large number of candidates did not attempt the completion of this graph yet almost all that did gained full credit. It is important to note that, on this occasion, marks were only for plotting the three points correctly.
- (iv) Candidates that used data as required in the question often gained full credit by comparing visitor counts at Badesi and Valledoria e.g. 144 to 129 on Sunday, and the attractiveness of the location by comparing +4 at Valledoria with +2 at Badesi. Many gave qualitative statements about there being more visitors at Valeria which is not using data. A few chose an individual factor of attractiveness instead of using the overall totals.
- (c) (i) This response involved using the pie chart and a key to decide which categories matched the 20/17/14 statistics in the table. A significant number of candidates did not attempt this question. Those that could work through the pie charts, key and descriptions mostly gained full credit.
- (ii) Most candidates agreed with the hypothesis and correctly compared statistics for two different activities, be it by rank or percentage differences. Some responses only made a general statement about the differences for a fourth mark but overall this was quite well done.

- (iii) Most recognised that age/gender information would be useful if linked to different activities or reasons for visiting the different beaches. It was not enough to just say that this would give information about who visited each beach as the question was related to the conclusion in (ii) which related to the different reasons for visiting them. A significant number did not attempt this question.
- (iv) Many candidates felt the weakness related to asking for personal information and privacy issues which was surprising as they were only being asked to identify the main reason for their visit from a list on the questionnaire.
- (d) This was a very open-ended question with no credit given for a reason if the question was not allowed. Candidates needed to focus on useful geographical questions that were not intrusive e.g. *are you married?*; were not banal e.g. *are you enjoying your visit?*; also they should not ask sensitive questions relating to the country of origin of visitors nor questions they could answer themselves e.g. *how many litter bins are there?* The best questions asked related to the frequency of visits, other reasons for their visit, how visitors knew about the resort, how far they had travelled and by which mode of transport. Some candidates made no attempt to answer; it also proved the second hardest sub-section on **Question 2** regarding marks gained. Candidates needed to think 'geographically' to add to the questionnaire; many gave conversational questions which, while interesting, would not yield many worthwhile answers for later analysis.

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. Most of these have featured in previous reports but the same issues keep coming up again, despite the entry being a fresh batch of candidates with several new Centres. 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*.
- 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 answer with evidence from Table 3 and Figs. 9 and 10*.
- 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 allow, 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 out a question. 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 especially to questions where you are asked to complete tables, diagrams, graphs or maps.**

General Comments

Most candidates found this examination enabled them to demonstrate what they knew, understood and could do. The overall range of marks went from 0 to 56 out of 60 – a similar range to previous years – with weaker candidates scoring on the practical questions, such as drawing and interpreting graphs and tables, and candidates of higher ability scoring well on the more challenging sections requiring explanation and judgement, especially regarding hypotheses. **Questions 1 and 2** were very similar in terms of difficulty.

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 43 questions relate to misunderstanding or ignoring command words and 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 2(b)(i)** where candidates were informed that the teacher prepared the questionnaire for candidates so there was no need to think about new questions. As in some previous papers, **Question 2(d)(ii)** required candidates to describe a suitable fieldwork investigation methodology, in this case to undertake a pedestrian count, and **Question 2(c)(i)** required candidates to suggest improvements to the investigation methodology. Such questions are frequently included on this paper and are an area which Centres should practise with candidates. However, it is not good practice to develop a series of generic improvements which may apply to all fieldwork as such suggestions tend to be vague and not worth credit.

Centres need to realise 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 1(a)(iii), 1(b)(i) and 2(d)(i)** 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 premises or in the local area.

Comments on Specific Questions

Question 1

- (a) (i) Most candidates identified the most appropriate line along which to construct a cross-section.
- (ii) Most candidates were able to choose the correct equipment to measure the change in slope along a transect. The most commonly chosen distractor was callipers.
- (iii) There were many good answers to this question in which candidates were able to describe this popular fieldwork task. Candidates most commonly gained credit for referring to placing the ranging poles at equal distances or at breaks of slope, and measuring the angle of slope by using a clinometer. Only the better answers included details of the important idea of using the same point on each pole to align the clinometer. The answers from weaker candidates were typically vague and scored limited credit for statements such as 'read the angle with the clinometer'. A minority of candidates had no experience of the task and wrote about putting the poles in the sea to measure depth or wave frequency.
- (iv) Most candidates identified the correct types of dune. The most common error was a failure to identify the embryo dune.
- (v) In general, candidates were less certain about the formation of sand dunes. Many candidates associated dune formation with movement by waves rather than by the wind. There were a small minority of precise and accurate explanations, but many candidates scored one or two marks through explaining how the wind picks up and transports sand and then deposits it. Again, weaker candidates wrote vague statements such as 'the wind piles up sand' but omitted the idea of around an obstacle. Only the best answers included reference to the roots of vegetation stabilising the dunes.
- (b) (i) The opportunity for candidates to score well on this question clearly relates to their experience of using a quadrat in their fieldwork. Candidates who had used the equipment gave a clear description of their technique, including putting it on the ground or dunes, counting or estimating the number of squares which include vegetation and recording the results. Few candidates mentioned that the task should be performed more than once and an average result calculated. Some candidates made the error of describing how the number of different types of vegetation should be counted.
- (ii) This question is typical of a data completion exercise which is omitted by too many candidates. Most candidates who completed the plotting exercise did so accurately, although some misread the distance scale and plotted both points incorrectly.
- (iii) Almost all candidates correctly agreed with the hypothesis and many justified their decision with supporting evidence from the data table. The question discriminated between candidates of different ability because only the best candidates recognised that the hypothesis was not

completely correct because of a number of anomalies in the data. Candidates who identified an anomaly and gave supporting evidence from the data scored full marks.

- (c) (i) Most candidates scored one or two marks by correctly suggesting appropriate ways of finding out information. A popular suggestion which was not acceptable was to 'ask locals' as they may not know the different types of vegetation.
- (ii) Most candidates recognised the need to record other types of vegetation in addition to the main type in order to gain a full picture of vegetation cover. They realised that the method used was a simplistic method of recording information.
- (iii) The quality of response varied through the amount of detail and accuracy provided by candidates. Candidates who referred to distance from the high water mark or identified the site by number and referred to specific vegetation types scored both marks. Weaker candidates merely stated that vegetation changed from grasses to plants but did not give specific names of vegetation type or distances or site numbers.
- (d) (i) This question was well answered by many candidates who showed good understanding of how tourists could damage or destroy vegetation.
- (ii) This question contained a full range of quality of response. The best answers included a number of valid ideas about how to educate or inform tourists about the best ways to avoid damage, methods to restrict access to vulnerable areas, how to monitor visitors, and practical methods to stop potential damage. Weaker candidates gave vague responses such as 'employ security guards' and 'do not allow people to enter the area'.

Question 2

- (a) (i) Most candidates gave the correct meaning of CBD. A small minority did not know what the key term represents.
- (ii) Most candidates realised that a factory was the least likely building to be located in the CBD.
- (b) (i) Whilst most candidates correctly concentrated on how the candidates should make use of the questionnaire, a minority wrongly referred to the questions contained in the questionnaire. They wrote about how to improve the questionnaire or suggested new questions to include. They did not read the stem of the question which states: 'The teacher gave the candidates the questionnaire to use.' Candidates who had undertaken similar fieldwork when using their own questionnaires had probably heard their teacher giving them advice such as 'be polite to the people you are asking', 'work in pairs, not a big group' and 'do not block the footpath when talking to people'. Another common answer focused on how to select people to receive the questionnaire. Candidates used their understanding of a sampling technique in order to get a variety of respondents.
- (ii) This question proved to be the most challenging on the paper. Common errors were made by constructing overlapping groups or not covering a specific age, for example, 'under 15 and 16 to 40'. Weaker candidates did not seem to understand the need for mutually exclusive age ranges and suggested age groups of 'under 30' or 'over 40'.
- (iii) This question again revealed the problem of too many candidates not attempting a graph completion question. Generally, the bar graph was completed accurately with few errors. Where candidates did not complete the bar appropriately it was usually because of an error in plotting the lines or putting the sections in the wrong order.
- (iv) Most candidates understood the process involved in producing results based on different weightings. An error made by some candidates was to omit the '+' sign which was needed because the table contains both positive and negative scores.
- (v) Most candidates plotted the bar accurately using their answer to the previous section. If their total score calculation was incorrect in (b)(iv), their answer was credited in this section if it was plotted accurately.
- (vi) There was a wide range in the quality of answers as candidates made a decision about hypothesis one and supported their decision with evidence. Almost all candidates agreed with the hypothesis.

The best answers used evidence from both resources (**Figs. 7 and 8**) to support their decision. The candidates showed their understanding of the data through phrases such as 'most people agreed that the shop had provided more jobs' and 'all four statements have positive scores'. They then supported these statements with appropriate data. Weaker candidates often only referred to one resource and showed lack of understanding through answers such as 'the shop provided jobs' rather than how many people agreed with the statement, or '140 people said the shop has provided more jobs' not recognising that this figure was a weighted score, not the number of responses.

- (c) (i) The two separate tasks in this section varied in difficulty. More candidates made appropriate suggestions to overcome the difficulty of an environmental survey being subjective. Usually these suggestions focused on averaging individual scores, although some candidates did suggest that a group of candidates should discuss their fieldwork and agree an environmental score. Whilst many candidates correctly suggested that the difficulty of scores varying at different times could be overcome by conducting all surveys at the same time, other suggestions included doing the surveys at different times of the day and averaging the scores which would not provide direct comparability.
- (ii) The simple task of plotting the bar graph was not attempted by 10% of the candidates. Candidates must read the question paper carefully so that they do not omit graph completion questions. Candidates who plotted the bar usually did so accurately.
- (iii) Most candidates made the correct decision to disagree with the hypothesis. Having made the correct decision, candidates went on to give evidence of higher scores near to the shop and lower scores further away. The candidates recognised that the environmental quality at sites near to the store was better than at sites further away. They made good use of the map to show spatial awareness in order to contradict the hypothesis. A minority of candidates did not use the evidence appropriately and so incorrectly agreed with the hypothesis. Also a small minority of candidates were side-tracked into considering individual scores in the environmental survey which did not gain credit. Another error made by a few candidates was to try to explain why the new shop might have a negative effect, for example, traffic noise. This was irrelevant and also incorrect in this case.
- (d) (i) Many candidates were able to draw an appropriate recording sheet, showing that they had used them in their own fieldwork, but probably not devised a scoring sheet themselves as it would be usually provided by the teacher. They included space for details such as location or date or time of survey, some reference to counting or tallying the number of pedestrians, and an indication that they would use the tally count to calculate a total score. Weaker candidates (or those unfamiliar with pedestrian counts) drew a recording sheet to use for a bi-polar survey or a simple questionnaire.
- (ii) The final section proved to be an effective extension question. It differentiated well between candidates of different abilities, although few candidates scored full marks. Many referred to groups of candidates going to data collection points and recording the pedestrians who passed them by filling in the tally sheet. Only the better candidates wrote about the importance of starting and finishing the count at the same time. As in the previous section, weaker candidates or those who had not done 'counting' surveys wrote about interviewing people or doing a bi-polar survey. A minority of candidates described how a traffic survey could be done and gained some credit where there were ideas common to both.