GEOGRAPHY

Paper 2217/12

Paper 12

Key Messages:

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

- Ensure that examination rubric is followed correctly, answering 3 of the 6 questions only.
- 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 - e.g. know the difference between describe and explain, be able to compare.
- Identify the correct focus specified in the question stem - e.g. causes or impacts, natural environment or people.
- 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.
- Perform basic skills such as interpreting graphs, photographs and maps of various types.
- If the question asks for evidence or data from a source then candidates need to ensure they do this to get the highest marks. Data needs to be used to support statements being made rather than being presented in isolation.
- Learn the meanings of key words in order to be able to define and accurately use geographical terminology.
- Write as clearly and precisely as possible avoiding general statements – e.g. 'it will improve standard of living', 'it will cause pollution/make a lot of noise'.
- Write developed ideas wherever possible, especially where extended writing is required in the final two parts of each question.
- Have a range of case studies so that appropriate ones can be chosen for the topics tested.
- Include place specific information in case studies, however, care needs to be taken that this is not done 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:

As expected the most perceptive candidates performed superbly across the paper and some excellent geography was seen. Such candidates were familiar with, and able to cope with handling the wide variety of ways in which geographical data was presented to them, handled the skills involved and displayed a mature and sophisticated knowledge and understanding of the topics tested. Most candidates were able to make a genuine attempt at their chosen questions and attempted most sections, however weaker candidates found it difficult to interpret tasks and write effective responses to some questions.

Whilst there were rubric errors, the number of candidates who answered more than three questions was relatively small, and there seemed to be little, if any, evidence of candidates being short of time.

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 correctly identified Mongolia, though a significant minority identified Australia or Finland.

(ii) Most candidates gained a mark for referring to the large area, although could then have gone on to support this with statistics.

(iii) This was not as well answered in general, as there seems to be a lack of understanding about the factors that affect population density. Some candidates answered with general statements about climate, birth and death rates and war or referred explicitly to migration. Some responses focused on human or social reasons rather than physical ones.

(b) (i) Candidates usually described the general relationship and better answers went on to distinguish between the pattern before and after 1950.

(ii) A common mistake was to describe the relationship, thus repeating the answer from the previous question. High quality explanations focused on deforestation, destruction of habitat, and requiring or hunting for food, although some referred to cows, pigs and chickens which were not allowed as domestic livestock are bred for future supply.

(iii) Many candidates answered well with a range of problems suggested. The most popular ideas were lack of jobs, housing, water, food and education. Weaker responses suggested pollution or water and air pollution without discussing health problems.

(c) There were some irrelevant answers about population pyramids, structure and policies. Improvements could have been made by focusing on explanation rather than description. One error was to choose the wrong scale, often relating the answer to population distribution within a city. The most common countries chosen were Canada, Australia, Indonesia, Brazil and the UK though some candidates focused on migration rather than population distribution. There were a number of really excellent answers seen, particularly for Australia, and other responses could have been developed by including place specific detail.

Question 2

(a) (i) Answers varied, with some lacking the idea of 'order'. Those who had learned a definition or knew what a hierarchy was gained the mark, whereas others simply described the pyramid diagram.

(ii) Most candidates identified the correct statements.

(iii) Strong candidates chose comparative examples. Other successful answers focused on higher order, specialist vs convenience goods shops and more variety of services. Weaker responses did not compare or used a 'there are … there are not' approach. Some responses compared quality, sphere of influence or frequency of use which is not what the question was asking.

(b) (i) Most candidates identified the correct types of shop.

(ii) This proved challenging for some candidates, though there were some excellent responses seen, particularly references to high order goods, specialist and comparison goods, accessibility and the fact that many people had to travel a long way for these shops and services as they were not available locally.

(iii) There were some good answers here, although some candidates did not understand the concept of a pedestrian zone and so there were misconceptions. Candidates usually scored better on benefits, especially the fact that the environment was safer without vehicles with less air and noise pollution. Problems such as crimes were a common answer, however they are no more likely in a pedestrian zone than in any other part of the CBD.

(c) Many good out-of-town examples were chosen, though some wrote about a CBD mall of an urban supermarket. Some candidates gave descriptive answers rather than the explanation required and some explanations would have been improved by applying the factors mentioned to the named location. The better answers concentrated on factors such as accessibility, including identifying specific roads, which gave access to a large potential customer base, the cost of land and its availability.

Question 3

(a) (i) Most candidates chose the correct plate boundary.

(ii) Where candidates gained credit it was usually for the mention of convection currents, although some could have improved their answers by showing an understanding of how they explained plate movement.

(iii) Answers varied. Many candidates scored full marks though some did not focus on plate movement in the correct way to explain why earthquakes occur at plate margins.

(iv) There were many good answers which focused on factors such as family, jobs, confidence in buildings and preparations. Weaker responses linked ideas to those which apply to volcanoes and thus incorrectly referred to issues such as on fertile soils, tourism and geothermal energy.

(b) (i) There were many well thought out answers showing a clear understanding. Some candidates could have improved their answers by avoiding copying from the resource, and ensuring they interpreted the information.

(ii) The best answers were excellent and clearly comparative. Well expressed ideas included building structure, medical and rescue services and education about the dangers. Many candidates insisted that earthquakes can be predicted, especially in an MEDC.

(c) Most candidates named a volcano and there were some very good answers. Most candidates interpreted the question correctly and wrote about the effects of the eruption. Some need to ensure that all information included in their answer is relevant to the question. Weaker answers were generic and candidates needed to include more specific detail to gain higher marks. Common examples included Mount St Helens, Merapi, Etna and volcanoes in Iceland and Montserrat.

Question 4

(a) (i) Correct answers were less common here than incorrect ones and there was a wide range of answers.

(ii) Many candidates correctly identified the oxbow lake and the old course of the river.

(iii) Many candidates scored at least two marks. The most common error or omission was the village. A few candidates identified a meander from the old course.

(iv) There were many detailed descriptions which identified a number of advantages, including references to fertile soils, availability of water for irrigation or household use, the opportunity to fish in the river and the ease of transport by water or along the flood plain.

(b) (i) The most commonly identified features were that the river is wide, shallow and contains deposited material. Weaker answers referred to features which were not visible in the photograph, such as a V-shaped valley and interlocking spurs. Some candidates explained the formation of the features rather than describing them.

(ii) There were many detailed answers which named and/or explained the three methods of erosion. Some responses included attrition, which in this case did not answer the question, or explained methods of river transport.

(c) There were many areas suggested, the most popular being Bangladesh, the Ganges Valley and Boscastle. Some candidates gave detailed reasons for the floods, though others were more general, referring to heavy rain. Many of these answers included place-specific detail, many case studies of Bangladesh being particularly impressive. Some candidates included impacts of the flood which was not required.

Question 5

(a) (i) This was mainly correct.

(ii) Many candidates gave appropriate answers. Some included physical features such as mountain or beach which are not generally found in cities.

(iii) Most candidates successfully identified reasons from the climate graph, many including appropriate statistics.

(iv) Some candidates tended to refer to statistics from the graph but then needed to use this material to answer the question. Perceptive candidates did this by referring to conditions which were appropriate for both winter activities (e.g. temperatures below zero which were suitable for skiing) and summer activities (e.g. temperatures which were mild or not excessively hot which were suitable for mountain walking).

(b) (i) This appeared to be a straight-forward question and many candidates did score high marks, although some found it a challenge. Some candidates misunderstood food crops being sold as food to eat, listed types of jobs or repeated that more jobs would be available and for roads and airports they wrote about benefits to tourists rather than local people.

(ii) There were many excellent answers to this question with well developed and valid ideas such as the impact of noise and litter on people and the cultural impacts of tourism, along with the issue of seasonal employment. Common mistakes were to write about crime and the effects of tourism on the natural environment.

(c) Many different areas were chosen, textbook examples and ones which were obviously based on local case studies. The main impacts which were identified in strong responses were those associated with the clearance of vegetation for hotels and tourist facilities, and those associated with marine pollution and the consequent damage to ecosystems, including coral reefs. In contrast weaker responses either repeated effects on people or gave simple, brief responses.

Question 6

(a) (i) Most candidates gave an acceptable definition, though a few defined subsistence farming.

(ii) Generally plotting was done within tolerance.

(iii) Answers from many candidates were well thought out and showed a good understanding, though some referred to ‘climate’ or ‘weather’ rather than specific elements such as precipitation, temperature or sunshine. There were some candidates who made good reference to human factors such as subsidies, demand or market prices, however most concentrated on physical factors.

(iv) A range of methods were suggested and particularly impressive answers included clear details and the names of methods of soil conservation.

(b) (i) Many candidates listed areas of production, often with full supporting statistics, whilst more perceptive answers referred to a pattern from the map, such as the uneven distribution or the fact that coastal areas, particularly of the south east, produced most coffee.

(ii) Most candidates scored marks by briefly mentioning a number of generic factors, particularly temperature, rainfall, relief and soil fertility, whilst well informed candidates developed their ideas in relation to the impact of these factors on agricultural land use, sometimes with examples.

(c) The best answers included a specific area or location which helped to focus the impact of water shortage. Therefore named locations in Australia or specific African countries or regions tended to produce the most developed answers. These answers usually referred to impacts on food supply, loss of income, inability to work and malnutrition or starvation.

GEOGRAPHY

Paper 2217/13

Paper 13

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Comments on specific questions:

Question 1

(a) (i) Almost all candidates answered correctly, some using a quote from Fig.1 but many with the single word 'immigration'.

(ii) Many candidates gained both marks for ideas such as 'employment, education or healthcare'. Some candidates need to avoid using vague statements like 'standard of living or quality of life'.

(iii) Candidates generally responded well to this question with the most common ideas being 'availability of contraception, educated on the use of contraception, women have careers and so delay having children'. Some answers were general or lacking in the detail required. Candidates need to study the question carefully and recognise exactly what is required in their answer.

(b) (i) Candidates should focus clearly on the differences in this question. Some candidates did a great deal of work on statistics but could have gained marks very quickly by simply saying increase/decrease or higher/lower. On the whole, this was generally well answered and most candidates gave answers which were comparative as required.

(ii) No real problems were seen here. Most were able to identify the fact that they received low wages and did the unattractive jobs, and the cultural aspect was also seen frequently.

(iii) This was a straight forward question and many candidates got the correct idea about such as speaking the language, cultural differences, racism or discrimination and many of these ideas were developed, thereby gaining high marks.

(c) Most candidates were able to respond well to this question. Many included relevant information about pull factors. A full range of responses was seen, with many candidates converting level 1 responses to level 2 by making good use of statistical information such as patient to doctor ratios or adult literacy rates. Whilst some candidates included place specific information, some needed to include this to improve their answers.

Question 2

(a) (i) Many gave clear and accurate definitions, though some candidates were clearly not familiar with the term 'urban sprawl'.

(ii) Mixed responses were seen here, with some candidates giving general non-geographical statements about being 'near' or 'above/below' other features. However, some good descriptions were seen, with the best answers providing compass directions, and valid answers referred to being within or outside certain boundaries like the ring road.

(iii) Not all candidates seemed to understand this question, writing answers which seemed to imply the growth of shopping centres within the CBD. In contrast, lots of good details such as loss of customers/profit/dereliction, along with some positive ideas, for example, reduce traffic congestion or air pollution in and around the CBD, were seen.

(iv) This question appeared to be somewhat misunderstood with many answers assuming the growing industries would directly and exclusively supply the out of town shopping centres. Where the response was based on an understanding of the problems inner city locations bring for factories, then candidates were rewarded for 'lack of' and 'expense of land'. Successful candidates gave several ideas, and other candidates could have improved their answers by giving a range of reasons, rather than focusing on one or two in some detail, particularly transport issues. Reference to pollution issues was common though not relevant unless tied into environmental planning regulations.

(b) (i) Most candidates were able to compare and homed in on relevant differences. Some seemed to miss the evidence in the photographs, stating differences they were expecting but were not valid in the case of these pictures. The majority of candidates gained marks for 'more shops or more people' ideas.

(ii) Varied responses were seen, depending on the familiarity of candidates with the concept of 'sphere of influence'. Most were able to apply knowledge about high and low order goods but some needed to fully develop these ideas, for example, about the willingness to travel further but less often and to want to shop around in a centre with several competing outlets for items like clothes. Some development was seen but this is an area for improvement – candidates need to practice developing their ideas for the 5 mark questions.

(c) A wide variation of valid urban traffic schemes were evident, many based on the candidates' direct experiences of rising congestion in their own cities/countries. Where candidates had used well-established case-studies there were some excellent answers, for example, based on London, particularly the congestion charge and Barclays/Boris Bikes schemes. Weaker responses were often unable to expand beyond a basic list of ideas such as car-pooling or new/widened roads, without giving exemplars or stating how congestion would be reduced. At the top end some excellent details, typically about London or Chinese cities were seen. More candidates need to develop their ideas to reach the next level.

Question 3

(a) (i) Virtually all candidates answered this question correctly.

(ii) This was mostly answered correctly although some gave examples of landforms (e.g. lake) which by themselves were not evidence of tourism.

(iii) Generally well answered by all candidates with the majority gaining full marks.

(iv) Many candidates knew the process well. Some missed the simple point that plates moved together and some were not sure, so mixed moving together and moving apart in the same answer.

(b) (i) Variable responses were seen here. Those that did what the question asked and talked about the different directions achieved highly. In general the use of scale was an issue, as many did not use the scale and those that did tended to get it wrong. Whilst many simply got the mark for naming two or more countries.

(ii) Where candidates clearly linked their points to 'economic' impacts they scored well. However, some just listed the likely damage caused by an eruption, like people being killed, but needed to establish how this would have an economic effect like 'lack of workforce'. Many candidates gave several ideas with some good development.

(c) There were many who developed relevant ideas, however, could have improved their responses by including place specific detail. Reference to the Sahel and Australia were commonly seen. Some candidates confused flooding and drought case studies.

Question 4

(a) (i) Candidates could have made the comparative point of 'trees on valley side and grass on flood plain'. However, this question was not generally well answered.

(ii) This question was generally well answered with many candidates gaining both marks. However, a small minority wrongly gave one or two methods of transportation.

(iii) Most diagrams were recognisable as cross sections and most were the correct asymmetrical shape with accurate labels for full marks. Some candidates simply sketched photograph C.

(iv) Some excellent answers with accurately labelled diagrams, showing the sequence of the meander neck narrowing, being broken through and the ends sealed off with deposition, and equally detailed descriptions in the text space. Not many candidates identified the starting point for the process, namely erosion on the outside of the bend. Some diagrams were unclear and/or unlabelled. Most

candidates however, understood the process, many scoring high marks. Most included diagrams, some of which enhanced the written text.

(b) (i) Generally candidates attempted to compare and most gave one or two correct comparisons, particularly relating to size, number of distributaries or direction. However, there was some confusion evident between tributaries which join a main river and distributaries which separate off in a delta. Most saw there was a different scale on the two maps and therefore the Niger had the bigger delta. A few excellent answers were able to state the difference between an arcuate (Niger) and a bird's foot (Mississippi) delta. Few noticed the lake enclosed within the Mississippi Delta.

(ii) Most candidates were able to show an understanding that deposition of the river's load will occur due to the sudden slowing of velocity at the river mouth. A few excellent answers were able to explain flocculation. Some answers were muddled, referring to tributaries as opposed to distributaries.

(c) A straight forward case study. Weaker responses tended to give simple statements e.g. 'farmland flooded'. There were many responses at level 2 as many candidates could develop their ideas, however the use of place specific detail would have improved answers further. There were some very good Bangladesh and Boscastle answers seen at level 3.

Question 5

(a) (i) Most candidates answered within tolerance with few outside the tolerance.

(ii) This was generally correctly answered, with many candidates gaining at least one of the marks.

(iii) Most candidates understood the significance of factors such as relief, temperature and precipitation, picking up their marks in a simple but effective way. This question was generally well answered by all.

(b) (i) Most candidates could make at least one correct observation and there were many who gained 3 marks. Candidates need to clearly and precisely describe their observations, avoiding vague statements or value judgements. There were some vague mentions of mountains without really describing the canyon itself and not many described the steep or sheer sides.

(ii) This question was generally well answered with the best responses identifying a range of ways tourists and their activities would impact on the canyon area, including air pollution from their cars, water pollution from their boat engines, deforestation etc. Weaker responses identified litter as a problem, however, to improve they needed to focus on more than one aspect.

(iii) Most candidates understood that national parks have rules designed to protect the natural environment. There were a range of responses, from basic ideas like rules against littering and well-explained ideas about having rangers and educating the visitors to encourage a greater understanding and appreciation of the park. There were some excellent wide ranging responses from perceptive candidates. Weaker responses typically included simple references to rangers, litter control or restricting access to areas, and were usually able gain some marks.

(c) Answers relating to examples from candidates' home countries were plentiful and often detailed. There were also plenty of classic text-book exemplars such as skiing in Courmayer and safaris in Kenya. Weaker responses referred to whole countries rather than tourist areas and gave lists of basic points like more jobs, more litter, and so on. This was another successful case study for many candidates and a wide range of answers was seen, most of which were balanced between benefits/problems. Some candidates strayed into problems for the natural environment without relating these to people. As with previous case studies, improvements could be made through developed ideas and the presence of place specific detail.

Question 6

(a) (i) Numerous different ways were used to define pollution but most candidates produced something which was acceptable.

(ii) Well answered by most who were able to pick out two relevant phrases from the resource.

(iii) The impacts on people were generally well done with ideas such as smell, loss of jobs and health issues gaining the marks easily. However, some referred to the environment rather than people.

(iv) Popular ideas were 'kills' and 'habitat'. Whilst some candidates did develop other ideas, not many were able to reach full marks.

(b) (i) This question was not very well answered. Many candidates struggled to state the main points describing features of the homes. This type of question needs further focus from candidates, thus the skill needs practising.

(ii) All methods could be successfully justified and good answers were seen on each. Weak responses referred to features of all methods (e.g. it would clean up the beach/sea) rather than the evaluation required. Typically the stronger answers wrote about cost effectiveness and economic benefits, particularly in relation to the retention of the fishermen's community, discussing the advantages of the chosen method along with reasons for rejection of the other two methods.

(c) Many candidates were able to draw on experiences from their home countries and cities. Some struggled to identify the source of the pollution in a developed way, such as exhaust fumes or specific chemicals from vehicles. Impacts, particularly on people, were often well-explained with reference to specific conditions like asthma, bronchitis or, more extremely, lung cancer. Many good answers about Beijing, Shanghai and numerous other Chinese cities were seen. Place specific detail could have been evident in more answers.

GEOGRAPHY

Paper 2217/22
Investigation and Skills

Key Messages

- Practical skills questions need to be completed precisely.
- Given data should be interpreted to show understanding
- In ***Section B***, careful analysis should be backed up with evidence

General comments

This paper was comparable with those of previous sessions. Some questions were found to be more straightforward than others. In Section A this was true of **Question 3** and **Question 4** and particularly **Question 3(a)(iii)**, **Question 4(a)(ii)** and **Question 4 (a)(iii)**. Question 1 was found to be more difficult by candidates.

In ***Section B***, the two questions seemed to be equally popular. **Question 7** seemed to be a little more straightforward and thus higher scoring.

Comments on specific questions

Section A

Question 1

(a) The 1:50 000 map was of Wenimbi, Zimbabwe and candidates were first asked to give the four figure grid reference of the square with the largest amount of surface water. The water of the Nyakambiri Dam was all located within 5390 and most candidates had a correct response, though a few had reversed eastings and northings and some had used the other adjacent lines of 54 and/or 91.

This was followed by a six figure grid reference. There was only one wide tarred road and this intersected with a narrow tarred road at 554888. The most common error was 555888, but a pleasing number of candidates had recorded a correct answer.

(b) The railway crosses the map in a west-east direction, but it is only at the eastern edge that we are given an indication of what is beyond – Macheke. Many candidates had written this. There were a few incorrect answers and these were usually Nolans West or Theydon Estate, both in the east but not beyond the edge of the map.

(c) In square 5482, the height rises from below 1540 m to above 1600 m. As it does so, the vegetation becomes increasingly dense. Candidates had to be careful with their choice of words here. It was necessary to indicate the change in density, clearly shown in the key.

(d) Answers of 3400 m to 3600 m were acceptable for the distance along the road, between the two benchmarks. Use of the benchmark data gave a difference in height of 13.61 m, leading to a gradient ranging from 1:250 to 1:265. Many had a correct road distance, but relatively few were able to use this to get the gradient, though significantly more did score 1 mark for the intermediate working, giving 13.61 m. Candidates with an incorrect answer in **part (i)** were allowed the concession of error carried forward, giving them access to both marks in **part (ii)**, and a few benefitted from this.

In **part (iii)**, the compass direction of the road was NE or ENE. Most had a correct answer here. Several had used a bearing instead.

(e) Fig. 1 was a completed cross section which just required further labels. The reservoir was at the SE end and needed to be at least 8.2 cm from the left. The river was between 2.4 cm and 2.6 cm; the railway between 6.4 cm and 6.7 cm; the cultivation within the first 2.4 cm and the second area between the road and the railway. Many candidates got at least one of the areas of cultivation, and also the reservoir, but were not sufficiently accurate in the centre of the section, probably as a result of relying on guesswork, rather than measuring the locations.

(f) The area in Fig. 2 was the SE corner of the extract. Physical features here included a gently sloping valley, with a meandering river, draining to the SW. With its tributaries, it formed a dendritic drainage pattern. Identifiable heights ranged from 1500 m to 1536 m and land adjacent to the river was occupied by sparse bush.

Further away from the river the land was used for cultivation, which was one of the human features in **part (ii)**. Others were dams, huts, buildings, dip tank and track, all of which were easily identified from the key, with perhaps the exception of dip tank, which some had down as a bridge.

Many candidates easily scored 3 marks in **part (ii)**. Full marks in **part (i)** was very uncommon, since the physical features required rather more in the way of map interpretation and could not be simply read off from the key.

Question 2

(a) Fig. 3 showed data for Britain during a dry period in 2010, when rainfall was significantly below average. Candidates had to add an area of dotted shading to the SW region, to complete the map, and most did this correctly. As always there were a few who did not see the question, because they did not see an answer line, and a few opted for the diagonal shading of 75% - 89% of rainfall, which may also have been due to not reading the paper carefully, spotting the 7 in 73% and incorrectly matching it to the 7 in the 75% on the key. Most candidates have ample time to complete this paper, so they need to be encouraged to take the necessary time to read questions and instructions more carefully and avoid the loss of straightforward marks.

Well below average rainfall, of 60% - 74%, was found in the west (including the NW and SW), with one area in the centre and one in the east. Some noted that it was along the coast, and a few highlighted the fact that the islands off the west coast were also in the same category. The zone could also be located with reference to the areas around Inverness, Oban, Holyhead or Plymouth. Most candidates made at least one of these points but few wrote enough to score all 3 marks.

(b) Most candidates correctly identified York as having the lowest rainfall, but there were some errors in the calculation in **part (ii)**. 60% of 900 mm would give Holyhead an annual total of 540 mm.

(c) Correct responses in **part (c)** were “the west is usually wetter than the east” and “rainfall in the east was closer to normal than in the west”. Some candidates got both of these, but often only one was correct.

Question 3

(a) Fig. 4 gave information about nuclear power in Bangladesh. Most of the questions were written such that candidates could not just copy chunks of Fig. 4, but had to interpret the information. Thus the second sentence tells of two reactors, each generating 1000MW, giving an answer for **part (i)** (how many megawatts will be produced?) of 2000MW. Not surprisingly 1000MW was a common incorrect answer.

There were two possible answers for **part (ii)**. Uranium is advantageous over fossil fuel because only a small amount is needed and its price is more stable. The answer had to be taken from the information in Fig. 4, so comments of an environmental nature, such as “does not release carbon dioxide” were not valid.

In **part (iii)**, most candidates had two correct answers out of the possible three of money, fuel and expertise.

(b) Again here in **part (i)**, candidates had to manipulate the data given in Fig. 4. On March 7th, 2011, demand was 5000MW but supply only 3850MW, giving a shortfall of 1150MW. Many had calculated this successfully but some had just quoted data from the passage.

Electricity shortage is greater in the summer (**part (ii)**), due to its increased use for cooling, with people switching on air conditioning or fans and refrigerators needing more power. Some candidates had written about this but many had just copied from the sentence in Fig. 4, "the shortage is greater during the summer when temperatures exceed 30°C".

Shortage of electricity causes problems for factories and many candidates had some good ideas here. They commonly noted that machines stopped working, resulting in reduced output, and some went on to point out that workers would still have to be paid, resulting in reduced profits. Others commented on working conditions, with lights and air conditioners going off, or refrigeration failure spoiling commodities. Most candidates picked up both available marks.

Question 4

(a) Most candidates correctly completed Fig. 5, with 210 mm of rain and 31°C in February. A few made a small error in the alignment of the temperature plot. April had the most rain and the total for November was 100 mm. A few put August for **part (ii)**.

The annual temperature range was 3°C. A number of candidates just wrote the maximum and the minimum, without performing the calculation.

(b) "Drip tip leaves to shed excess water." "Thick buttress roots to provide stability in shallow soil." "Thin bark as no need to limit moisture loss." These sentences were the result of correctly joining the two halves of Fig. 6. Relatively few candidates matched all three correctly. Some seemed to want to avoid allowing the lines to cross; others wanted to match everything to something and thus used additional lines. The explanation for buttress roots seemed to be the easiest.

Question 5

(a) Table 1 showed a lot of data and candidates had to take time to understand what they were being presented with. By looking down the "at home" column, candidates could discover that the highest percentage of people working at home was in zone 4. 6.7% of the residents of zone 3 worked in zone 1, while the largest percentage of commuters to zone 1 came from zone 2. Candidates usually got some of **part (a)** correct, but there were a wide variety of wrong answers too.

(b) To assist with **part (b)**, the relevant data had been highlighted and keyed on Table 1. Many candidates pointed out the general decrease from zone 1 to zone 6, and some went into additional details. A common error was to compare these figures to the other figures for the same zone.

Suggesting reasons for the differences was more difficult, since many candidates had seen the trend in the figures but did not appreciate what the data was about. Valid points included the idea of lots of jobs in zone 1 (the CBD) so a high percentage who lived there, worked there; few jobs on the edge of the city (zone 6); zone 6 could have high quality housing for highly paid CBD workers who commute to work; other zones with higher than the trend could contain major industrial areas.

(c) Some workers were classified as "other" on Table 1. Many candidates correctly suggested that these people were working outside the city, or at least outside of zones 1 – 6. Other valid suggestions were that the worker might work in more than one location and therefore more than one zone, or maybe they would have a mobile job such as a taxi driver. Few came up with two ideas, but most scored one mark.

Question 6

(a) Candidates were asked to label the estuary and the floodplain on Fig. 8. "Estuary" did not seem to be widely known. The label should have been inserted into the shaded river area, to the north of Fig. 8, but most had it on the mill river or omitted it entirely. The floodplain could have been labelled on either side of the river and this was better understood.

In Photograph A, the trees in the foreground were between the photographer and any other features. Thus to mark their location on Fig. 8, candidates needed to draw a diagonal line across the corner of Fig. 8, between the photographer's position and the shaded housing area. Many had done this correctly. Others had not noticed the "position of photographer" symbol, and had drawn a line along the bottom of Fig. 8, assuming the orientation of map and photograph to be the same. A few had the line in amongst the labelled features and some had omitted this entirely.

(b) Candidates then had to suggest reasons for the location of the factory. Suggestions had to be based on Fig. 8 or Photograph A only, so "cheap land" was not valid. However there were plenty of points that could be drawn from these sources, such as the river for water supply or transport, the road and railway for transport, a large flat site with room for future expansion, a power supply, local labour from the housing area but, at the same time, away from major areas of population, which could object to an industrial site on their doorstep. Many candidates had a number of relevant points and scored well.

Section B

Question 7

(a) (i) This question required ideas about safety that would be given by a teacher. Many candidates gave three sensible pieces of advice such as stay in groups, wear sensible clothing, and take precautions regarding insects, wild animals or the sun. Other candidates did not focus on safety and gave answers such as use a stick, do it in daylight, tell the teacher where you are going (the teacher would be with them) and do not pick flowers or climb trees.

(ii) It is important in this sort of question to make sure that X and Y are distinguished in the 'Differences' rather than using expressions like "One goes north, the other goes East". Most candidates did this and recognised that they both began at the same height and were the same length for 'Similarities'; common 'Differences' included X being coniferous and Y deciduous (which some candidates gave as separate differences), Y being steeper, and the transects going in different directions - X to the east and Y to the north. Some incorrect heights were given as candidates had not studied the contours closely enough.

(b) (i) Systematic sampling is the one technique that most candidates know about; the vast majority chose systematic as the one that matched the description of taking measurements at a fixed, even or regular interval i.e. over 25 metres.

(ii) The common answer "to measure differences in temperature and light" was not a reason why the measurements were taken every 25 metres – that is just why they are carrying out the measurements. Practical answers such as "it would be easy and quick to measure 25 metres", or it is a good choice regarding the usual length of tape measures were acceptable as well as the answers related to systematic sampling in that it prevents bias and gives a fair test. Some ideas worthy of credit were related to the distance being not too close and time-consuming to getting a wide range of data in a reasonable time over 400 metres.

(c) (i) This was well done even if many correct answers were prompted by the photograph of a digital thermometer. Most candidates referred to them being more accurate, easy to read, faster/quicker and portable.

(ii) Most candidates gained full credit for giving a figure in the 35-37% range or 1 mark for giving a figure +/- 3 outside this range i.e. 32-34% or 38-40%. As with the next answer there were some issues regarding the way candidates wrote the figures 4 and 7 which may have made the difference of a mark here.

(iii) Almost all canddiates correctly picked out 8.4˚C as the most common temperature from Table 1; the previous statement applies here regarding distinguishing between 4 and 7 too.

(iv) Most of the plotting here was very accurate but some candidates did not attempt the question.

(v) Most candidates drew bars in the correct places; the 70% bar was drawn more accurately than 62% as some candidates plotted it on the 64% line. It is important that candidates plot and shade the bars clearly so they can be seen by Examiners. Some were drawn too lightly to be seen. Again a number of candidates did not attempt the question.

(vi) Most candidates recognised that the sky percentage seen in grassland was higher than the woodland. Some compared the woodland areas with each other and a few others just stated the percentages without making any comparative statement e.g. higher than, more than.

(d) (i) Almost all candidates identified that the temperature would be higher in the deciduous woodland but then failed to give the correct supportive evidence for the decision. Many candidates gave qualitative statements when what were needed were judgements using data for the woodland sites. It had been made clear through the first few questions that the first three sites were grassland leaving 14 sites for woodland however many candidates used the 17 sites to calculate average figures which included grassland. Consequently, by including grassland sites, the evidence was statistically wrong with the average temperatures calculated all being too high. Some candidates just used one or two individual sites when an overall view of the data was required. Comparing the lowest temperature in the woodlands was not the best way to give evidence for one being higher than the other though this was a popular answer.

(ii) Most candidates related the amount of light to the temperature and type of woodland by stating that it was higher in the deciduous woodland. Various single sites were chosen to illustrate this but not always the best sites and data.

(iii) This was quite well done. Using the photographs, most candidates recognised that A showed coniferous trees which were densely packed together and so would block out sunlight causing lower temperatures than the more widely spaced deciduous woodland which would let light in and so have higher temperatures. The tallness of the tree was not credited but references to thicker canopies and trees being closer together were accepted for coniferous woodland.

(e) S**o**me reasonable ideas such as making the transects longer, taking measurements at smaller intervals and taking the measurements at the same time for comparative reasons. It is important in this type of question that candidates consider the context provided rather than just repeat generic answers such as repeating the study, using more candidates, doing it in another season. Here, for example, it is unlikely that a pilot study would be appropriate nor would doing more transects be possible given the nature of difficulties carrying out fieldwork in thickly wooded areas. The key was to think about what the candidates could have done differently in this investigation to make it more reliable.

Question 8

(a) (i) It is important that candidates avoid giving generic responses to questions such as this. Those that did perform well on this question did so because answers were given that did not take into account the context. For example “to test equipment” would be relevant if they were using weather instruments but here the candidates were only using a recording sheet and pencil. It was stated clearly that the “candidates did an environmental quality survey” yet many candidates assumed the survey was filled in by residents not by the candidates. The questionnaire part of this question came in **(c)** and had not been mentioned at this point in the examination. The candidates did their pilot survey in a road near their School not in the housing areas so the responses “to get to know the area” or “to know what results to expect” were not relevant here. Candidates who did well appreciated the context and referred to checking that the description of features would work, that the scale was appropriate and the general idea to test their method would work and that they would know what to do.

(ii) The focus in this question was a practical one; how would candidates use the recording sheet. Candidates who did well suggested they would go to the area, circle the area on the sheet, observe the features, make a judgement using the bi-polar descriptions and put a tick in the box. Most did this but too many just described the content of the sheet and what a bi-polar scale was.

(iii) The key to this question was the phrase "how the candidates would organise themselves". Credit was given to candidates who suggested that the class could divide itself into three groups with each visiting one of the three areas. With each group, opinions could be shared to get more reliable judgements and avoid subjectivity and bias. Doing the surveys at the same time would also ensure results were comparable between groups. Over half the candidates did this well but many suggested ways of carrying out the survey e.g. do questionnaires, ask a representative sample, or have each candidate do it on their own. Reading the question was crucial to success here.

(b) (i) It was pleasing to see that almost all candidates could add the total and be aware of the +/- factor ending with +11. Candidates did not always put the + sign before the 11 but that was allowed. A few missed the table out completely; those that ignored the plus gave 13.

(ii) Some candidates made no attempt to complete the graphs almost all of those that did scored both marks. A few plotted the 3 box correctly but did not shade the boxes for 1 and 2. Others tried to draw a vertical bar graph on the horizontal one but, overall, this was well done by the vast majority of candidates.

(iii) Candidates need to read hypothesis questions carefully. Here, for example, they were told that the candidates had decided the hypothesis was partly true so no decision was needed; they just had to give supporting evidence for that. Some candidates still gave a decision contrary to what they had been told e.g. true, true to a great extent, not exactly true or mostly not true. This was not penalised. Evidence used was generally good though candidates who compared every single features separately did not score well. What was needed was reference to the ages of the housing areas and overall judgements about which had the better environment based on scores of +11, +6, -14. Most candidates did use these figures but not always in relation to the age of the area and the reason why the hypothesis was only partly true.

(c) (i) Over several examination sessions sampling has not been a topic that candidates have done well in. They seem competent with the systematic technique but less confident with their knowledge and understanding of stratified and random techniques. That was the case with this question and this was one of the questions that candidates found hardest on the paper. The key to the question was its context. A questionnaire was to be used with residents about their views on parking and traffic problems. Candidates wanted to get a representative sample of people. Although it can be argued that all sampling techniques are representative in some way as they avoid bias, the only one that deliberately aims to get representative groups of people from a population is stratified which some candidates did choose and then went on to say because you can get representative groups related to age, gender or socio-economic groupings. Systematic and random techniques cannot guarantee these groupings and were given in equal measure and not credited. Use of the three major sampling techniques is the main area that Centres need to work on to improve candidate performance. A minority of candidates did not know a sampling technique giving answers such as tally, questionnaire and do a transect.

(ii) There was a pleasing response by most candidates here. They decided that the hypothesis was partly true because the scoring system suggested that A and B had problems with both whereas the newer area C disagreed that there were problems. Some candidates just wrote the statistics as evidence without stating how they linked to agree/disagree which was important. A few decided that any figure meant there was a problem without closely looking at Table 3.

(iii) Again some candidates made no attempt to complete the divided bar graph despite the empty graph paper being placed above a completed one making it as clear as can be that the graph needed completing as stated in the question. Candidates need to read the examination carefully and follow instructions to complete graphs carefully. Some candidates often do not get the marks they should simply because they do not complete simple graphs whereas many that do complete them get full marks. Most candidates did do this well but a few misplotted 39 and some did not shade according to the key especially the diagonal shading which was sometimes drawn in the wrong direction.

(iv) This question required specific ways to improve parking and traffic problems so just stating "make more parking spaces" or "more roads" were too vague to be credited. Candidates who suggested underground or multi-storey car parking, or off-road parking on brownfield sites were credited as

were those who gave a specific scheme such as ring--roads, flyovers, congestion charges or park and ride schemes for solving traffic problems. The majority did this and gained full marks.

(d) Here the question needed reading carefully. It required candidates to choose "another possible difference between housing areas" that could be investigated so this eliminated any previous investigations on the environmental survey sheet or parking and traffic problems. There was still plenty of scope for sensible practical investigation e.g. house prices, access to shops/services, safety, building heights. Some suggested these and scored quite well on the methodology. Candidates could score a maximum of two marks if they suggested an investigation which could possibly be carried out but was judged to be inappropriate or impractical such as finding out the income of people living in the housing, how healthy they were, each house's population structure, and a pedestrian count. Candidates could attempt to do these but would find many difficulties especially in asking people about their work and income. Candidates who suggested an investigation into a topic already covered in the question gained no credit.

GEOGRAPHY

Paper 2217/23
Investigation and Skills

Key Messages

- Practical skills questions need to be completed precisely.
- Given data should be interpreted to show understanding.
- In ***Section B***, careful analysis should be backed up with evidence.

General comments

This paper was comparable with previous sessions. Some questions were found to be more straightforward than others. In ***Section A*** this was the case with **Question 4**, **Question 5** and **Question 6** especially **Question 5(c)(ii)** and **Question 6(b)(i)**. Other questions were found to be more difficult by candidates such as **Question 1** and **Question 3** due to the sections of extended writing. In ***Section B***, the two questions proved to be of very similar difficulty.

A few candidates did not make any attempt at entire questions. Candidates should be encouraged to read and, if possible, attempt every part of a question, since where questions are skills based, not knowledge dependent, uncertainty of the topic need not necessarily prevent an attempt at the question.

Comments on specific questions

Section A

Question 1

(a) Using the map extract, in conjunction with Fig. 1, candidates were asked to identify the features. Feature A was huts. Some candidates had copied the entire key line including "staff quarters" and this response could thus not be credited. Land use at B was cultivation. A few put buildings, which was similarly shaded. However, the absence of the brown edging line should have been the distinguishing difference. C was smooth rock, and D was the spot height.

(b) The six figure grid reference for the Pen was any of 480760 or 479760 or 479759, due to its position straddling the main grid lines. Most went for 480760, with the most common error being 480761. Candidates should be encouraged to measure with a ruler, when asked for a six figure grid reference.

(c) The road type in 4374 was wide tarred. Most candidates had written this, while a few had instead described the road: "straight" or "smooth curve".

There were then 7 marks for a description of the route of the road, and the writing space was divided into sections to guide candidates with their answer. There were two possible points for direction: "goes south-west" and "turns south". A distance of 4700 m to 5000 m was acceptable. Features of the physical landscape included the crossing of bush and streams, mention of the gentle slope or location at the bottom of the steep slope, avoidance of high or steep land and heights between 1060 m and 1080 m. Features of the human landscape were that it was mainly on cultivated land, mention of the embankment and cutting, the passing of buildings or settlement and junctions with other roads.

Most candidates found the human landscape the easiest to score points on, but it was necessary to score at least 1 in each section, so very few achieved the 7 available marks.

(d) The trigonometrical station on Masimbe Hill was at 1573.2 m. 1573 m was acceptable but it was essential to give the units of measurement and this is where some candidates lost the mark.

(e) The last part of the map question was another extended piece of writing. Candidates had to locate the area shown on Fig. 2 and then describe the relief and drainage, with at least one point from each of these. There was plenty to write about here. It was high in the SE of the given area, rising to 1280 m. The steep slopes faced NW and led down to gentle or flat land in the NW. Small valleys had been cut into the slopes. These contained rivers, which were flowing NW as they descended to the cultivated area, where they vanished. Only one river crossed the cultivated land, giving a higher drainage density on the hill, where the tributary system formed a dendritic pattern. However, in the NW corner, springs emerged to initiate another river system.

Most candidates scored most of their marks for drainage. The term relief is not usually well understood. This did not appear to be the case this time, but candidates found it difficult to express themselves in enough detail to score more than a couple of relief points.

Question 2

(a) Candidates were told that Fig. 3 was a scattergraph. However, many did not appreciate what this meant, nor understood the idea of a best fit line, and instead linked the plotted points in a dot to dot fashion.

Those who drew a straight line with a negative gradient for **part (i)** could see the relationship clearly and thus describe it in **part (ii)**. Older tombstones have more surface reduction, while newer ones have less surface reduction. A few struggled to express themselves clearly. Phrases such as “longer dates have less reduction” were ambiguous.

(b) **Part (b)** was a knowledge question. Carbon dioxide or industrial emissions dissolve in rainwater and then, in a further chemical reaction, the acidic water dissolves the calcium carbonate in the rock. Several candidates wrote very good detailed answers but a partial description was more common.

(c) Candidates were now required to add four more plots to Fig. 3. Care was necessary to get these in the right places and a few candidates made minor errors. However, these did not change the interpretation of the graph and most were able to deduce that Wollongong had more acidic rain. Suggested reasons for this were industry, more urban emissions or simply more air pollution. Most candidates made a valid suggestion.

Question 3

(a) The photograph question showed an area of coastline with features to identify: A - arch; B – stack or island; C – cliff or headland; D – wave-cut platform; E – cave. A number of candidates did not appear to know some of these terms.

(b) Candidates then had to show how any one of these features was related to any of the others through processes of erosion. Cave to arch, cave or arch to stack and stack or cliff to wave-cut platform were the main ideas, with erosion exploiting the weaknesses, enlarging the cave/arch or undermining the cliff/stack leading to collapse. Many candidates this session seemed unfamiliar with these ideas and many attempts at explanation were very basic.

Question 4

(a) Information to answer this question was provided in Fig. 4, which clearly showed maize occupying a large area of the farm. The tree crops could be identified in the key as banana and mango. Most candidates scored well in this section.

(b) The fenced compound had an entrance track, and from the gap in the fence, where the track entered, to the river was SW or SSW for the most direct route. A generous allowance of 45 m – 60 m was given for the distance when marking. Many candidates were within this range.

(c) The map in Fig. 4 showed a variety of features in addition to cultivated land which could be taking up land which would otherwise be cultivated. Rocks, the road or track, scrub, the river, the huts and the area used for cattle were all taking up land space. Many candidates opted for one of these but a few either misread or misunderstood the question and chose maize.

(d) Chickens and goats were kept in the fenced compound. Most candidates were able to come up with a couple of good reasons for this as there were many possibilities, including near huts for shelter, near people as they need a lot of attention, to control weeds / grass in the compound, to fertilize the trees, to prevent them escaping, eating the crops and straying on the road and to protect from predators or theft.

Question 5

(a) **Question 5** focused on the Canary Islands, of which El Hierro is the furthest west. Most had selected this one but a few had muddled east and west and went for La Graciosa. The latter was the focus for **part (ii)**, where its size had to be estimated via comparison with the neighbouring Lanzarote. 30 km^2 was the correct answer. The most common incorrect answer was 8 km^2.

(b) Candidates had to complete the graph part of Fig. 6 to show La Palma with an average population density of 120 people per km^2. Most did this correctly.

(c) Reading from Fig. 6, the population density of Gran Canaria was 540 people per km^2 and Tenerife was the island with the highest population. Most candidates found this to be straightforward. A few wrote the population total in **part (i)**.

(d) Most candidates knew how to complete ranking of data and thus did this correctly, with Lanzarote at 3, La Palma at 4, Fuerteventura at 5, La Gomera at 6, El Hierro at 7 and La Graciosa at 8.

This had some correlation with population total – a weak positive relationship, with rankings reversed for Gran Canaria / Tenerife and La Palma / Fuerteventura. Candidates struggled to say something relevant here and quite a few simply resorted to defining the terms used.

Question 6

(a) Fig. 7 described the industrial process of making chocolate. Candidates had to show their understanding of industry as a system. The main input was cocoa beans. It was essential to include the word “beans” as cocoa is used in conjunction with other words in the passage too. Most candidates responded correctly. A few put one of the emboldened words, which were all processes.

(b) Moving on to processes and then outputs, in **part (i)** candidates had to insert two processes into the flow chart. These were emboldened on Fig. 7, to aid candidates in extracting the relevant information. The first process was cleaning and then after roasting, cracking, and grinding, came pressing. Most candidates found this straightforward. A few had repeated one of the processes already filled in on the chart.

The penultimate paragraph on Fig. 7 gave further details about the conching process. To produce the finest quality chocolate, conching needed to occur for a longer period of time. Some wrote this but many simply copied “the finest chocolate should feel totally smooth on the tongue” as they had spotted the words from the question in that sentence.

In **part (iii)**, product A was cocoa butter and product B was chocolate. Many candidates found this straightforward.

(c) Candidates then had to consider factory location and name two factors that would affect it. There was plenty of scope here: distance to raw materials, distance to market, labour supply, transport routes, energy supply, size or cost of site and government policy. Most candidates came up with two valid points.

Section B

Question 7

(a) (i) Most candidates identified two advantages of digital measuring instruments. The most common ideas were accuracy, ease of reading and quick to get a measurement.

(ii) This question proved to be a good discriminator using the full range of marks. The most popular features to be identified were that a Stevenson Screen is white, on legs above the ground and contains slats or vents. Many explanations were appropriate to the identified feature. Common mistakes included vague descriptions such as 'above the ground' or referring to wind getting into the box rather than air circulating. Weaker candidates claimed that the screen is above the ground to be out of the way of animals or flooding. Some answers were irrelevant because they explained the location of the Stevenson Screen rather than its features.

(iii) Most candidates correctly chose to put a thermometer inside a Stevenson Screen.

(iv) Most candidates correctly suggested wind speed, wind direction or cloud cover. Some candidates just wrote 'wind' which was not accepted. The other error was made by candidates who chose one of the elements on the given list.

(v) Quite a large percentage of candidates failed to answer this question. Where candidates made errors it was in suggesting either element could be measured by an anemometer or naming a hydrometer rather than a hygrometer to measure relative humidity.

(b) (i) Many candidates answered the question poorly. Candidates described how a maximum-minimum thermometer works rather than how it is used. Consequently candidates explained the different heating properties of mercury and alcohol rather than concentrating on how the indices were moved and left at the highest and lowest temperatures. Few candidates explained simple ideas such as read the thermometer at eye level, read the temperatures once per day, or use a magnet to reset the indices.

(ii) Candidates gave much better explanations of how rainfall is measured using a rain gauge. Candidates focused on collection of rainfall in the jar and using a measuring cylinder to determine the amount of rainfall. Some candidates thought that the rain gauge had to be underground and others focused on where a rain gauge may be positioned, such as in open ground or away from trees, rather than how it is used.

(c) (i) Most candidates who attempted the question plotted both points within tolerance and completed the line. However, there were a large percentage of candidates who did not attempt the question.

(ii) Most candidates correctly concluded that the hypothesis was true. Their supporting evidence included the bigger space between minimum and maximum temperature lines on the Pretoria graph. Many candidates used statistics from the graphs or table to indicate where the relationship was proved and also to identify anomalies. Some candidates just referred to the highest and lowest diurnal ranges without using a daily comparison.

(d) (i) A significant proportion of candidates omitted this question. Candidates who did complete the graph generally plotted the bars within tolerance. Some candidates misread the scales and plotted the bars by using the temperature scale on the left hand axis rather than the rainfall scale on the right hand axis.

(ii) Most candidates made the correct decision to disagree with the hypothesis. They usually gained a second mark by stating a more accurate relationship or saying that there is very little relationship between rainfall and temperature increase. Candidates found it quite difficult to choose appropriate data to disprove the hypothesis other than stating that the maximum temperature had no rainfall.

Question 8

(a) (i) Most candidates realised that the students had gone in different directions within the CBD and consequently building height or usage and land use might vary. Some candidates incorrectly focused on student error as a reason.

(ii) This question was another example of a graph completion question which was not attempted by a significant proportion of candidates. It should be noted by candidates that not all questions on this paper involve written responses and thus some will not require lines for responses. Most candidates who did the question plotted the two bars accurately.

(iii) The question differentiated between candidates well. Most candidates reached the correct conclusion that the hypothesis was partly correct. They then backed up that conclusion by recognising that it was true for the north and west transects but false for the south and east transects. They then gained further credit by using data from the graph or table to support these two different conclusions.

(iv) The most common reasons suggested for variation in building height were that it varied according to the price of land and the use of the land. Most candidates included one or both of these reasons in their answer.

(b) (i) Nearly all candidates correctly used the key to shade the restaurant and hotel. A small number of candidates shaded only the restaurant and left the hotel blank.

(ii) Nearly all candidates correctly identified that there were 12 offices shown on the map.

(iii) Candidates who scored the mark usually did so by reference to issues such as lack of time or lack of access to the buildings to investigate upper floor land use. Some candidates incorrectly made the assumption that ground floor land use will be the same as on upper floors and so there was no need to check it. Weaker candidates just stated that it would be hard, without suggesting a reason why.

(iv) Many candidates who attempted the question did well in completing the pie graph. Candidates generally plotted accurately but many candidates lost one mark by choosing their own order of segments rather than following the pattern of the key and the other pie graphs. Some candidates also made errors in shading the segments by not following the shading patterns shown in the key.

(v) Whilst many candidates could identify differences between the two pairs of transects some failed to score marks by not making a comparative statement to show the difference. Some candidates just gave two statistics for a land use category with no comparison or interpretive word such as ‘only’. Lack of examination technique therefore handicapped these candidates.

(vi) Candidates generally scored well on this hypothesis interpretation question. Most concluded correctly that the hypothesis was true and supported their conclusion with statistics or interpretation of the figures from the table or pie graphs. Thus they compared land use in the CBD with one or more transects. The most popular categories of land use which they compared were residential, commercial and offices. A few weaker candidates merely listed the land use percentages of the CBD and four transects, which gained no credit.

(c) This was a challenging question which differentiated well. More able candidates explained differences in cost of land, access, transport and raw material availability. A minority also referred to how a city might grow and develop over time. Weaker candidates incorrectly explained land use was affected by population density. Other candidates described land use zones rather than explaining them.

(d) This question also proved to be a good discriminator between candidates of different ability. Weaker candidates tended to give generic improvements which they may have learned but may not be relevant to this fieldwork exercise. Ideas such as repeat the investigation next day, do the investigation in more groups, repeat the investigation at another time of year or in another city are either too vague to gain credit or will not improve the data collection which has been done for this particular task. The improvements which were suggested and did gain credit included recording upper floor land use, lengthening the transects to go further from the CBD, investigating the number of storeys of more buildings or at more locations along the transects to get more reliable results, and investigating land use along more transects from the city centre in directions such as north west and south east of the CBD.