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GEOGRAPHY

Paper 0460/12
Paper 1

Key messages:

In order for candidates to perform well on this paper they should:

- follow the rubric correctly, answering only three questions, one chosen from each of ***Sections A***, ***B*** and ***C***
- study the whole paper and resources provided carefully before embarking on writing answers to their three chosen questions
- answer all parts of the three questions they choose in the spaces provided, including questions involving the completion of maps or graphs (e.g. **1(a)(i)**)
- respond in the correct way to all command words and words which indicate the focus and context of each part, avoiding including material which is not relevant
- learn geographical words and phrases and be confident in using them correctly
- use comparative words to describe differences between features shown on source material
- take careful note of the mark allocations and space provided in order to write answers of an appropriate length
- write clearly avoiding vague words or statements which should be qualified or elaborated (e.g. pollution, overcrowding, facilities)
- attempt to develop ideas or link them to others when extended writing is required in those questions worth five or more marks
- use and interpret various types of graphs and diagrams with confidence and accuracy to support ideas
- interpret photographs, graphs and maps with precision, looking at them carefully and referring to the evidence in them. When the word 'only' is used in a question ensure that the answer is based entirely on the source material provided.
- be able to describe a distribution from a map and distinguish this from describing the location of a specific feature
- have a wide range of case studies and choose them with care to fit the questions selected, including relevant place specific information whilst concisely answering the question set

General comments:

An high number of very able candidates in this cohort performed very well across the paper and showed excellent geographical knowledge and understanding, writing answers of a consistently high quality. There was a wide range of marks and most candidates, whilst not performing as consistently across the paper, did make a good attempt at many parts of their chosen questions, enabling the paper to differentiate effectively between candidates of all abilities.

There was a very small number of rubric errors, though it was rare to see scripts where all six questions had been answered. Those few candidates making rubric errors tended to answer three or four questions from the six, selecting two from the same section rather than one from each section.

Responses were usually in an appropriate amount of detail. Occasionally answers worth a small number of marks were of excessive length and answers to questions worth more marks were too brief, however most candidates were guided by the mark allocations and space provided, the best responses being concise, yet detailed and accurate in content. Many candidates made effective use of the continuation sheets at the back of the question and answer booklet, however some needed to do so as they included far too much irrelevant material in their answers.

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Questions 1 and **3** were the most popular questions, with **Questions 5** and **6** being of roughly equal popularity. There were good answers seen to all questions, including those requiring extended writing, particularly the case studies on population policy, causes of a volcanic eruption and transnational corporations. Whilst some included unnecessary general introductions with irrelevant information about the topic being tested, the best of these answers were well focused and understood, with developed or linked ideas and place specific information. Whilst a considerable number of well-informed candidates did develop their ideas many were generic with little place detail to support them. Less impressive responses were poorly focused with brief lists of simple points, sometimes in bullet points, not all of which were relevant. This was particularly apparent in answers to **Questions 2(c)**, **4(c)** and **6(c)**. Some candidates did not score marks consistently across the paper as they did not respond correctly to key words such as 'physical factors' in **1(a)(iv)** or 'employment structure' in **5(a)(iv)** and missed significant words like 'only' in **3(b)(i)** and 'describe' in **6(b)(i)**.

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

Comments on specific questions

Question 1

(a) (i) Most candidates shaded the region correctly, however there was a significant number of candidates who omitted the question.

(ii) Almost all candidates ranked the regions in the correct order of population density.

(iii) Many candidates referred to the direct evidence of at least two of agriculture, manufacturing and mining from Fig. 1.2. Some suggested reasons for these activities (e.g. fertile soils, coastal location, water supply, wealth) rather than focussing 'only' on evidence on Fig. 1.2.

(iv) Whilst there were many excellent responses, many weaker responses did not know what 'physical factors' were or gave vague responses (e.g. good climate). Some candidates did not gain credit because they did not link the factor to how it influenced population density (i.e. whether it resulted in high or low population density). Correct ideas typically referred to relief, temperatures, lack of rainfall and soil fertility, and successful candidates expressed the idea of higher or lower density in different ways (e.g. 'attract people', or 'people like to live', or 'population declines'). These types of expression were accepted.

(b) (i) Most candidates correctly identified traffic congestion or noise/air pollution (Fig. 1.4), and water pollution (Fig. 1.5). However, fewer were successful in identifying the problem caused by overpopulation in Fig. 1.3 (i.e. the lack of open space/green spaces). The photograph shows part of an established urban area with what appears to be several services such as a large place of worship. Whilst little open space can be seen there is no obvious evidence of a lack of housing or the houses being overcrowded, poor quality or lacking in amenities. It is not a squatter settlement as many candidates suggested.

(ii) Candidates who correctly understood the focus of the question scored well, with most answers focussing in detail on the reasons for rapid population growth which may contribute to overpopulation. There were fewer detailed responses which included reference to limited resources. Some candidates misinterpreted the question and defined overpopulation and then described its consequences.

(c) Most candidates used China's one child policy as their case study. There were many high-quality answers about this policy, where candidates included specific details about the incentives and the penalties associated with the policy, along with details on how it was enforced. There were also answers about pro- and anti-natal policies in Singapore and pro-natal policy in France and Russia, the most impressive being those about the French 'Code de la Famille'.

Whatever case study was chosen many candidates included irrelevant information, sometimes at the expense of a full description of the policy. This tended to include detailed reasons for the policy and an evaluation of it, neither of which was required for this answer.

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Question 2

There were few responses to this question, in particular very few high-quality ones were seen. A significant proportion of the responses were from candidates who made rubric errors.

(a) (i) Most candidates gave a correct definition.

(ii) Most candidates correctly identified the settlement patterns, although some suggested linear.

(iii) Many responses did not show an understanding of the meaning of the term 'linear' and their answers could have been referring to any settlement (e.g. near a river, near a road). The required focus was 'along' a road or river/valley not simply close to it

(iv) The question discriminated well. Well prepared and perceptive candidates gave details of types of services and used appropriate terms such as sphere of influence and threshold population in well-constructed comparative responses. Weaker responses tended to identify services present in urban settlements but did not contrast these with services found in rural settlements or focussed on other aspects of urban and rural settlements, such as employment.

(b) (i) Many candidates did not interpret the map correctly, suggesting rivers, roads and woodland as original growth factors which would have been unlikely at that location. Woodland is some distance away, as are the main roads and rivers. Typically, marks were scored by reference to the farmland. Few suggested a defensive site above flood level.

(ii) Candidates who focussed on rural population decline in an MEDC as required scored well. They included ideas which explained rural to urban migration, particularly those relating to employment, health care and education. Some candidates incorrectly explained the decline in population as being due to rising death rate or circumstances such as drought or natural disasters which apply to LEDCs or wrote vaguely about 'facilities' and 'services'.

(c) There were few examples which focussed on a specific settlement, many focussing on an island or a region. Providing candidates mentioned a settlement within the area they had named they were credited, however as the references to each settlement tended to be superficial, with few attempts to explain the function, many did not achieve anything above Level 1.

Question 3

(a) (i) Whilst most candidates identified the correct definition, the second and third definitions were also popular choices.

(ii) Most candidates correctly identified the epicentre and focus but some did mix them up. Other candidates identified Q as the 'origin'.

(iii) Whilst many candidates scored maximum marks with their detailed answers, others did not refer to the plate boundary in their answer. Some candidates wrote about plates converging or diverging, which suggests they did not follow the instruction to use evidence from Fig. 3.1.

(b) (i) Most candidates identified at least one correct reason from the information. Stronger responses included comparative statements, although paired statistics were also acceptable. Some candidates focussed too much on the tsunami and its impacts, at the expense of considering the magnitude and depth of focus. Others did not follow the instruction to 'only' use the information from Fig. 3.2 and speculated about building materials and levels of preparation.

(ii) The question discriminated well as there was a full range of quality of response from very detailed and relevant ideas to vague reference to precautions and preparation. The best answers included details about how buildings were strengthened, and usually referred to education to improve awareness, rescue teams and health care or medical resources.

(iii) This question also gave good differentiation. Successful candidates suggested a number of the ideas from the mark scheme, some of which they developed, whilst whereas weaker responses tended to make brief comments about one or two issues, such as the expense of moving or included irrelevant information about the advantages of living near a volcano.

(c) The case study produced a range of examples including Sinabung, Merapi, Kilimanjaro, Eyjafjallajökull, Etna, Ontake, St Helens and even Krakatoa! The best answers were detailed and relevant, linking ideas together to produce an accurate and coherent sequence of causes, including place detail (e.g. correct names of tectonic plates). In contrast, weaker responses did little more than referring briefly to the volcano erupting because it was 'on a plate boundary' before going into lengthy and irrelevant detail about the effects and/or subsequent management. Other candidates named a volcano but then described causes by making statements about processes which took place at another type of plate boundary or indeed by reference to processes taking place at both constructive and destructive plate boundaries. Typical of this were the many candidates who named the Icelandic volcano Eyjafjallajökull and described subduction at a destructive plate margin. A common error was to refer to 'plate boundaries moving' which is inaccurate. A volcano may erupt at or near a plate boundary as a result of the plates moving in relation to each other.

Question 4

(a) (i) Most but not all candidates identified the spit. The most common error was 'headland'.

(ii) Many candidates measured the distance within tolerance and identified the correct direction.

(iii) Answers varied in quality. The best ones showed an understanding that the spit was formed by longshore drift and gave a detailed explanation, referring accurately and in sequence to the prevailing wind, and swash and backwash. Weaker responses simply referred to 'deposition' which was too vague for credit and from others there was the misconception that the materials are moved directly by the wind.

(iv) Many candidates only scored one mark by referring to deposition although a few also included reference to constructive waves and/or the shelter from prevailing winds. Many candidates wrongly wrote about differential erosion or artificially creating beaches for the settlements, which were assumed to be tourist resorts.

(b) (i) Most candidates correctly identified the three coastal landforms. The most common error was to name the stack as a stump.

(ii) This question discriminated well. Stronger responses gave a detailed explanation of the correct sequence of processes leading to the formation of coastal landforms on a headland, including named erosional processes. Weaker responses referred to 'wearing away' of rock but did not specify how lines of weakness develop into caves or how caves then become natural arches as a result of erosion at either side of the headland. The collapse of the roof of the arch was well known but some candidates incorrectly stated that this immediately formed a stump.

(c) The chosen examples from many candidates were large islands or countries rather than a 'named area of coastline' which needs to be a relatively small part of the island or country. Having said that such answers were still able to gain good credit. Indeed, most answers focussed on opportunities provided by tourism areas where the only developed idea tended to be linked to job creation. Some answers also included fishing which allowed the development of selling the catch or provision of food. There were very few answers which focussed on other opportunities which coasts provide, such as port development and associated manufacturing and distribution industries.

Question 5

(a) (i) Almost all candidates correctly identified Russia.

(ii) Many candidates identified the positive relationship between GDP and number of internet users, and some were able to suggest the extent of this relationship by referring to anomalies are the pattern 'not being exact'.

(iii) Stronger responses identified possible reasons why there are more internet users in a rich country. They referred to ability to afford equipment, better access to networks and more need to use the internet for work. Some candidates simply repeated the fact that there is more internet use in countries with a high GDP or speculated that the reason for the relationship is that more internet use would result in a higher GDP.

(iv) A significant number of candidates did not have a clear understanding of 'employment structure'. Where candidates did understand this key term, they tended to score well by correctly describing the growth or decline of different sectors as development occurs. Weaker responses simply explained why there were more jobs in a richer country, which did not address the question.

(b) (i) Typically those candidates who gained credit did so by making the comparison between north and central Africa, and/or coastal and landlocked countries. Many responses did not show an understanding of the word distribution, whilst others did not compare. Weak candidates counted the number of countries in each category. Many also tried to deal with all categories rather than just the highest and lowest ones.

(ii) This discriminated well. The best answers included a variety of reasons for wealth inequalities, some of which they developed effectively for further credit. Typical correct answers referred to ideas such as availability of various natural resources, levels of education, types of industry, tourism and government corruption. Weaker responses incorrectly focussed on the effects of wealth inequalities or simply referred to whether the country was an LEDC or MEDC which was insufficient for credit.

(c) This question also discriminated well with popular examples chosen including Nokia, Walmart, Tata, Ford and McDonalds. The reasons for global operations usually included cheaper labour, availability of raw materials, and growth of markets and answers varied in quality depending on how well these ideas were developed. As in many case studies, many candidates gave some relevant ideas but relatively few developed them and included place detail to reach the highest levels. Many candidates incorrectly included details about the effects of these TNCs on the country rather than why it operated there, along with far too much background information describing the TNC, at the expense of focussing on the question which was asked.

Question 6

(a) (i) Most candidates correctly identified the statement describing how HEP is generated.

(ii) Most candidates identified the Maji dam but some candidates named the Yabiluo dam rather than the Lushui dam.

(iii) Good understanding was shown by those candidates who gained credit for reference to the presence or absence of rivers, variation in relief and/or rainfall and the availability of capital. Many, however, did not answer the question appropriately as they simply described the benefits of HEP which is not what the question was asking.

(iv) This discriminated well. Most candidates referred to the simple idea that fossil fuels will run out, unlike renewable sources, however others also suggested that renewables cause less air pollution or global warming and that global attempts to reduce carbon emissions will inevitably see a reduction in fossil fuels used. As always there were many candidates using words such as 'pollution', 'clean fuels' and 'environmentally friendly', without appropriate elaboration for credit to be awarded. Another common misinterpretation was the simple idea that renewable energy is 'cheaper', which needs to be qualified by reference to running costs. For example, a large HEP scheme may be very expensive to set up yet, unlike a thermal power station, there are few ongoing costs for fuel supplies.

(b) (i) The question discriminated well. Many candidates described differences well using comparative words or used statistics but included words like 'only' or 'just' to show interpretation of them. Some candidates restricted their answer to statistics alone which did not gain credit.

(ii) Many candidates identified different problems for people and the natural environment, most commonly that people would have to move out of their home and lose farmland, habitats would be destroyed and there would be noise or other specified pollution during the construction of the dam. Some candidates wrote about adverse effects on water supply but did not specify that these would occur downstream of the dam. Others vaguely referenced flooding but did not make it clear that this would occur during the construction phase. The building of dams to generate HEP is likely to reduce flooding once they are operational.

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(c) India was a common choice of country but there were also a significant number of answers about China and Lesotho which focussed on the Three Gorges Dam, and the Lesotho Highlands Water Project respectively. Sadly, many candidates who wrote in detail about these projects tended to include far too much irrelevant background information rather than focussing on how 'clean water is supplied for domestic use' and the many references to agriculture and industry suggested the word 'domestic' was not well known. Many candidates did, however, list various methods of supplying water but did not link or develop these ideas, thus being restricted to level 1. Stronger responses linked the ideas together, such as reservoir storage from which pipelines supply towns, which gave development or they included relevant details about the stages of water purification.

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GEOGRAPHY

Paper 0460/22
Paper 1

Key messages

- In **Question 1(d)** candidates had to identify features on, and complete, a cross-section (syllabus page 21). This was not well answered and is still an area for improvement.
- When describing line or bar graphs, as in **Question 2(a)**, candidates should try to identify general trends rather than commenting on every individual change in the graph.
- In photograph questions, such as in **Question 6(b)**, where the command word is *describe*, candidates should concentrate on what they can actually see in the photograph.

General comments

The response to the paper was generally very good with a number of very high-quality answers. Candidates had little trouble in completing the paper in the allotted time and few found it necessary to use additional pages for their answers. Candidates performed well on all parts of the paper and there were no overall areas of weakness.

Comments on specific questions

Question 1

(a) Generally, candidates were able to score high marks on this section, showing good skills of finding features on the map and identifying them using the key. **A** was a main road, the river at **B** was the Santoire, **C** was coniferous woodland, **D** was a leisure area and the height above sea level at **E** 1150 m.

(b) Almost all candidates correctly identified the overall compass direction that the person travelled as north west. The distance measurement proved more difficult and examiners accepted answers within the relatively broad tolerance of 1350 to 1650 metres. Candidates generally found the height climbed easier, with many giving the correct answer of 102 metres.

(c) There were many excellent answers to this question which required candidates to compare two areas of the map. The sections which proved most difficult were an area with steep slopes (square 8802) and an area liable to flooding (both areas).

(d) Although many candidates scored well on **parts (i)** and **(ii)**, there were few correct answers for **part (iii)**. **Parts (i)** and **(ii)** could be answered by measuring the distances across Fig. 1.3 to **A** and **B** and then measuring these distances on the map. **A** was a main road and **B** was a body of water (or lake or Lac de Sauvages). When completing the cross-section, many candidates simply joined the two ends of the section. The map showed that the land rose to a summit over 1200 m above sea level between the two points.

(e) When describing the site and reasons for the growth of the settlement of Dienne most candidates scored some credit but full credit was rare. The points most frequently scored were road junction, river for water supply or transport, and skiing. Less frequently they noted that the site was in the valley, on gentle (although not completely flat) land, above the lowest land and flooding, the bridge point, the footpath or monument for tourism, and woodland for fuel or construction.

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Question 2

(a) Almost all candidates correctly stated the percentage of global rural population in 1990 as 57 per cent. When describing the changes shown in Fig. 2.1 many candidates scored full marks. The graph showed an overall decline from 66 per cent to 46 per cent. The decline was constant, with the rate increasing after 1980. Some candidates stated the change in percentage for every 5 year interval and failed to note the overall trends.

(b) Most candidates correctly noted that the type of graph most suitable to show the age data in Table 2.1 was a bar graph or a pie graph. When using Table 2.1 to describe the main characteristics of the migrants, many candidates were able to score three marks for noting that most were male, single and of working age (or 20–29 years old). Other candidates misinterpreted the question and wrote about possible reasons why the people might have migrated, giving lists of push and pull factors.

Question 3

(a) Most candidates correctly stated that the term for growth in the percentage of people living in towns and cities was *urbanisation*.

Part (i) required candidates to suggest two push factors which caused people to leave the rural areas. Examiners accepted a wide range of possible factors such as disease or lack of medical facilities; lack of water supply, electricity or sanitation; natural disasters such as drought, floods or earthquakes; war; lack of jobs or low income; famine or crop failure; lack of opportunity in agriculture; lack of education facilities; and lack of entertainment or recreation or shops. Some candidates gave pull factors and were not given credit for this. Others tried to use information from Fig. 3.1 to answer the question which was not possible.

Part (ii) required candidates to answer using Fig. 3.1 only and give two reasons why the government wanted to redevelop Dharavi. The best answers referred to the insanitary conditions and the nearness to Mumbai's business district.

Candidates coped better with **part (iii)**. The reasons given in Fig. 3.1 why people did not want to leave Dharavi included: businesses would close or they would lose jobs, less new space for business, they would be moved a long way from Mumbai, away from amenities of CBD, and away from friends or family.

Question 4

(a) Most candidates correctly stated that the total sunshine hours in April as shown in Fig. 4.1 was 225. A small number of candidates gave the figure for August. Almost all candidates were able to plot correctly 160 hours sunshine for July on Fig. 4.1. Many candidates gained full credit for describing the best location for a sunshine recorder, referring to locations in the open, away from buildings or trees, in a flat area or on a roof.

(b) The best answers to the description of the clouds shown in Fig. 4.2 concentrated on what could be seen in the photograph. Credit was given to answers which noted the uniform, grey, dense sheet at low altitude. Some candidates tried to fit the clouds into descriptions they had learned about cloud types and quoted features which could not be seen in the photograph.

(c) Most candidates were aware that clouds were measured in oktas but often failed to mention that this was done by observation of the sky and estimation of the extent of the cover. Weaker answers referred to measurements of sunshine or rainfall.

Question 5

(a) Most candidates knew that, using Fig. 5.1, rain falling was precipitation, loss of water loss from trees was transpiration and loss of nutrients from the soil was leaching.

(b) Answers to this question were generally very good. Candidates were aware that when trees are removed leaching and soil erosion would reduce fertility. They also gave good explanations of how removal of trees would reduce leaf fall which, in turn, would reduce humus production and return of nutrients to the soil.

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(c) Very many candidates scored full marks when giving reasons why some local people were for, and some were against, deforestation. The reasons given for included more land for agriculture, more land for construction, a source of timber, mining and dam construction. A very wide range of reasons why people were against deforestation were given credit. These included loss of wildlife (or habitats or biodiversity), flooding, soil erosion, visual pollution, landslides and lower rainfall. The question emphasised local effects, so global climate changes were not given credit.

Question 6

(a) Almost all candidates were able to name a fossil fuel used in power stations, usually coal.

(b) Although many candidates scored full marks others did not address the question. The command word here was 'describe', so candidates had to describe the buildings of the power station and its location, as seen in the photograph. It was not necessary to give reasons for the location. A wide variety of responses was given credit. These included, for the buildings: tall, flat roofs, covering a large area, close to each other, chimneys, cooling towers, and rectangular and cylindrical buildings. For the location candidates mentioned near the river, near a road or railway, flat land and near agricultural land.

(c) The command word for this part of the question was 'explain', therefore candidates could go back to their descriptions of the location and explain how features of the location benefitted the power station. The better answers concentrated on the river, road or railway and large area of flat land. It was not necessary to know any detailed facts about power stations therefore, for example, any reasonable, possible advantage brought by being near the river was accepted.

(d) Many candidates scored full marks by referring to water and air pollution. There were some good answers referring to possible eutrophication of the river. As in **Question 5(c)**, the question emphasised local effects, so global climate changes were not given credit.

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GEOGRAPHY

Paper 0460/03
Coursework

There were too few candidates for a meaningful report to be produced.

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GEOGRAPHY

Paper 0460/42
Alternative to Coursework

Key messages

Here are a few messages to pass on to candidates for them to consider in their preparation. These have been suggested by examiners based on scripts they have marked:

- When answering Hypotheses questions that ask whether you agree or not, always give your opinion at the start of your answer before any supporting evidence. This will usually be *Yes, No* or *Partially True / True to some extent.* Do not just copy out the Hypothesis if you agree with it. It is important to make a decision and state it as well as provide the evidence for your choice. Be clear in your decision – expressions such as '*might be true', 'could be false*', *'true and false*' are too vague.
- When giving figures in an answer, always give the units if they are not stated for you, e.g. data evidence in **Question 2(b)(iii)** should refer to site numbers and metres per second. It is also important that your numbers are clear, e.g. a 4 can look like a 9; a 7 can look like a 1; sometimes a 2 looks like a 5.
- When shading graphs, use the same style as that provided in the question and make sure your pencil gives a good dark image. Check you understand the scales used and the importance and style of any plots already provided, e.g. on **Question 1(b)(i)** some candidates shaded the cross-hatching of the President Hotel in a different direction to the one shown in the key.
- When you think you have finished, go back and check that all graphs have been completed; too many candidates lose easy marks by missing out graphs, e.g. **Question 1(c)(ii)**.
- Read questions carefully and identify the command word, e.g. *Describe..., Explain…* A question that asks *'Why?*' requires a reason to be given not a description.
- If a question asks for data, e.g. **Question 2(c)(iv)** then you must use statistics from resources whereas evidence could be a qualitative answer.
- Check you are using the resources that a question refers you to, e.g. **Question 2(b)(iii)** referred candidates to Fig. 2.2 and Table 2.1 and clearly stated '…data evidence **from method 2 only**' yet some candidates gave data from method 1.
- If there is a reference to using a Table that contains exact figures and a Graph that contains plots, the figures in the table should be the ones referred to in evidence rather than estimating from a graph.
- Take into account the marks awarded. Examiners do not expect you to be writing outside the lines provided, so do not write a paragraph when only two lines are given – this wastes time.
- It is important that, when you write the remainder of your answer elsewhere, that you signal it by writing something like – *'continued on page 17'* to ensure it is seen. It needs also to be noted that some candidates gave the wrong sub-section number by their extra work which made it more difficult to match to their earlier answer and credit correctly.

General comments

The vast majority of candidates found this examination enabled them to demonstrate what they knew, understood and could do. Most candidates attempted every question. Weaker responses scored well on the practical questions such as drawing graphs or diagrams and making choices from tables. A small number made no attempt at graph and map completion questions. Stronger responses scored well on the more challenging sections requiring judgment and decision-making on Hypothesis choices with evidence and other written answers.

There is less general advice to be given for areas for improvement in this paper. As there are no question choices to make, it is difficult to miss sections out – though candidates do (especially completion of graphs) – and there were no reports of time issues as the booklet format does not allow or encourage over-writing of sub-sections.

Most points for teachers to consider, when preparing candidates for future Paper 42 questions, relate to misunderstanding or ignoring command words, the use of equipment in fieldwork and the importance of experiencing fieldwork – even if is only in the school grounds or simulated in the classroom. Particular questions where candidates did not score well often related to them not fully reading the question or just completely missing out straightforward graph completions. Such failings mean that some candidates do not obtain a mark in line with their geographical ability and is an area that Centres should work on through such strategies as regularly using previous papers so that candidates get used to the style and demands of this paper.

Centres should be aware that, although this is an *Alternative to Coursework* examination, candidates will still be expected to show that they know about fieldwork equipment, how it is used and fieldwork techniques. Some fieldwork experience is important even if there is only limited opportunity within the Centre. Familiarity with maps, tables and the various graphs listed in the syllabus is also important for this examination.

Comments on specific questions

Question 1

(a) (i) The vast majority of candidates correctly wrote *Central Business District. A* small minority gave incorrect answers, e.g. *Centre Botswana Development or Central Banking Diversity*.

(ii) The question required candidates to suggest which of the list was the **least** likely to be found in the CBD. The crux of this question was understanding what the CBD was. There seemed to have been a misreading of the word **least** by some candidates leading to incorrect responses.

(b) (i) A few candidates did not attempt this question but the vast majority shaded both buildings correctly using the key provided. A very small number shaded the cross-hatching of the President Hotel in the wrong direction.

(ii) Apart from the odd candidate who incorrectly plotted 8 storeys 2 km from the CBD or 0.8 or 1.2 storeys 4 km away from the CBD instead of 1, this was done well by most candidates. Although there was no credit on this occasion for shading it was a surprise to see that some candidates did not use shading that matched the other graphs provided. If shading had been credited, they would not have been credited with it here.

(iii) Most candidates made the correct choice that the Hypothesis was correct and then supported this by referring to the numbers of storeys at the CBD compared to areas 2 km and 4 km away from the CBD. It was important to recognise that the Hypothesis was true for **all** the other 4 transects – not just true compared to other areas – and then give an example of data to prove this, e.g. in the North transect the CBD was 7.5 storeys high on average but only 1 storey high at 4 km.

As the data was given as average storeys, there was no need to then work out another average as some candidates did for all 4 transects. As the data referred to in the table was exact, it was not credited if candidates just estimated heights, e.g. '*around 8 storeys'* or *'less than 6 storeys*' – if the data provided is exact that should be used as evidence.

(iv) This question proved difficult for some candidates. Many responses just described the types of land-use found in the CBD, e.g. commercial, shops, offices or banks – they did not suggest reasons why building height varies such as the cost of land or the availability of land or the different needs of different land-uses. Some credit was given for reference to government laws or limits on height and also to foundation issues such as an area might be prone to earthquakes but overall few candidates gained both marks here. A small minority suggested population density or the number of workers as reasons for height varying; these were not accepted.

(c) (i) Some candidates thought the scoring sheet was a survey of residents and consequently made many suggestions that related to how they would ask questions or add new questions or even suggested carrying out a questionnaire. This scoring sheet was devised by the students to carry out their survey of the environmental quality of an area. Candidates were asked the practical question as to how it could be improved, e.g. have a wider range of scores, have more detailed or less subjective descriptions, include more categories. The example of water pollution was allowed although over a transect from the CBD to 4 km it was doubtful if much water would be encountered at the sampling sites. Suggestions that were not credited included light pollution, traffic, and

suggestions that included using specialist equipment, e.g. monitors for noise in decibels. This would not improve the scoring sheet.

(ii) Candidates were required to draw the two bottom lines correctly for 1 mark and then to join the top 3–3 line for a second mark and most managed to do this well. Errors included plotting air pollution at 2 and failing to join the points at air pollution and litter. A few missed it out completely and a small number joined up the wrong lines to make illogical pentameter patterns.

(iii) The Hypothesis asked candidates to decide whether the CBD had the best quality of environment in the city; references to Tables 1.2 and 1.3 indicated that the best quality of environment was 2 km away from the CBD not in the CBD. Here the Hypothesis was clearly wrong which the majority of candidates correctly decided. A few however looked at the environmental quality (EQ) 4 km away and decided that the Hypothesis was *Partially true* as the CBD had a better EQ than 4 km way. This was irrelevant; the Hypothesis as stated was false as the CBD did not have the best EQ in the city. Once that was stated supporting evidence could include a reference to a selected transect, e.g. along the East transect the CBD score was 10 but 2 km away it was 13. Further evidence could have included a specific feature, e.g. noise along the east transect scored 1 in the CBD but 2 2 km away. Not many candidates gave this additional specific evidence from Table 1.2. Some candidates did not scrutinise the scoring sheet closely and thought that the higher score was bad and the lower score was good which meant that, by accident, they made the right choice about the Hypothesis but then supported it by using the low scores at 4 km from the CBD to state that the EQ was highest there.

(d) (i) This was well done by most candidates although a small number shaded the bank correctly but seemed to forget to shade in the hotel at all. More than one candidate decided to label all the buildings on the sketch map using the names in the key which was incorrect.

(ii) There were some good answers to the question about why these buildings were in the CBD such as accessibility, the area where most customers will be so more income or profit, an area with a high threshold population and some mentioned linkage, e.g. workers and customers would need cafes and restaurants or banks close by. A number referred to the CBD having a high population which it does not have; a few just described land-use in the CBD without suggesting any reason why it was there.

(iii) This was well done by most candidates. Popular answers included references to Building A being taller or having more storeys than Building B and most recognised that A was a hotel whereas B was dominated by offices. There was 1 mark maximum reserved for a specific comparison, e.g. a gift shop with the car showroom. Examiners were looking for some overall judgements of the land-use rather than three straight specific lists These could include comparing leisure facilities or tourist facilities with offices or a workplace for example. This involved judgement rather than copying such as the pool with the financial office or the gym with the car showroom. Inevitably ‘storeys’ was frequently spelt incorrectly as ‘stories’; although it is not a spelling test it would be better if such terms used in the question were correctly spelt in the answer.

(e) Apart from a few candidates who decided to carry out a traffic survey instead of a pedestrian survey, most candidates did this well and had gained 3 or 4 marks maximum often halfway through their answer. Common references involved working in groups in the CBD and along transects from it, deciding when to take the count and on which days and also how to count, e.g. tally or using a counter for a set period of time. Weaker responses showed a lack of experience with this type of fieldwork by suggesting ‘counting people’, or using ranging poles to create a corridor to count them in or asking people if they were going to the CBD.

Question 2

(a) (i) Most candidates appeared to be familiar with the technique to measure velocity using a float along with ranging poles and a measuring tape plus a timer. It was important for candidates to be clear about the use of the equipment in a logical sequence starting with measuring a fixed distance and putting the ranging poles at the start and end of that distance. Most could state the formula for calculating velocity using distance and time. A few candidates suggested throwing the float in the river and vaguely measuring a distance without any specific figure of metres in mind. The float was often just put somewhere in the water instead of being released at the first pole but the majority did state that a timer should be used to measure the time taken for the float to move between the

poles. The location of poles was often vague; it was not clear if they were being placed on the banks or in the river.

(ii) Candidates seemed less sure about the use of a velocity meter. These that were aware of its use mentioned the importance of putting it below the surface but not on the river bed, making sure the propeller was facing upstream without being blocked and also that the reading was taken on the screen. A few thought it was important to be held vertical. Inappropriate responses discussed how it worked rather than how it would be used to measure velocity. A very small number thought the meter was used as a float and was sent down the river to be timed over a fixed distance.

(b) (i) Although a small number of candidates decided to ignore the plotting and join up the other existing plots on the graph, overall this was done well by the majority. The plotting at Site 7 was very good; at Site 6, however, a few misread the vertical scale and plotted 1.2 at 2 squares up from 1 m/sec – this was 1.1 on the scale not 1.2 which was 4 squares up from 1.

(ii) Many sensible suggestions were made as to why the velocity meter readings would be more reliable than the float method. The better responses stated that there would be less errors in timing, the results would be more precise and the equipment was easier to set up; others focused on reasons why the float could create unreliable results, for example it could be affected by wind and obstacles, there was great potential for errors in measuring and timing and it was more complex to set up. References to the floats having different densities or weights were judged irrelevant to the results being unreliable as the same float would be used for measurements so results would be consistent for that float.

(iii) The majority of candidates agreed with the Hypothesis and they gave data evidence usually citing Site 1 at 0.7 m/sec and Site 7 at 2.1 m/sec. This yielded two of the three marks available; the third mark was for a different piece of data evidence for the side or centre of the river to support the Hypothesis but this was rarely seen. It should be noted that the question asked for data evidence so numbers were required not descriptions, i.e. site numbers not upstream/downstream references for example. Despite the question stating that evidence should be from **method 2 only** some candidates used method 1 data which was not accepted.

(c) (i) While the angle of slope can be found using similar equipment to measuring the velocity, there are some important differences. While slope can be measured over a fixed distance, especially if it falls evenly, it is sometimes appropriate to measure the angle where there are clear breaks in the slope which can only be ascertained by going in shallow rivers with two ranging poles. Students should fix a position at one pole and line up the same position on the other pole and then use the clinometer to measure the angle – not the gradient. Most candidates scored well on this although there were some odd statements regarding the clinometer being put at right angles to the tape measure or ranging poles.

(ii) Site 6 clearly had the largest variation in measurements with an average range of 9 degrees; while most chose this, a significant minority favoured other sites especially Sites 4 and 7 with a range of 6 and 7 degrees respectively.

(iii) Almost all candidates drew a correct line from 10 on the right to 8 on the left of Site 5 showing an average change in angle of slope of 8 degrees**.**

(iv) Very few candidates thought the Hypothesis was true with almost all choosing *False* and most gave a description of the angle changes referring to it being varied or fluctuating or going up and down. To support this with data required three references e.g. 7 degrees at Site 1 then down to 4 degrees at Site 2 then up to 9 degrees at Site 6. It could not be supported by reference to just two sites as that would only support a rise or a fall not both. Some candidates thought the Hypothesis was *Partially True* but the fluctuations over 7 sites were too varied to make this choice appropriate.

(d) The data given in this questions although not perfect – fieldwork data rarely is – did indicate a positive relationship especially when a couple of anomalies could be eliminated, e.g. Sites 1 and 3. Some candidates did state that there was a weak positive relationship which was fine and then identified one or two anomalies gaining both marks.

(e) Measuring channel width is a fairly common fieldwork exercise although it is usually done on small streams due to the practical problems of measuring across a river. It was important for candidates to explain how they would use ranging poles and a tape measure to collect data on width and also

to measure several sites upstream and downstream to help make a decision about the Hypothesis. Most did this well using either poles or a pair of students at the water's edge and measuring across while keeping the tape taut and perpendicular to the river. One common error was for candidates to refer to putting ranging poles on both ends of the river instead of sides or banks; this needs to be correct. Some candidates measured the wetted perimeter instead of the width; others suggested taking photographs of different widths which was not accepted as an appropriate fieldwork method for measuring – nor were references to carrying out a pilot study, working in groups; safety issues were deemed irrelevant.