

GEOGRAPHY

Paper 2217/12
Paper 12

Key messages

In order to perform well on this paper candidates should:

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

General comments

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

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

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

Comments on specific questions

Question 1

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

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

Question 2

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

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

Question 3

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

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

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

Question 4

This question was chosen by many candidates.

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

Question 5

This question was chosen by many candidates.

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

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

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

Question 6

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

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

GEOGRAPHY

<p>Paper 2217/22 Investigation and Skills</p>

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 years. In **Section A**, **Question 3** proved the most accessible particularly **Question 3(b)(i)**, and **Question 6**, particularly **Question 6(b)(i)** and **Question 6(b)(ii)**. Conversely candidates found labelling the cross section in **Question 1(d)(ii)** challenging and this is something that needs to be practiced.

In **Section B**, the proportion of candidates choosing each question was fairly even. Candidates found **Question 7(d)**, **Question 7(e)**, **Question 7(f)** and **Question 7(g)(iii)**, challenging while those who tackled **Question 8** found **Question 8(c)(i)** difficult. In both questions the most accessible element was the opening part, so candidates need to scrutinize the whole question before deciding which to answer.

Candidates need to revise the meaning of command words and use the number of marks available as a guide to the number of points that they need to make in their response.

Comments on specific questions

Section A

Question 1

- (a)(i)–(iii)** The 1:50 000 map was of Andenne, Belgium and Fig. 1.1 showed some features in an area on the eastern side, which candidates were asked to identify. A was a sports complex. B was a station, but sidings and halt were also accepted in this case. C was a water tower. The response tower was insufficient as there was a clear difference in the symbols here.
- (iv)** There were two marks for identifying the type of road at D, with the key being arranged in a matrix and giving two pieces of information. D was a secondary road, 7 metres wide or more, with two or three lanes. Candidates typically scored one as they only gave one piece of information. The extra line space and the mark allocation should have indicated the need for greater detail.
- (v)** The height of land at the pylon at E was 200 metres to 209 metres. The symbol was touching the 200 metre contour line, but extended away from it uphill. Many candidates wrote 200 but did not all add the units of metres, thus missed out on a mark.
- (vi)** The area of mixed woodland, shown by the darkest green on the map, was an irregular shape within the grid square 4993. Any irregular shape within that square gained two marks, while shading beyond the square achieved one mark. There were many correct answers but also a relatively high omission rate on this question.
- (b)(i)** The N90 road was between 9400 metres and 9800 metres across the area of the map extract, in the direction of WSW to ENE or simply west to east. Few candidates scored two. Some had the

direction correct but few got the distance and there was a wide range of suggested answers, showing little understanding of the scale.

- (ii) Candidates were then asked to describe other features of the road and many pointed out that it followed the river, along the valley. Most gained a second mark by either mentioning a road junction or an adjacent land use, of which there were many.
- (c) (i) Fig. 1.2 showed the two islands in the river, labelling them F and G. Candidates were asked for a similarity between the islands and many simply wrote that they were in the river, information given in the stem of the question. Some responses identified that the two islands were of similar size and shape.
 - (ii) Many responses noted the vegetation on G that wasn't present on F, and the bridge/dam and locks on F that were not present on G. It was necessary to mention both islands to make the difference clear. Seeing some of the structures on island F as a railway was a common error. Candidates should be encouraged to consider whether their answers are actually realistic.
- (d) (i) Fig. 1.3 was an incomplete cross section, requiring completion on the western end. This area was relatively flat, and candidates scored the mark if their line met the vertical axis between 150 metres and 200 metres. There was a high omission rate on this question.
 - (ii) Candidates then had to show the position of features on the cross section. Measuring from the western end, the N921 road was at 109 mm to 113 mm, the road from Landenne to Chap. Ste-Marie was at 80 mm to 84 mm and the most easterly power line was at 97 mm to 101 mm. Many answers were inaccurate or incorrect. Candidates should practice this skill by measuring the positions on the map and then transferring these measurements to the cross section. Again, omission rates were high.
- (e) The final map question was a six-figure grid reference. The trigonometrical point at Groyne was at 476925. Most were in the right square but the 3rd and 6th digits were not always correct.

Question 2

- (a) (i) Fig. 2.1 showed settlements on the island of Corsica and candidates were asked to describe the location of the large towns. There was a mark for compass directions (W, N or NW) and others for lowland and coastal. Many responses picked up both marks. A few misinterpreted the key and said that the large towns were in the highland areas.
 - (ii) Candidates were then asked to suggest why the large towns would be at these locations. Answers commonly focussed on the coastal location, suggesting ports for trade and beaches for tourism. Those that had noted the low land in **part (i)** often commented on the flatter landscape enabling easier building. Some responses pointed out the better climate of the coastal area and the better conditions for agriculture or fishing. There were plenty of possible answers here but relatively few made 4 points. Candidates should note the mark allocation to help them with this.
- (b) The small towns were located differently, with some inland, some on the higher land and some in the south and the east. As there were more of them, they were also closer together. Most candidates scored at least one for this question. Incorrect answers tried to relate to the rivers or the peaks.

Question 3

- (a) (i) Fig. 3.1 showed the climate of Singapore. Candidates were told that the annual range was 1°C and were asked what was meant by annual temperature range - the change in temperature over the year given by the difference between highest and lowest temperature. Generally answers were correct; however some responses did not express the range clearly, stating that it was the same as the average temperature.
 - (ii) Candidates were then asked to state the calculation that resulted in the temperature range of 1°C. They were specifically told to use data and needed to select figures from the graph to give 31–30. Some responses did this correctly, but others simply restated the definition from **part (i)** in an equation format or calculated the average.

- (b) (i) Next was a straightforward graph completion and it was pleasing to see that most candidates did this successfully and that relatively few skipped past the question.
- (ii) Candidates were asked to estimate the annual total rainfall. They could calculate the amount accurately but adding each bar and then selecting the closest answer but rounding the bars to the nearest 100 mm gave the same result much more quickly. The answer was 2000 mm and many were correct.
- (iii) Rainfall occurred in every month of the year with at least 100 mm in each month. The peak of 380 mm was in December, with the minimum of 110 mm in both February and May. Monthly totals were rising from August through to December, while there was very little fluctuation between February and September. Thus, there were a number of approaches to describing the annual distribution of rainfall with most responses scoring at least some of the marks, particularly those that made simple statements rather than trying generalisations. Errors which often occurred were as a result of confusing March and May or April and August.
- (c) The conclusion of the question was that the climate could be described as hot and wet. Many responses were correct. Most were in agreement that it was hot, but some had opted for dry. Candidates need to consider the scale of the graph, rather than just making a judgement from the size of the bars.

Question 4

- (a) (i) Fig. 4.1, a map of South America, showed the epicentres of earthquakes over a seven-day period and candidates were asked to define the term epicentre. There were some good answers but many responses confused epicentre with focus, or said that it was above the focus but did not link to the ground surface.
- (ii) Intensity measures the effects of an earthquake. Candidates had to select this option from the four given. Most responses incorrectly assumed intensity to be the energy released by the earthquake.
- (b) (i) The earthquakes shown on the map were to the west of the continent, towards the Pacific coast, with some located in the sea. They were also clustered in groups, with areas of inactivity between. Typically, candidates scored two of the three available marks.
- (ii) Earthquakes are found on plate boundaries because the plates are moving at different speeds or in different directions. Pressure builds up which is eventually released. Many responses made these general points. More specific comments, which were seen less frequently, were subduction, mountain uplift, magma rising in volcanic action and that earthquakes could trigger each other as aftershocks.

Question 5

- (a) Fig. 5.1 was a photograph of a rural area and candidates were asked to describe the relief. There was an area of highland, with bare rock cliffs and steep slopes, leading down in a step fashion to more gentle slopes in the valley below. Answers typically noted the highland but then wrote about gentle slopes without locating them. Responses that did not understand the term relief usually wrote about vegetation, often in relation to climate.
- (b) At first glance, the trees in Fig. 5.1 may appear to be randomly distributed. Those candidates who looked carefully could see that the trees were at the bottom of the valley, by the river, and around the buildings. A few answers spotted that the trees were positioned on the field boundaries and many said that they were on the slopes, 'the steeper slopes' was needed to more clearly define the position.
- (c) Below Fig. 5.1, Fig. 5.2 showed another rural area and candidates were asked to contrast the relief and land use of the two. Responses typically noted the steeper slopes in Fig. 5.1 and that the land was covered in grass, unlike the bare ground in Fig. 5.2. Some went on to suggest pastoral farming in Fig. 5.1 with arable in Fig. 5.2. Some answers stated that there was farming in Fig. 5.2 but none in Fig. 5.1; this was too vague to be credited. Some candidates noted the houses in Fig. 5.1 and their absence in Fig. 5.2. Other creditworthy answers were on the difference in field size and field boundary type. Most responses scored one or two marks. Weaker answers did not compare or did not make it clear which area was being referred to.

Question 6

- (a) (i) Fig. 6.1 showed the country of origin of transnational corporations investing in Southeast Asia and candidates were asked the percentage of investment from other Southeast Asian countries in 2014. With the help of a ruler to determine the scale, measuring the relevant section on Fig. 6.1 gave a value of 17 per cent, though 16 per cent and 18 per cent were also acceptable, to allow for those who had made the judgement by eye. There were a good number of correct answers. The most common errors were answers around 38 per cent and 55 per cent, these being the positions of the relevant bar against the scale.
- (ii) In 2015 the percentage of investment originating from the USA was 10 per cent. There was no tolerance here since this was easier to judge by eye and there were plenty of correct responses.
- (b) (i)–(ii) The country with increasing percentage of total investment, from the three given, was Japan, while for decreasing percentage the answer was USA. Most answers were correct.
- (c) (i) Candidates were told that a Japanese car-manufacturing transnational corporation had invested in Southeast Asia by building several factories and asked to suggest two advantages for the company of locating factories there. Most commonly answers suggested a good labour supply. Less commonly responses mentioned cheaper land, financial incentives, cheaper running costs, such as electricity, and access to a larger market. A common error here was to write about the advantages for the country rather than for the company.
- (ii) For two advantages for people living near to the factories, many responses mentioned jobs or the opportunity to learn new skills, or better local facilities. Many answers suggested that the local people would have easy access to the product, but it was often written in a very generic way. Candidates needed to clearly point out that the local people might get access to cheaper cars to gain the mark.

Section B

Question 7

- (a) The vast majority knew that CBD meant *Central Business District*. A small percentage of candidates did not respond to this question.
- (b) (i) Carrying out a pedestrian count or survey is usually one of the most popular and common fieldwork exercises that take place in secondary schools. Most of the candidates that did attempt this question gained two or three marks for drawing a recording sheet that mentioned Site, Date/Time, provided a space for tallying (with examples) and a space for a Total count. These candidates also focused on the pedestrian count as required in the question. Some of the candidates tried to create a recording sheet that included a survey of building heights and traffic controls despite the question referring to pedestrian counts only. A few suggested video surveillance and use of cameras. It is vital for candidates to read questions carefully.
- (ii) Candidates who had been taught – or had experienced – how to carry out a pedestrian count did this well. They referred to doing the work in groups and dividing the jobs between candidates e.g. one counting and one recording. They also mentioned deciding how to do the count, for how long and the number of times in a day or doing it over several days. References to the equipment to be used such as a counter, tally chart or stopwatch were less present but occasionally stated and credited. A few described how they would choose sites, ignoring the fact that they had been told that the 30 sites had already been chosen. Too many focused on sampling – either systematic or random – which is totally inappropriate to counting the number of pedestrians passing a point in a fixed time. Maybe they were confused by a tallying system which, while counting all the pedestrians, marks them off after every 5th count? A few gave unsuitable responses including putting marks on or giving tickets to pedestrians so they were not counted twice, or dividing them into perceived age groups. Some ignored the question and wrote about how they would carry out a traffic survey or measure building heights.

- (iii) There were three different types of response to this question. Quite a few candidates did realise that the 200 isoline should be drawn between $\frac{182}{209}$ and $\frac{156}{270}$ and drew that line correctly for two marks; others drew the line the wrong side of the 209 plot but correctly through the $\frac{156}{270}$ area gaining one mark and there was the third type of response where a significant minority made no attempt to answer it. A small number also drew the line through the existing 209 and 270 points. This straightforward completion diagram had, by far, the highest *No Response* figure on the paper. Presumably the candidates assumed it was complete and did not see the instruction at the top of the page.
- (c) This was well done by candidates who stated that the advantages were that the method of counting would be easy, quick or save time. Many candidates realised that disadvantages included the fact that the storeys might be different heights or that the selection of five buildings could be subject to bias. Weaker responses just referred to the method being accurate or not being exact or that the buildings might all have different storeys which are not relevant to how counting storeys might be a good or bad indicator of height.
- (d) The question required candidates to suggest three traffic restrictions that they could have recorded in a town; these needed to be permanent restrictions that limited the movement of traffic. Many candidates just listed any methods of traffic management or control rather than restrictions such as traffic lights (robots), roundabouts, speed limits, temporary closures for events, accidents or roadworks and the use of traffic police – none of these were appropriate. Responses which gained credit wrote, for example, about one way streets, bus or cycle lanes, and areas with height/weight restrictions, tolls or congestion charges and no parking areas.
- (e) Candidates appeared to focus their answers more on comparing boundaries rather than comparing areas that were delimiting the CBD by various means; very few compared the areas as evidence to disprove the hypothesis that different methods produced the same result. The strongest responses did compare the area delimited by the buildings that were three storeys or more with the area with more than 300 pedestrians or with any of the other areas. Many responses only focused on one method without any comparison with another area yet, to disprove the hypothesis, it was essential to compare two areas rather than different boundaries in order to confirm that each method did not produce the same result.
- (f) This question stated that these candidates chose a **different** fieldwork method to delimit the CBD but many candidates referred to the three methods mentioned in the previous question, i.e. checking whether buildings were high or there were a lot of pedestrians or whether traffic was busy – none of which was relevant to this question. A few responses did note that looking at land use was a different method and did suggest starting by identifying the land use in the area and then deciding which ones were relevant to a CBD thereby helping to delimit a boundary on a map and using a key to denote the land uses which were and were not part of the CBD but these were few and far between. Some responses suggested drawing an isoline around the CBD land uses. Very few gave any details about the creation of a land use map with a key, shading or a scale. This was the least well answered question by candidates on the whole paper with a high *No Response* rate.
- (g) (i) Plotting 17 on the provided axes at Site 12 was done well in most responses and plotted within the tolerance allowed. Although – on this occasion – shading did not count towards the mark, candidates should be aware that the shading used on other bars should be copied rather than shading any plotted bar in any style. Sometimes the correct shading will count towards the mark. Again a high percentage of candidates did not attempt this question yet those that did gained a straightforward mark.
- (ii) Most candidates agreed that the hypothesis was true and most could provide evidence of two sites with different index numbers although they did not always state the site number and just said that the lowest was 14 and the highest was 30. A few did provide spatial evidence of variation, e.g. stating that Site 8 with 30 was the highest which was in the CBD and the index decreased as you moved farther away from the CBD, but not many answers gave such an overall view. Some responses just listed each site with its index number thereby producing a long and tedious answer which gained one mark for stating one paired data difference.

- (iii) This question wanted to know how, in carrying out the shopping survey, candidates could have improved its reliability. Clearly the candidates that had carried out the survey had only used one street from north to south as part of the CBD so it could have been more reliable if they had surveyed other streets around the CBD. It would also have been important for candidates to have discussed and agreed on the meaning of the 1–5 criteria in the survey as well as having different groups carry it out at the same time to compare results. Answers along these lines scored well. However many responses described what they would do if they did it again, e.g. have more groups, do it at a different time of day, do the survey when the shops were open or repeat the ‘questionnaire’ (it was a survey carried out by candidates not a questionnaire) and ask shoppers to complete the survey. Along with 1(f) this was the least well answered question on the paper.
- (h) It was important, in suggesting how a CBD might change, that candidates did refer to an increase/decrease or less/more in their answers as quite a few just suggested what might change, e.g. ‘*the buildings might change*’ which was too vague and did not predict how they might change. The strongest responses suggested that CBDs could expand or decrease, that shops or businesses could increase or decrease and that there could be more high-rise buildings and more pedestrianisation for example. The question did not require suggestions regarding social aspects of the CBD such as increased crime or homelessness, more pollution and traffic or changes in population. Physical changes rather than social changes were required for credit here.

Question 8

- (a) (i) Almost all candidates did well on this starter question; only a small number gave answers other than the correct one which was Hypothermia. Incorrect responses included drowning; cliff collapse and a few gave the ‘*Likelihood*’ number from the table – usually 4 – rather than the hazard associated with it.
- (ii) The correct and common responses that most candidates gave included staying away from the cliff, wearing warm or waterproof clothes and staying together in a group or carry a mobile phone. It was not accepted to suggest wearing a hard hat to avoid cliff collapse as the work was on the beach and so the candidates should not have been going near or on the cliff edge in any case. Vague answers such as wearing suitable/appropriate clothes needed specific examples. A few gave practical engineering solutions to avoiding cliff collapse which were irrelevant to the question such as building a barrier or sea wall near the cliff.
- (b) (i) Linking the erosional process to its definition was done well by most candidates. Almost all responses linked *Solution* to its correct definition beginning ‘*Acids...*’ but a few linked *Hydraulic Action* to the first *Definition* and this was often followed by *Attrition* being incorrectly linked to the *Definition* in the 3rd row which should have been matched with *Hydraulic Action*.
- (ii) Candidates should have used the photograph in the Insert to recognise that there was no protection at X which was exposed to waves but that there was protection from a beach, sea wall and groyne at Y. It was important that candidates did state or describe the protection function of the engineering – a few just stated that there was a sea wall or a groyne at Y without saying what its function was or how it protected the beach. A number of candidates made no reference to X or Y in their answer so it was not possible to credit these when it was not clear whether they were referring to X or Y and a small number confused X with Y giving the reverse answers required.
- (d) (i) Measuring the profile of a beach is a standard fieldwork technique involving ranging poles which are used at a fixed distance or at a break in slope, a measuring tape and a clinometer to measure angles along the transect. Candidates who had experienced this, or had been had taught the technique, did this well often scoring four marks halfway through their answer. Many responses only mentioned putting a ranging pole at the cliff edge and at the low water mark, measured this total distance and tried to read an angle from one pole to the other. A number just referred to the equipment they would use and stated that they would measure the profile using this equipment. Many responses showed limited knowledge of the equipment they would use, e.g. references to ‘sticks’, ‘measurers’, and ‘protractors’. A small number seemed to think that one ranging pole was put on one beach and another on the separate wave-cut platform and the angle was taken between them. It is worth noting that several candidates wrote that the clinometer was used to measure the gradient – it does not do this; it measures the angle of the slope which can then be used to help work out the gradient.

- (ii) It is important to note here that candidates will not get credit for copying out the hypothesis word for word if they agree with it – there has to be evidence of a decision that they have made about the hypothesis. Here most candidates did state that the hypothesis was correct and also recognised that the beach profile was shorter and higher therefore making it steeper. While this was true, evidence from Fig. 2.3 was required in the form of data, e.g. the beach was 2.2 m high but the wave-cut platform was 0.9 m high, and the beach profile was 19 m long but the wave-cut platform was 24 m long or 5 m longer. These measurements were essential to get the full three marks rather than just giving a valid description. Many did give the comparative height data but not the length data.
- (e) (i) The two plots were accurately marked by almost all candidates that attempted this question however it did have a high *No Response* rate indicating that too many candidates assumed the graph was complete despite the emboldened instruction above it requiring them to **'plot the results'**.
- (ii) The vast majority of candidates made the correct choice regarding the hypothesis on this question.
- (iii) Clearly any credit for this question needed to support the correct choice in (ii); if candidates had made an incorrect choice then no credit could be awarded in this sub-section as it would be supporting a wrong answer. Most candidates did support their correct choice by stating that the figures for infiltration on the beach were at much higher rates – indeed always higher – than on the wave-cut platform where infiltration was much slower. A second mark was awarded for providing accurate comparative data, e.g. maximum infiltration on the beach was 120 mm per minute as opposed to a much lower maximum figure on the wave-cut platform of 12 mm; or that the beach infiltration was always over 30 mm but the wave-cut platform was never more than 12 mm. Some candidates compared the same horizontal measurement point instead of taking the overall view, e.g. comparing 120 mm with 10 mm on measurement D which was not credited.
- (iv) This was done well with most candidates correctly matching the *Groynes...* statement with the *Wave-cut platform...* statement.
- (f) (i) The divided bar graph was well done by a large majority of candidates who plotted 71 very accurately and then added the correct diagonal shading. The only candidates who gained less than two marks were those that did not attempt it and those who shaded the diagonal shading in the wrong direction despite plotting it correctly.
- (ii) The pie graph required a plot at 81 per cent going clockwise around the graph in the direction of the key. Most candidates who attempted this managed a plot within the accepted tolerance levels and shaded the two slices correctly in the right order. A few plots were too close to the 80 mark and the smaller slice was shaded with diagonal lines instead of the horizontal lines required for *residents* as illustrated in the key. A few responses incorrectly plotted the graph anti-clockwise thereby having a plot at 89 per cent – 11 per cent from the top – and gained no plotting mark although, if the larger slice was shaded with the correct *visitors* shading, a mark could be gained provided the smaller slice had the correct horizontal lines.
- (iii) While a number of candidates did not attempt this question, it proved it be a very reliable discriminator in that most candidates gained the range of marks from 1–4 depending on how they described and interpreted the statistics for each of the questions illustrated in the Insert. Many responses used terms like *Most/The majority...* and clearly understood that the majority meant over 50 per cent of the people that answered the questionnaire. Some limited credit was awarded for using vague terms such as *Many/A lot...* a more precise use of language was needed. A few mistakenly stated that most or the majority favoured Groynes as a method – this was not true as 38 per cent is not most or the majority – it was however the most popular or preferred option but not a majority choice candidates need to be careful of their use of the term *'Majority'*. A few candidates gave their own opinions instead of judging those of the residents. A number of candidates only listed all the higher percentage figures from each response table despite the question stating *'Refer to the results in Table 2.3 but do not copy them out!'*