GEOGRAPHY (9-1)

Paper 0976/12
Geographical Themes 12

Key messages

To perform well on this paper candidates should:

- Follow the rubric correctly by attempting only three questions. One must be chosen from each of ***Sections A***, ***B*** and ***C***.
- Answer all parts of their chosen questions in the spaces provided, including questions which involve the completion of maps, diagrams or graphs, e.g. **6(a)(ii)**.
- Take careful note of and respond in the correct way to command words and words which indicate the focus and context of each question. It is particularly important to take note of words which are emboldened in the questions.
- Consider the mark allocations and answer spaces provided to ensure that answers contain the required detail and number of points.
- Make clear and precise statements, always avoiding vague words or statements which should be qualified or elaborated.
- Develop or link ideas when extended writing is required in those questions worth five or more marks.
- Interpret various types of source material, including graphs of different types, in order to support ideas. Accurate statistics (with units) should only be used if the question indicates that it is appropriate to do so
- Interpret photographs, diagrams and maps carefully, using them to support answers if required.
- Be able to describe differences (e.g. of features shown in photographs or diagrams) or compare two features (e.g. years shown on a line graph, proportions shown on pie charts) by using comparative words rather than making two separate discrete lists.
- Use geographical words and phrases correctly in answers and be able to define them clearly.
- When the word 'only' is used in the question, write answers based entirely on the resource provided rather than introducing other material.
- Describe the distribution of a feature (e.g. industries, climatic zones, earthquakes) on a map, referring where appropriate to scale and direction and using appropriate words (e.g. linear, clustered, scattered).
- Learn a range of case studies and select them with care to fit the demands of the question.
- Avoid the inclusion of superfluous information such as lengthy introductions and conclusions to case studies. The context will be indicated in the question and only ideas relevant to that context gain marks (e.g. if a question asks for the impacts on people, reference to the natural environment is not relevant and simply wastes time and space).
- Use the continuation pages at the end of the question and answer booklet, if extra space is needed to answer a question. Ensure that any such answers are clearly labelled with the question numbers rather than page references.

General comments

Many candidates performed very well across the paper, showing good geographical knowledge and understanding throughout and handling the skills required with a high level of competence. As always, however, some were less competent in their overall performance, either in terms of interpreting the questions correctly or producing accurate answers. This enabled the paper to differentiate effectively between candidates of all abilities. Some candidates across the ability range did not score marks consistently as they did not respond correctly to all command words or key words/terms. Sometimes key words are emboldened, as was the case with 'people' in **1(a)(ii)**. This is done to make candidates aware of a significant word(s) which should not be ignored.

Answers were usually in an appropriate amount of detail and most candidates were guided by the space provided and the mark allocations. Some candidates made use of the lined pages at the end of the booklet; however, some needed to do so only because they had included too much irrelevant material in their

answers. A few did not clearly indicate which questions they had answered on these lined pages. The question being continued should be labelled clearly, otherwise the continuation of the answer will not be credited.

The presentation of answers from most candidates was acceptable, although the writing of a few candidates was hard to read and interpret. Candidates need to ensure that they write clearly and legibly. Rushing answers so they are barely legible makes no sense as sufficient time has been allocated to complete all parts of three questions neatly, in detail and with care. Similarly, tasks involving the completion of graphs and diagrams need to be done carefully (e.g. **6(a)(ii)**) with accurate plotting, shading and labelling as appropriate so that marks are not lost unnecessarily.

Most candidates followed the rubric, although some weaker responses answered only random parts of all questions without answering other parts, particularly the questions with higher mark tariffs requiring more detail, or attempted to answer all parts of all questions which tended to result in only brief and superficial responses.

Questions 1, **4** and **6** were the most popular questions. There were many good answers seen to most questions, including those requiring extended writing, and particularly to the **part (c)** questions on international migration, the formation of a sand spit, the management of river flooding, and the impacts of a transnational corporation. Many candidates included unnecessary detail in some questions, especially case study questions. This often consists of a general introduction with irrelevant information about the topic being tested (e.g. the causes and effects of river flooding when the question asks about its management). Such superfluous detail is not helpful as it is sometimes included at the expense of relevant information and development. The best case study answers seen were from those candidates who wrote with a clear focus on the question, developing or linking ideas and including place specific information. Weak responses were typically poorly focused with brief lists of simple points (sometimes in bullet points), not all of which were relevant.

The following comments on each individual question will highlight candidates' strengths and weaknesses and are intended to help centres prepare their candidates for future examinations.

Comments on specific questions

Question 1

(a) (i) This was usually correct. Most incorrect answers referenced a large population or rapid population growth but did not refer to resources.

(ii) Most candidates were able to correctly refer to food, homes or jobs, showing a good understanding of the extract. Others, however, referred to the natural environment rather than people.

(iii) This was generally well answered with a range of ideas, typically including water pollution, air pollution and damage to habitats/deforestation. Some candidates referred to causes of damage to the natural environment such as litter and waste but did not qualify their ideas by describing the damage these problems caused.

(iv) Many candidates showed a clear understanding of the consequences of under-population with regard to the armed forces, food supply and manufacturing, but only the most perceptive were aware of the impacts of fewer people paying taxes in terms of the provision of government funded services of various types. Typical answers to the latter simply referred to it causing a 'lack of development' or wrote vaguely about the 'infrastructure' without showing their understanding of the word.

(b) (i) Most candidates understood what the command 'describe the distribution' required, though a few did not and wrote about why some countries had higher death rates than birth rates. The question discriminated well with most candidates identifying Europe and others also identifying northern Asia and anomalies, such as one country in the Caribbean. Some used appropriate generic descriptions such as 'uneven' or 'clustered'. Weaker responses simply listed countries, used inappropriate terms such as 'above the Equator' or referred to 'Asia' generally without specifying the northern part which clearly stands out in **Fig. 1.2**.

(ii) This question was answered well by many candidates. Stronger responses included a variety of ideas, some of which were developed. Weaker answers gave fewer reasons, usually just one or two, typically relating to contraception. Vague/unqualified ideas such as education, government policy and change in tradition were often seen in weaker answers. Candidates must ensure that they develop their answers and include detail.

(c) The case studies most used by candidates were the USA and Qatar, but European examples such as the UK, Spain, Germany and Italy were other appropriate examples regularly seen. Higher level answers contained developed ideas, typically about employment, education, health care and safety, some including relevant place specific information or accurate statistics supporting their answers. The use of statistics is far more beneficial when they are integrated into answers to support the points made, rather than just listed in isolation. Typically, weaker responses briefly identified attractions for migrants, sometimes using bullet points, and did not develop these ideas. Many candidates incorporated surplus detail about the reasons why migrants had moved from their country of origin, rather than focussing on the attractions of the destination as the question required. This was particularly evident when migration from Mexico to the USA was being described. Another common error was to write about the attractions of a country for tourism, rather than its attractions for international migrants.

Question 2

(a) (i) Most answers were within tolerance.

(ii) Most candidates identified the increase in the urban population of North America; the use of supporting statistics, however, was variable.

(iii) The majority of candidates scored full marks, interpreting the graph and key well. A significant minority lost marks as they included North and South America in their lists rather than just using Africa, Asia and Europe as instructed.

(iv) There were many excellent responses to this question with a variety of ideas, most frequently referring to housing, employment, education, health care and crime. Weaker answers were usually characterised by less precision. Vague or unqualified words such as disease, congestion, lack of resources or facilities, pollution, poor quality of life or standard of living were often seen in such answers.

(b) (i) This was generally poorly answered. Those candidates who did ‘describe’ what they saw as required scored highly (e.g. high rise, flat roof, apartments/flats, balconies, run down/dirty). However, far too many candidates gave value judgements or wrote about the surrounding area.

(ii) This question was answered well by many candidates. Weaker answers were not detailed and gave fewer reasons, usually just one or two, typically relating to employment or the provision of specified amenities and services, whilst well prepared candidates gave excellent responses with a variety of ideas, some developed. Vague/unqualified references to standard of living, quality of life, services and facilities were often seen in such answers.

(c) Many different case studies were used by candidates, often a settlement local to them, but others used textbook examples such as London and New York. Stronger responses developed their answers by both describing and explaining the service provision of their chosen settlement. Weaker answers offered only description, and some included all the candidate knew about the settlement with no reference to services at all. Some others gave numerous examples of services, with much place detail but without an element of explanation. A few outstanding responses which did successfully explain the service provision did so by reference to ideas such as population size, spheres of influence, competition and transport networks, sometimes impressively using geographical terminology.

Question 3

(a) (i) There was a wide range of answers to this question. Most wrong answers were larger than the correct distance, sometimes much larger, suggesting candidates either struggled with using the scale or included the area of mangrove and coral around the island in their measurement rather than just from coast to coast.

(ii) Most candidates gained one mark, typically for either stating there were more areas of coral than mangrove or referring to the fact that the mangroves were closer to the island with corals surrounding them. A number of candidates accurately compared distances from the coast, making use of the key and scale, whilst others observed that there were more mangroves in the south/west whereas coral was found more in the NE/SW. A common error was to refer to the corals only, with no reference to the mangroves. Candidates should be aware of the need for comparison.

(iii) Many candidates wrote about the conditions needed for the development of coral reefs, repeating themselves in the following question, rather than describing their characteristics as required. Where characteristics were described, the most common correct references were to their colours and fragile nature, plus the fact that they are living ecosystems which create a habitat for a variety of marine species. Some candidates displayed impressive knowledge with references to such features as polyps, zooxanthellae and calcium.

(iv) This question was generally well answered with many candidates typically referring correctly to warm sea temperatures, clear and shallow water and sunlight, and some correctly using precise statistics. A common error was to refer generally to warm temperatures or tropical conditions rather than 'water' temperatures specifically.

(b) (i) Stronger answers where candidates 'described' what they saw scored high marks (e.g. trees/bushes, green leaves; varying heights/densities; growing in shallow water; roots out of water, etc.). Weaker responses to this question did not describe the features of the mangroves but introduced their own knowledge which was not creditworthy. Candidates need to avoid vague statements and should not include information about features which cannot not be seen in the image.

(ii) This question was answered well by many candidates, with many including several valid ideas and some being effectively developed for further credit. One example of this was the protection offered from storms, flooding and tsunamis, with development referring to the reduction of their impacts on housing, coastal installations and communities. Weaker answers gave fewer reasons, typically relating just to fishing and tourism. They were usually written in less detail with vague references to the 'improved life quality' for local people. A common error was to refer to the ecosystems and habitats provided whilst not explaining how the reefs and mangroves benefit people.

(c) This question discriminated well. There were some excellent answers, many supported by labelled diagrams which gave a full and accurate explanation of spit formation, with appropriate sequenced references relating to longshore drift, incorporating specific named processes. Most, but not all, candidates knew that a spit was formed from coastal deposition, although a significant minority wrote about erosional features associated with headlands and bays instead. Some candidates who knew that longshore drift was responsible for spit formation did not correctly describe the directions of swash and backwash and relate this to the prevailing wind direction. It is essential to do this to explain the formation of a spit.

Question 4

(a) (i) This was well answered; there were few omissions and only in a very small number of cases did candidates tick the wrong answer.

(ii) Many candidates found this question challenging. Throughflow and groundwater flow are processes which should be familiar to candidates, yet there were many incorrect guesses or repetition of words such as percolation and infiltration which were already labelled on **Fig. 4.1**.

(iii) Many candidates completed the table correctly and in such a way that their answers were easily seen. There were a few answers that were unclear, and candidates should be reminded to take care over presentation with questions such as this and to make sure that the arrows go straight to the correct box clearly.

(iv) This was answered quite well overall. Many candidates did seem familiar with the processes of transpiration and overland flow though some wrongly wrote about river processes. For variation in transpiration many candidates acknowledged that temperature or sunshine play an important role; humidity and wind speed were also frequently mentioned. The most common response for variation in overland flow was the relief of the ground, with many candidates also referring to infiltration rates, vegetation cover and/or rock type.

(b) (i) High scoring answers to this question referred to differences in width, depth, steepness and discharge, along with reference to the large rocks in the channel in **Fig. 4.2** compared with the smaller depositional materials at the edge in **Fig. 4.3**. A common error was that **Fig. 4.2** flowed faster than **Fig. 4.3**. Whilst it was definitely turbulent, such a small river in an upland area is unlikely to have a faster speed of flow than a larger river further downstream. Weaker responses made too many references to the surrounding land and valleys, the vegetation and the bridge and did not include enough focus on the rivers themselves. In addition, comparison was required, yet many candidates made statements about just one of the rivers. Candidates also must make it clear to which photo they are referring – 'one has and one does not have…' was a common statement which could not be credited.

(ii) There were many excellent responses by candidates who were able to display good knowledge of the relevant processes. A common mistake was to refer to attrition; the question, however, asked about how rivers 'erode their bed and banks' and this is not what attrition does. Weaker responses were vague and gained little or no credit. Another common error was to refer to processes of transportation rather than erosion.

(c) A large variety of case studies was used, the most popular ones being the Severn, the Ganges, the Nile and the Elbe. The question achieved good discrimination as weaker answers tended to simply list some flood prevention methods whilst higher level answers developed the ideas by explaining clearly how the river management technique reduced the flooding risk. Common valid responses referred to dams, sandbags, levees and afforestation. 'Widening the river' did not receive credit as this is not often done and is not always feasible in many cases. Another common error was to write about warning and evacuation procedures, which did not explain how the river itself was managed to reduce the flood risk and therefore did not gain credit.

Many candidates included too much information at the beginning of their answers. Whilst this was often good place specific detail, it was included at the expense of developing valid ideas and answering the question set. Reading and understanding the context of the question is of paramount importance – there were too many references to effects or indeed causes of recent flood events which meant that management strategies were only briefly mentioned by some candidates. Candidates need to ensure that all parts of their answers are relevant to the question.

Question 5

(a) (i) Almost all answers were correct.

(ii) Most candidates were successful in naming two correct crops, though a few named other crops such as peanuts.

(iii) Many candidates made good use of the maps provided and linked the amount of rainfall and the agricultural land use correctly. A significant minority did not use **Figs. 5.1** and **5.2**, writing instead about the need for rain rather than explaining how the amount of rainfall influences land use. Some referred to different land uses or specific crops grown in parts of South Africa without any reference to rainfall.

(iv) This question discriminated well and there were some excellent responses. Whilst weaker responses often did little more than comment on loss of crops and/or livestock, others described several impacts, ranging from loss of soil fertility and the consequent impact on future yields and income, to the impact of damage to various farm buildings and types of machinery. Some also considered the problems of lack of access to markets caused by disruption to the transport infrastructure. Some weaker answers referred vaguely to loss of plants, animals and buildings rather than making specific references to farming as the question required (e.g. crops, farm animals/livestock, farm buildings/barns, etc.).

(b) (i) The photographs showed a number of clear differences between the farms which perceptive candidates were able to observe. Most identified that **Fig. 5.3** was an arable farm whilst **Fig. 5.4** was pastoral. Other common correct answers identified **Fig. 5.3** as subsistence whilst **Fig. 5.4** was more likely to be commercial, and **Fig. 5.3** as intensive but **Fig. 5.4** extensive. Such responses were impressive as they also used geographical terminology correctly. However, weaker responses included too many references to the land, settlement and climate rather than the farms. Candidates need to include comparison where the question asks for it; many candidates made

separate statements about each farm rather than referring to differences. As in **3(b)(i)** some also did not identify which photograph they were referring to by writing 'one farm is and the other is not…..' which could not be credited.

(ii) Many candidates answered this question well. Stronger responses considered a range of different methods, some of which they developed by reference to how they would increase the output. Weaker answers usually included reference to at least one of fertilisers, pesticides, mechanisation and irrigation. Simplistic references to planting more seeds, keeping more animals and using more land or workers were not credited unless qualified in an appropriate way (e.g. using more land by terracing steep slopes).

(c) A wide variety of farm and agricultural systems was used in responses to this question. Textbook examples of individual farms were used by many candidates whilst others used local farms they had studied. Popular choices amongst agricultural systems were rice farming and mixed farming. Most candidates were able to list inputs, processes and outputs, terms which almost all seemed familiar with. Better responses developed or linked ideas (e.g. an output is wheat which is sold locally for bread making, an input is farm machinery which is used in the process of harvesting the crops, manure is an output from the animals which is then spread on the fields as an input to provide nutrients for the crops). A few responses added some place specific detail.

Some candidates included explanations which were not relevant.

Many candidates drew simple systems diagrams; however, few actually enhanced answers as they simply served to repeat the simple points already made in written answers.

Question 6

(a) (i) The majority of answers were correct.

(ii) There were many accurate plots for two marks. Some responses included some simple inaccuracies and others put the segments in the wrong order, rather than placing them in the same order as the key or using the wrong type of shading. There were also some omissions.

(iii) The question required candidates to identify differences between the amounts of each of the gases used in transportation and industrial processes. Stronger responses stated that more carbon monoxide and nitrogen oxides were used in transportation and more sulfur oxides used in industrial processes. However, a common error was to compare the amount of gases rather than comparing their use, for example, comparing amounts of carbon monoxide with amounts of sulfur oxides. Some candidates used statistics for which no marks were awarded as there was a clear instruction not to do so.

(iv) This was well answered by many candidates, with many showing an awareness of global issues. The most common impacts of air pollution referenced related to respiratory diseases, acid rain, global warming and deaths. Weaker answers were vague (e.g. 'people can get diseases', 'it affects health', 'the environment is destroyed'). In such questions, 'it affects…' earns no credit as it is necessary to describe how it affects.

(b) (i) Candidates who made precise use of the data in **Fig. 6.3** and compared the two age groups in each of their three conclusions scored high marks. A significant number did so; however, others did not refer to the two age groups and/or they tried to explain their choices rather than stating the differences.

The most common correct response was that planting trees was the most popular choice for both older and younger people. The two least favoured options were often given as two separate points rather than being expressed as a difference.

(ii) This question discriminated well with some excellent high scoring responses seen, with several ideas, some developed. Whilst good answers were seen for all chosen methods, many candidates chose 'planting more trees' as the most effective method to reduce air pollution. The highest quality answers justified their choice in some detail; however, almost all offered some valid reasoning. Whilst all the other methods were chosen by candidates, few chose methods such as 'restricting wood fires' and 'building more cycle lanes'. Indeed, many candidates chose one of these two

methods to reject. A small number of candidates wrote about the same method in each section, giving its advantages and disadvantages, rather than selecting a different method to reject.

(c) Many different case studies were used in responses to this question; however, Nike, Nokia, Walmart and Toyota were very popular ones. Higher level answers contained developed ideas in relation to both the positive and negative impacts of the chosen transnational corporation. Positive impacts referred to by well-informed candidates were usually employment, development of transport networks and the multiplier effect, whilst negative impacts focussed largely on issues relating to exploitation of the workforce and the impacts of various types of environmental destruction on local people.

Typically, weaker responses briefly identified one or two of these impacts and did not develop their ideas, or included great detail about exploitation, for example, but about little else. Many candidates incorporated surplus detail about the TNC, including reasons why the TNC had located in their chosen country, which was not what the question was asking. Sometimes this was at the expense of providing a detailed answer about its effects. Another common error was to write about the impacts of the TNC on the natural environment without considering how it impacted the people.

GEOGRAPHY (9-1)

Paper 0976/22
Geographical Skills 22

Key messages

- Many of the best answers were succinct. Candidates should plan their longer written answers in order to elicit more focused responses.
- Candidates should make sure they read the whole question carefully. For instance, in **Question 1(d)(ii)** some candidates were so focused on completing the cross-section accurately that they forgot to label the lake.
- Although candidate performance in **Question 1** which tests mapwork skills has shown improvement, more practice on grid references, distance calculations, and compass bearings is still needed in many centres.
- Candidates should make sure they state the units when quoting data, e.g. population per square kilometre from **Fig. 2.1** and metres above and below sea level for **Fig. 2.2**.
- Candidates should study the key words and instructions in each question carefully. For example, in **Question 3(b)** they should focus on the houses themselves rather than the settlement pattern and landscape around them. In **Question 2(a)(ii)** candidates were asked not to use statistics, but some did. Also, in **Question 1(b)** some candidates ignored the instruction to 'Use only one tick for each row'.
- Candidates should avoid rewriting the question in their answer. For example, in **Question 3(c)** many repeated that 'farming is taking place in areas of steep relief', rather than giving evidence of the approach to farming.
- Candidates should be able to use the correct terminology when identifying features, e.g. of a volcano in **Question 4(a)** or weather equipment in **Question 5(a)**.
- There was some lack of comprehension of terms used in questions, including 'sea level' in **Question 2(b)**.
- When candidates run out of space and write on the extra pages, they should make sure that the answers have the question number and part written accurately. In addition, they should write 'Continued on extra pages' at the end of the first part of their answer.

General comments

The paper was answered well with many candidates attaining a high level. A very wide range of marks were seen with some excellent answers to all questions. All candidates demonstrated some geographical knowledge and understanding. Most made good use of geographical terminology and demonstrated their geographical skills in interpreting maps, graphs and photographs. The standard of mapwork skills has shown an improvement although for some centres there is still some further practice needed.

Generally, candidates performed equally well across all the questions, with **Questions 5** and **6** being done particularly well. **Question 3(c)** was found to be more difficult. Despite there being some individual question parts not being attempted, there was little evidence that candidates ran out of time to finish the paper. Candidates should remember to make sure that their work is always legible. Those using the extra pages tended to score few additional marks unless their original answer was crossed out.

Comments on specific questions

Question 1

(a) Candidates were able to find features on the map from **Fig. 1.1** and identify them using the key, and therefore scored well on this question. The name of the river at **A** was the R.S. Silvestro, and the feature at **B**, a mule track or wide and easy path with signs. Feature **C** was a minor road, but some candidates stated a bus stop, and others an ice rink. Since feature **C** referred to the whole

line on **Fig. 2.1**, these two responses were not counted. The height above sea level of the spot height at **D** was 1468 metres, although owing to some difficulty in reading this number on some maps, 1458 metres was also accepted.

(b) This question was generally answered well with most candidates clearly able to locate **Figs 1.2** and **1.3** on the map. Parking, camping and the main road were nearly always judged correctly. Although there were many completely correct answers scoring 5 marks, the relief was often incorrectly judged as 'mostly flat' in both areas and 'mostly gently sloping' in neither area or in **Fig. 1.3** only. There were a few candidates who did not obey the instruction to 'use only one tick for each row'.

(c) There were many candidates who demonstrated that they had clearly practised the skills needed to answer **part (c)**. In **part (i)** the distance along the railway from the western edge of the map to Toblach Dobbiaco railway station was 3250 metres. Owing to the relatively large distance to be measured, a tolerance of 100 metres was allowed either side of this. In **part (ii)** the bearing between these points was 114°, with a one degree tolerance allowed either side of this figure. In **part (iii)** the six-figure grid reference of the place where the main road 51 passes over the railway, 300 metres west of the station, was 876784. 877784 was also credited. However, it must still be noted that all three questions in **part (c)** proved difficult for some candidates, and that some centres need to make their candidates acquainted with such calculations.

(d) **Part (i)** was well answered with the majority of candidates stating that the vegetation at **X** on the partially completed cross-section was wood. The cross-section in **Fig. 1.4** in **part (ii)** was also completed accurately by many candidates, a distinct improvement on similar questions in the past. It was expected that a valley was drawn with the lowest point being the Tolblacher See/L. di Dobbiaco lake. Since the depth was difficult to ascertain, credit was given if the lowest point of the profile was between 1150 m and 1300 m. Many candidates found the labelling of the lake on the profile with an arrow relatively easy. There were a large number, however, that omitted this part of the question, almost as if they had not seen the last sentence in the question. Others drew the lake, without a label or arrow, as a flat area in the bottom of the valley. Credit was only given if the edges of the lake were clear and accurately positioned.

(e) The main settlement at Toblach Dobbiaco was found by candidates and most indicated correctly by a tick in **part (i)** indicating that the road junction was a reason for growth of the settlement. Some candidates suggested north facing slopes, when they are, in fact, south facing, which was not an option**. Part (ii)** was found to be more difficult, but due to Toblach Dobbiaco being found at the confluence of two valleys, on south facing slopes, with evidence of tourist facilities such as an ice rink and swimming pool, this left only mining as the factor which did not help its growth.

(f) This question was answered well by candidates who understood the concepts of relief and drainage. It did not require candidates to write descriptions themselves as in some past questions. Delimiting the question to a block of four grid squares helped candidates to focus. Consequently, most identified that some land was over 2000 metres high and that there were cliffs and very steep slopes. Not all, however, identified that the drainage consisted of small streams. Some thought that there were large rivers due to the presence of the Troge B, but this was the only one. There were no meanders or deltas present in such a highland area.

Question 2

(a) (i) The majority of candidates gave a correct response of 900–1000 metres having matched the shading of Utrecht province with the key to **Fig. 2.1**. A few gave a single figure such as 950 metres rather than the whole range.

(ii) In most cases, **Fig. 2.1** was successfully interpreted by candidates with many scoring the full three marks available. The best responses not only pointed out that there was an uneven distribution of population density, but divided the population density into high, medium and sparse categories. Most commonly, it was recognised that the population density was high in the west and higher near the coast (of the North Sea). Most stated the population was sparse in the north or on the islands (in the north). Fewer suggested that there was a medium population density in the south or east or south-east. Some made comparisons such as 'The south is more densely populated than the north' but this gained no credit since there needed to be some reference to the level of population density. Some just quoted statistics when it specifically stated that these were not required.

(b) This question proved to be a good discriminator with the better responses clearly demonstrating that the candidates understood the link between population density shown on **Fig. 2.1** and relief, shown by height above and below sea level, on **Fig. 2.2**. They clearly identified that the most densely populated areas were below sea level or 1–4 metres below sea level and that the least or less densely populated areas were above sea level or 0–25 metres above sea level. The inverse relationship between the two factors was noted quite often or was phrased such as 'As relief increases, population density decreases'.

Since statistics were allowed in responses, sparse was often referred to in terms of 0–399 population per square kilometre, moderate 200–899 population per square kilometre, and high 900-1000 population per square kilometre. Some candidates seemed a little confused that there was population living below sea level; indeed, some responses referred to 1–4 metres above sea level which was not a category. Some did not use the full metre range, for example, stating that the highest density was more than 4 metres below sea level, rather than 1–4 metres and >4 metres below sea level. When using statistics, it was expected that the appropriate units for both population density and height above sea level would be quoted at least once in the answer. In addition, a few candidates tried to explain the distributions they had noted for which there was no credit, as was the case for reference to flat and steep relief which was not directly indicated on **Fig. 2.2**.

(c) The question was generally answered well, with many candidates suggesting appropriate activities for a coastal area; this included trade emanating from ports, tourism (using beaches), and fishing. Other responses referred to the flat and low land on which it was easy to build, the moderate climate and that there was fertile land for agriculture. Vague statements such as 'It is near the coast', 'It provides job opportunities' and 'It's on flat land' needed to be more specific to gain credit.

Question 3

(a) This was well answered with candidates able to apply their knowledge of settlement patterns to **Figs 3.1** and **3.2**. **Fig. 3.1** showed linear settlement and **Fig. 3.2** a dispersed or scattered settlement. In the latter, isolated was also accepted.

(b) This question was a good discriminator. Those who focused on the description of the houses often scored well. Many responses referred to the fact that they were commonly multi-storey, painted in bright colours, and often of similar design, being square or rectangular with many windows. Other candidates referred to the roofs, noting that some had flat roofs while others had pitched roofs which were tiled. Some noted the balconies or terraces and suggested the buildings were flats or apartments. Nevertheless, a large proportion of many lengthy responses referred to settlement patterns, following on from **Question 3(a)**. Further statements referred to the density of the buildings, whether close together or spread out, or their proximity to farmland. Their positioning, for example on a slope, was also not creditworthy.

(c) This question was found to be one of the hardest on this paper. It required the provision of specific evidence for how agriculture was being carried out on steep slopes in **Figs 3.1** and **3.2**. Many candidates, however, interpreted the question as the need for evidence that farming was taking place. The most common creditworthy responses referred to terracing or the fact that farming was taking place in steps or layers. Reference to contour ploughing, that banks and walls were present to support the plots or retain water, and to the presence of grass strips or rows were also credited.

Question 4

(a) This question required the specific terms for features **X**, **Y** and **Z** on Volcano **A** in **Fig. 4.1**. Although there were many candidates who scored all three marks, the terms were not as well known as expected. **X** was the crater, for **Y** conduit, pipe or vents were acceptable, and **Z** was the magma chamber. In the latter, reference to lava instead of magma was not credited.

(b) The answers were generally well known with Volcano **A** being a stratovolcano or composite cone and Volcano **B**, a shield volcano. A variety of related terms were also used which were not creditworthy. These included active and dormant as well as destructive and constructive.

(c) This question was a good discriminator with some clear understanding of the emanations from stratovolcanoes shown. Many stated that stratovolcanoes were more explosive or violent than shield volcanoes and that they tended to be more unpredictable. Reference to the fact a

stratovolcano ejects more ash and that this can cause breathing difficulties was frequently seen as was mention of toxic gases and pyroclastic flows. Lahars and volcanic bombs were also referred to and these were contrasted with the more frequent lava flows from shield volcanoes. However, many responses were overly long since too much time was spent on the height and steepness of the slope of the cone and distance away from settlements. A common misconception was that viscous lava emanating from a stratovolcano travels faster than that from a shield volcano where the lava is runny and less viscous.

Question 5

(a) Although many candidates were able to correctly identify the weather instruments in **part (i)**, it was clear that some candidates had not encountered them. **A** was a rain gauge, **B** a wind or weather vane, and **C** an anemometer. In **part (ii)**, most gave the reading for **A** as 2.2 mm, although some neglected to give the units. The reading for the wind vane was south, although some interpreted it as a wind blowing to the south and did not get credit. A few misread the question and gave the purpose of the reading, e.g. wind direction in the case of **B**.

(b) This question was answered well. In **part (i)** most candidates calculated the average daily rainfall from **Table 5.1** correctly as 9 mm and in **part (ii)** the daily temperature range forecast for Monday as 5 °C. The lack of rainfall and cloud cover together with a relatively low wind speed and moderate temperature meant that Friday was the best day to climb a mountain in the area. The majority of the candidates correctly identified this.

Question 6

(a) **Part (i)** was answered correctly by most candidates, with the largest annual precipitation from the Sacramento drainage basin and the smallest volume of annual runoff occurring in the Colorado drainage basin. This required lifting data from the appropriate column in **Table 6.1**. In **part (ii)** more candidates found it harder to link the data table and map to confirm one of the statements from the table: 'Irrigation will be most needed in the south'. This was because drainage basins **A** and **D** have the smallest volumes of both annual precipitation and annual runoff. The other three statements in the table which were incorrect were selected with a similar frequency.

(b) Most candidates were able to accurately read off from the graph, **Fig. 6.2**, that California's population in 1990 was 30 million and that the water used in agriculture in 1980 was 42 million cubic metres respectively.

(c) Most candidates successfully interpreted the text of **Fig. 6.3** to identify the true statement in the table to be the first one: 'Cost will be a problem if desalinated water is used for agriculture'.

(d) Most candidates showed an understanding of the issue of the overuse of groundwater and its impact on the environment. Particularly common was its impact on soils such as the drying out of soils leading to desertification as well as erosion. The impact on ecosystems was also stated, for example, the loss of habitat and biodiversity due to animals and plants dying. The common denominator was the loss of water with the groundwater table being lowered and the possible drying up of rivers and lakes. Reference was also made to the poor quality of the groundwater as well as waterlogging. Better responses also suggested that the land might sink or that sink holes might develop. Weaker responses tended to be vague such as reference to land degradation, or the soil being damaged. There were also some responses which referred to impacts on people such as crops dying and no water for domestic use. Air and noise pollution from the machinery for boring and pumping was not deemed worthy of credit.

GEOGRAPHY

Paper 0976/03
Coursework

General comments

This report refers to the performance of centres in the June 2024 session; however, the comments made here are equally applicable for centres that make their entries for the first time in November 2024 or during 2025.

The original entry for the June 2024 session decreased slightly compared with the IGCSE Geography Coursework entry in June 2023. Pre-COVID-19 centre numbers have been firmly re-established. A very limited number of centres withdrew late. Most centres outside of the UK opted for 0460/03 while most within the UK opted for 0976/03.

The range of topics undertaken were an almost identical compared to June 2023. From the table below, it can be seen that rivers and urban settlement and land-use were the most popular topics, with coursework submissions on human geography topics outnumbering those on physical geography. Please note that a very small number of centres elected to allocate completely different topics to each of their candidates. This makes group data collection either very difficult or impossible with only limited primary data likely to be collected by each individual and is not therefore recommended. In this case, there is unlikely to be enough data for an in-depth analysis.

	Topic	Number of centres
human	population and migration	1
	settlement and service provision	9
	tourism and recreation	31
	transport	2
	urban settlement and land-use	35
physical	coasts	15
	rivers	33
	weather and climate	6
others*		4

*Include conservation v development, soils, and waste management.

It is stressed that this report focuses on points where the moderation process could have been a little smoother or where candidates could improve their coursework in order to access the higher grades. Problems seen may be due to a lack of training of teachers in the coursework option; there is training available online for teachers who are new to the coursework option. There is also a Coursework Handbook available from the School Support Hub which includes examples of coursework which are annotated to show how they should be marked. It is also recommended that centres read this report's content together with the *Moderator's Comments on school-based assessment of coursework* which each centre receives.

Almost all centres which entered candidates were able to conduct their fieldwork 'in the field', although one or two did use past data collected by a former cohort for comparison purposes. Most data was collected as part of a group exercise and then collated by a teacher when the candidates returned to school. The complete data set(s) were then made available to all candidates for each to work on their own individual hypotheses. However, an increase in candidates collecting their data either individually or in small groups was reported. For safety reasons, it is **not** recommended that candidates collect data on their own, 'in the field'. If a candidate needs to add extra data for their own study to that which has already been collected as a group, it is expected that they are accompanied by an adult, especially when administering questionnaires or collecting data in a city, on a river or along a beach.

There was some concern expressed by Moderators that one or two centres had clearly offered two much teacher guidance; hypotheses, data presentation techniques, evaluative points and ideas for improvement were all similar. A greater emphasis on individuality is important. This can be enhanced by candidates researching their own background information, and attempting at least one hypothesis which is not attempted by other candidates. In addition, candidates should use their own photographs as well as graphs, maps and field sketches.

Key messages

- Most Centres demonstrated a very good grasp of what was a suitable topic, with their candidates undertaking appropriate hypotheses. A clear understanding was demonstrated by most candidates of the Route to Geographical Enquiry, resulting in well organised studies containing the five sections outlined in the syllabus, often with a table of contents. However, some centres' coursework was imbalanced, typically with a long Introduction and Observation and Data Collection section at the expense of Analysis which was relatively short. Some tables of contents contained page numbers but these were not always accurate, or the page numbers did not exist.
- While a good understanding of geographical theory was demonstrated, it tended to be more focused where the hypotheses appeared first and the theory could be utilised to justify the hypothesis.
- In the better studies, geographical models outlined in the introduction were referred to in detail in the analysis and conclusion.
- The most successful conclusions were conducted as a result of clear hypotheses laid out at the beginning of the enquiries. Two or three hypotheses are enough to ensure a sufficient depth of reasoning in the analysis. Too many hypotheses and data collected on too many parameters often leads to a simplistic analysis or overlong enquiries which lose focus.
- It is important that enough primary data on any one parameter is collected to allow candidates to exhibit a depth of understanding in their analysis. Not all data collection exercises produced enough data to allow the identification of clear trends and anomalies as well as the opportunity to perform statistical analysis.
- Data collection methods were well described and understood. Sampling procedures, however, were poorly described and understood and there was limited justification (if any) for the selection of data collection sites.
- All relevant primary numerical data that is used in the study should be included in tabular form. This was absent in some studies, despite the description of data collection methods.
- An impressive range of data presentation methods was utilised with many demonstrating the complexity required to score well. However, a large number were rendered ineffective by the absence of correctly labelled axes (to include units). Line graphs were often used inappropriately.
- All maps should have a scale and orientation, and those originally from secondary sources must be clearly utilised. There is an overreliance on Google Maps which are not adapted for the purpose by the candidate.
- The inclusion of photographs considerably enhanced many enquiries, but to be worthy of credit they must be well annotated as well as having a title. They should also be individual and not appear in other studies.
- The best responses gave well-reasoned explanations to support their findings; however, many reasons given were too speculative and were not backed up by one or more of secondary data, geographical theory, or personal observations.
- Most studies clearly confirmed or rejected their hypotheses in the concluding section. The best responses backed this up with key numerical data or reference to graphs and valid explanation.
- Evaluations were variable in quality, although most demonstrated that they understood some limitations of the study undertaken. However, more attention could be paid to what went well and why. Feasible suggestions for improvement or extension if the study were to be undertaken again often lacked detail.
- References to shortcomings in the methodology should only be written in the evaluation and not in the data collection section as this is a waste of the word count.
- While most Centres direct their candidates to stick to the word limit of 2000 words, there are still submissions which are excessively long (up to 10 000 words) which lose focus on the aims of their study. Where this is an issue, it is expected that a word count is declared to get the candidates to concentrate on this issue. Text placed in tables also counts towards the word limit.
- The majority of centres should be complimented for their conscientious and copious comments made on scripts and or comments sheets attached to each piece of coursework. New centres should note that they are expected to justify how the marks were awarded. Phrases from the *Generic Mark Scheme for Coursework Assessment*, which was used by every centre, can be utilised for this.

- The marking done by centres was generally accurate. Where disparities occurred, it was usually the undermarking of Organisation and Presentation and overmarking of the Analysis and Conclusion sections. The changes, if any, frequently occurred at the top and lower end of the mark distribution.

Comments on specific assessment criteria

It is points that are common to several centres which are reported below and are based on each of the assessment criteria in turn. Many points are the same as in past examination sessions and therefore are repeated. It is felt this is of particular benefit to new centres, although some are still relevant for the more established centres.

The criterion of *Knowledge with Understanding* tended to be assessed accurately; where disparities occurred, it was often because the marker seemed to only take the candidate's introduction into account. This is largely the knowledge element but knowledge can also be applied elsewhere, for instance for the explanation of trends and anomalies in the data. The level of understanding can be demonstrated throughout the study and must be judged as such. For instance, a judgement can be made on how well the theory has been applied such as in the provision of reasoned explanation in the Analysis or how perceptive the candidate has been in stating the limitations of the study in the evaluation. Where these occur, they can be highlighted by markers in their comments made on the scripts.

Most enquiries were well organised with clearly stated aims and hypotheses and positive use of geographical terminology. These were often accompanied by the expected outcomes which were often related to theory. Where the word count is exceeded, introductions are still too long. Many followed some initial aims with a prolonged background information section. There are still some candidates who write all they know about rivers, or include a generic section on the development of tourism, for instance, rather than carefully selecting their information to justify their hypotheses. Extended paragraphs about the history of the locality are often irrelevant, and a glossary of geographical terms is unnecessary, since many of the terms are not referred to in the later sections. It was found that greater focus was achieved when candidates placed the theory after their hypotheses, rather than the other way round. Conversely, some candidates tend to be far too brief in their use of theory; this was common using Bradshaw's Model or urban land use models, where once having scanned the diagram(s), just one or two simple sentences (if any) to explain the relevance to the hypotheses were written. The better responses relate these models directly to the study location. In these cases, the models tended to be a focal point throughout, with good comparisons to the data collected.

The wording of the hypotheses is important. Nearly all those that were stated were plausible and investigable. The most successful formula seemed to be to encourage candidates to use two core hypotheses and a third chosen by the candidate, albeit with guidance from a teacher. This resulted in a more focused study with greater evidence of individual work. The use of four or five hypotheses or a generic guiding question was usually associated with a superficial analysis. It was clear that some candidates did not understand the nature of a hypothesis, while others expressed their hypotheses as questions rather than statements, which is acceptable. However, for some candidates this seemed to result in a failure to fully explore the findings, with a brief 'yes' or 'no' in the concluding section.

For many centres, it is recommended that more attention is given to the detail shown on location maps placed in the introduction. To be effective, scale and orientation are essential and just including 'not to scale' is not helpful. It is also expected that any map, from whatever source, is utilised by the candidate. This is usually achieved by locating the sites of data collection with an appropriate key. The better examples are usually well annotated and possess clarity so that relevant detail is easily accessed. However, there are still candidates who include a plethora of maps at different scales (e.g. world, regional and local) with little or no customisation to the area of study. More attention should also be paid to the quality of scanning since in many cases much of the detail, such as the scale, is illegible. This seems to be most common when Google Maps are downloaded. Some maps which were originally in colour, were downloaded in back and white and again specific features were difficult to make out. Some candidates spent a lot of time producing hand-drawn maps, which not only observed appropriate map convention but were often of a higher quality.

The criterion *Observation and Collection of Data* were generally assessed well by the markers, and very few adjustments had to be made. Indeed, they are in the best position to judge the input individual candidates put into the processes of data collection.

It must be stressed how essential it is to collect enough data to ensure the opportunity for sufficient depth of understanding and detail to be demonstrated in the analysis. Not all centres managed to collect

questionnaires from at least the recommended 50 respondents. Those that did not were often single groups of three or four candidates working on their own and not as part of a larger class where data was pooled.

River studies represented a high proportion of centres. For these, ten locations are ideal, although this was not always achievable due to constraints of candidate safety or of time. Where the number of sites is under six, a centre might consider measuring each site at three different cross sections, each a minimum of 100 m - 200m apart. However, to show worthwhile trends in the parameters measured, individual sites should, at the very least, be several kilometres apart. The advantage of river studies is that a large number of different parameters can be measured, thus generating many different hypotheses which help make each candidate's coursework more individual. However, only three hypotheses should be chosen and thus this makes collection of data at six to ten different sites essential. Some candidates described methods of data collection which were not used to answer their hypotheses, therefore using up valuable wordage.

Few candidates went into any depth of discussion on their sampling strategy and its justification. This was particularly common for those undertaking questionnaires in urban environments. If respondents were accessed on an opportunity basis, then it needs to be stated and justified. Few centres explained their choice of data collection sites; for instance, stratified sampling to represent the three stages of a river, or systematic transects every x metres along a beach. This also applies to traffic surveys and pedestrian counts. Overall, it appears that methods of sampling are poorly understood.However, the description of the use of equipment for data collection tend to be quite detailed and reflect a high level of understanding. More candidates are now linking their methods to their hypotheses which helps demonstrate their level of understanding. This is particularly the case where the data collection methodology is well set out in tabular form. However, many of these tables also include some evaluation of each data collection technique. Since all wordage in tables counts towards the overall word count, this is best left for the concluding section of each study.

The time given over to data collection remains an issue for many centres, especially when the time available on the school timetable is limited. A surprising amount of data can be collected in a relatively short space of time when a large number is divided into small groups to cover a large area, each coordinated to do similar activities at similar times, such as a pedestrian or traffic count. On return, the data is then coordinated centrally and then shared. Even so, centres that allocated more than half a day for data collection almost inevitably achieved much better results than those which attempted to collect data in one or two hours. Again, micro-climate studies conducted in and around schools seem to find time management less of an issue.

The use of secondary data can play a valuable role; however, it is usually only to back up the findings of the primary data collection. Comparing data collected at the present with that collected on the same topic in the past would be an example. On the now rare occasions where a centre is unable to collect primary data, then secondary numerical data such as from weather stations or censuses can be used. There are still examples where centres have given their candidates a topic that requires the synthesis in essay format of written information taken from the internet or textbooks. This would not gain any credit for *Organisation and Collection of Data*, *Presentation of Data* or *Analysis* and thus total marks are drastically reduced. Such studies typically set no hypotheses and collect no primary numerical data.

This session there were far more studies which included tables of the collected data. These are essential to prove the candidates took part in a fieldwork data collection exercise as well as for reference in the analysis. The best studies integrated these tables with the methods of presentation or analysis. Since it is likely that parts of the data will be referred to in the text of the study, candidates should avoid placing it in an appendix.

Organisation and Presentation was the criterion which resulted in the greatest disparity between Markers and Moderators, especially at the lower end of the mark distribution. Some studies which scored higher marks were overmarked due to the lack of complex methods of data presentation and/or the absence of location maps which had either not been utilised by the candidate or did not possess both scale and orientation. Meanwhile, some lower scoring studies which used at least three different simple techniques or included one complex technique tended to be undermarked. These techniques must be effective in portraying the data; for instance, there were again many examples of line graphs used for discrete rather than continuous data which meant they were inappropriate. Bar graphs were seen in many guises, but different sorts of bar graphs only count as one technique, but this was not considered by some markers. Candidates should be discouraged from presenting the same data in several different ways, since in this case only one technique can be counted. Only the three most complex and effective graphs should be considered by markers. There is no place in the mark scheme to deduct marks for other ineffective or inappropriate graphs since the emphasis must be on positive marking when assessing the data presentation. Candidates clearly spent a lot of time on their data presentation and once again it was the criterion where on

average, candidates scored the most marks. However, if they use many more than three techniques (in addition to a location map), it means that their time could probably be used more effectively, for example on a more detailed analysis.

Most candidates followed the route to geographical enquiry and therefore produced studies with an appropriate structure; thus little comment is required on the *Organisation*. A few neglected to write an evaluation, or left this to comments on the methodology in the data collection section. It is expected that an evaluation should follow on from the Conclusion. Similarly, concluding comments are sometimes made after each hypothesis is dealt with in the Analysis. Again, a summary section entitled 'Conclusion' is still required. Most candidates are integrating their graphs and diagrams with the text of the Analysis. This helps to ensure they analyse the data shown by each graph/diagram/map in turn, making sure that none are redundant. Candidates should be discouraged from placing all their graphs together in one section, whether it is before the Analysis or in an appendix at the end. This also includes statistical tests. Many candidates now provide a table of contents at the beginning of the study. This should contain page numbers for each section of the study, but for a significant number of studies these were inaccurate especially where amendments had been made. In some cases, the pages numbers were listed in an index of contents but there was no pagination. It is recommended that candidates should check this as one of the last jobs before submission of their work. More candidates are including risk assessments which undoubtedly demonstrates their organisation. Few candidates mentioned a pilot study being carried out, prior to the main data collection exercise, which also would have added to the Organisation. In many cases questionnaires could be tested in advance at the school, and elements of microclimate, for instance, in the school grounds.

A large and impressive range of skills was demonstrated by candidates in the representation of their data. Many centres have encouraged their candidates to produce graphs and maps which are more complex, and this has been largely successful. Where this was not the case, there is still a reliance on basic bar charts, line graphs, pictographs, and pie charts. Nevertheless, these can be located on maps to make the technique more complex. Scatter graphs with appropriate lines of best fit, divided and stacked bar graphs and radar graphs are other techniques used by candidates which have the appropriate level of complexity. Cross sections produced in river studies are considered a higher-level skill, however, it is expected that they are created to the same scale to facilitate ready comparison, but this was seldom the case. This also applies to beach profiles. Field sketches were rarely seen, but the few that were drawn, tended to be clearly linked to one of the hypotheses and were very well annotated. However, despite being mentioned in the methodology, many candidates choose not to include them in their final study. Any produced during the fieldwork should be tidied up and suitably annotated to show evidence that can be referred to in the analysis. Some centres encouraged their learners to make use of statistical techniques in their analysis. Spearman's Rank Correlation was the most common of these. Centres are thus reminded that these can count as a complex presentation technique if the candidates demonstrate the complete working themselves and do not just rely on the press of a computer key to get the result. On some occasions, the working for Spearman's Rank Correlation was incomplete; for example, the formula was not entirely filled out correctly with the data.

Many bar graphs, line graphs and scatter graphs were rendered ineffective by the lack of or incomplete labelling, particularly on the Y axis. Such labelling should include the name of the parameter along with the units of measurement. On some occasions, titles were also missing. Since most graphs are produced by using computer programmes, all centres should advise their candidates that having input the data, they should inspect the results carefully and make any necessary changes.

Several centres' candidates produced some very well annotated photographs, graphs, and maps. Anomalies on graphs, for instance, were highlighted by a circle leading to an arrow and relevant comment. However, in many studies photographs were submitted without annotations and were not referred to in the text. Many others had just a title and/or simple labels which would not count as complex. These served little purpose. Centres should ensure that their candidates know exactly what is expected by annotations: a paragraph written underneath the photograph, for instance, would not count. Three appropriate annotations would be expected on any photograph for it to be complex.

It is best for the original hand-drawn graphs, field sketches, maps, and diagrams to be included in any study rather than being scanned into the study, albeit at an appropriate place. This is an increasing trend, but they are often difficult to read, especially when they are scanned in monochrome. Candidates are reminded that each graph should be drawn by themselves and not by one person in their original group with the rest scanning it. Furthermore, since it is expected that individual initiative is demonstrated in the use of presentation techniques, the same range of computer-generated graphs appearing in every study that a centre's candidates submit, should be avoided.

The *Analysis* continues to be overmarked by many centres, especially at the top end of the mark distribution. The requirement for reasoned explanations at Level 3 is still being overlooked by markers when reasons given are very short and tenuous. Some of the marker comments on the scripts revealed that the higher marks were being given for explanations which were not fully developed. The *Analysis* section is where candidates can really demonstrate their level of understanding. However, the depth of analysis can be severely limited by the lack of a sufficient amount of raw data on any one variable for interpretation purposes. Here, the onus is on the centre to make sure their candidates have enough data at their disposal to achieve their potential.

The *Analysis* continues to be the weakest criterion for many candidates, particularly, the level of explanation. Most analyses consisted of description derived from graphs with all those presented being utilised. There was a genuine effort to interpret the trends or patterns identified as well as the identification of anomalies. Although, few responses remained at L1, most remained in L2 or the bottom of L3 due to a lack of viable or detailed explanations. There were some thorough descriptions with good use of data as support, and the more able candidates used one or more of geographical theory, secondary data or personal observation of peculiar characteristics of the study area to support their explanations. In addition, having identified anomalies, some used numerical values to show why they were anomalies, and explained them with reasons that were creditable. Some manipulated their data, producing averages, for instance. However, in general, explanation was speculative and although tenable and sometimes worthy of some credit, there was no clear proof. Some candidates who identified an anomaly put it down to candidate errors which were not substantiated. Phrases such as 'The reason might be/could be/may have been' were very common, and further backed the notion of being unreliable.

There was some valid use of statistical techniques, principally Spearman's Rank Correlation. Although scatter graphs with best fit lines were often used as a pre-cursor to the testing, there tended to be a lack of a full statistical analysis. Many candidates did not really explore the implications of what their statistical work indicated or display a clear understanding of the technique they had used. The correlation coefficient value itself was often poorly interpreted, especially when a correlation coefficient was produced by the computer, and no workings were shown. This lack of understanding also extended to tests for the level of significance. It is therefore important that if centres introduce their candidates to statistical testing, they make sure their candidates not only have an understanding of how to use it, but also, why they are using it.

The *Conclusion and Evaluation* was marked accurately apart from the higher scoring studies. Here, too much credit was given for accounts which lacked key data. The level 3 statement for the Conclusion in the Generic mark scheme for Coursework Assessment states that conclusions should be '*clearly related to evidence collected'*. This evidence should be either examples of numerical data or stated characteristics shown on graphs, maps and tables which are clearly referenced; for example, 'On Fig. 3 it can be seen that….' Some responses which were given high Level 3 marks used this evidence very sparingly or not at all and generally lacked the expected depth of discussion and explanation.

Most candidates summarised their findings well, although many were rather brief. All the hypotheses tended to be either confirmed or rejected. The best enquiries quoted key data or referred to figures (graphs, maps, and statistical tests) used earlier in the study, as well as providing some explanations. Many responses lacked the evidence to support their assertions, and explanation was rather superficial. Models or theory quoted in their introduction were not mentioned. This particularly applied to the Butler Model or models of urban land use. Although Bradshaw was an exception, statements were still limited in many cases. Most common was the lack of key data which limited progression to the higher Level 3 marks. Some candidates introduced new ideas in their conclusions and it was felt that these would have been better in the *Analysis*. Some candidates chose to make simple conclusions after each section of their *Analysis*. These must be taken into account by markers, although a separate *Conclusion* section is still required.

As part of the evaluation, markers are reminded that they should consider comments made in the methodology section, which usually refer to the effectiveness of the equipment used. Candidates tended to make some valid criticism of their data collection strategies and many came up with one or more realistic improvements. Some suggested how their study could be extended and a few said whom they felt might benefit from their findings. Weaker responses tended to suggest generic improvements which needed some development, for example, 'We needed more time' or 'We should have sampled more sites'. Most of the evaluation still concentrates on negative comments rather than stating what went well and why it was effective. Weaker responses seemed more likely to make positive comments but these were rather superficial, for example, 'The fieldwork went very well' with 'very good results'. The evaluation remains a good gauge of a candidate's level of understanding of the fieldwork undertaken.

Administration

Markers clearly worked very hard in utilising the *Generic Mark Scheme for Coursework Assessment* which all centres used. In nearly all centres it was applied consistently with the order of candidates largely remaining unchanged. This made applying adjustments relatively easy, and for many centres this meant there was no change. For those that were adjusted this was by no means across all of the mark distribution. A pattern of negative adjustments above 50 marks and positive ones for those below 37 marks is similar to past June sessions. Some centres were a little harsh and a small positive adjustment was made. Those very few centres to which a large negative adjustment was applied were generally relatively new to the moderation process; the reasons would be detailed in the document *Moderator's Comments on school-based assessment of coursework* which each centre receives.

Although expected as part of the marker's job, the Moderators were also very appreciative of the conscientious approach by most centres in adding comments to their candidates' scripts to justify the marks awarded. Those who added a cover sheet with some overall comments must also be thanked. These generally used the wording from the *Generic Mark Scheme for Coursework Assessment* and facilitated the smooth running of the moderation process. Very occasionally, it highlighted when a marker had misinterpreted the mark scheme. If centres have not done so, it would be very much appreciated if markers were to make these comments (in pencil) on the scripts for their next submission.

Please note that only one piece of coursework is required for each candidate. Where two different fieldwork exercises have been carried out, it is for the centre to ensure that only the one attaining the highest marks according to the *Generic Mark Scheme for Coursework Assessment* is sent to be moderated. The centre must also ensure that coursework based on different topics are of equal value in giving candidates the opportunity to achieve their full potential.

Please ensure you check the latest documentation from the School Support Hub to ascertain the exact number of scripts that you should send for your centre's sample. There were one or two centres which did not send enough sample scripts on this occasion, and this delayed the moderation process.

Almost all centres submitted their coursework samples on time or before the 30th April deadline, with the appropriate paperwork completed. The latter consisted of the candidate Summary Assessment Form together with the MS1 or the Internally Assessed Marks Report. Please make sure that an Individual candidate record card is attached to the front of each piece of coursework and not sent in the overall package in one pile. In addition, please make sure that candidates are listed in candidate number order on the Coursework Assessment Summary Form.

Most of the paperwork was completed accurately and included with the sample. In almost all cases the sample included an appropriate number of scripts representing a fair cross section of the marks awarded (to include the top and bottom of the mark distribution). Just occasionally there may many candidates on one particular mark; in this instance at least two scripts on this mark should be included in the sample. Where CIE have requested the candidate numbers of the scripts to be sent, then please stick to this.

Please continue to double check the paperwork to make sure there are no mathematical errors. A larger number of errors were detected in this session. It is worth therefore restating the following points.

Errors usually take place in one of the following instances:

- Most commonly where the addition of the assessment criteria marks on the individual candidate record card was incorrect and this was subsequently transferred to the Coursework Assessment Summary Form and then to the MS1 forms.
- Transcription errors from the Coursework Assessment Summary Forms to the MS1 forms. Occasionally, this may occur where an internal moderation has taken place and the candidate's original mark has been entered instead of the changed mark.

Although Moderators do correct these errors whenever they are found, it is recommended that all centres should have their candidates' marks double checked.

Where a centre has more than one marker, it is essential that an internal moderation takes place. There is evidence that these have been conscientiously carried out by most centres and marks changed accordingly. However, the change for an individual candidate is not always reflected in the change in marks for individual assessment criteria, only the overall total out of 60. This information is essential for the Moderator's job to be

carried out effectively. There have been occasions when one marker's marks from a centre have differed markedly in standard from those of the other markers, and an internal moderation is the best way to resolve this problem. Where an internal moderation has resulted in no change of marks this should be stated on the Coursework Assessment Summary Form.

GEOGRAPHY (9-1)

Paper 0976/42
Alternative to Coursework 42

Key messages

For candidates to perform well on this paper they should:

- When answering hypothesis questions that ask whether they agree or not, always give their opinion first before any supporting evidence: this will usually be '*Yes', 'No', or 'Partially'/'To some extent'*. They should not just copy out the hypothesis if they agree with it. It is important that candidates make a decision, then provide the data or evidence for their choice. They need to be clear in their decision: expressions such as '*might be true', 'could be false*', '*true and false'*, '*generally true*' are too vague.
- If candidates are provided with a decision about a hypothesis, such as in **Question 1(c)(iv)** where they were told that the hypothesis had been agreed with, they should not then disagree with it and try to justify a different decision. They need to support the decision with evidence.
- Note that if evidence is asked for, this can include numbers and descriptive statements. If the question says '…do **not** use statistics.' as in **Question 2(b)**, then only descriptive statements will be credited.
- When giving figures in an answer, always give the units if they are not stated, for example: **Question 1(b)(v)**, 'Site C was higher at 3850 metres…'. It is also important that the numbers candidates use are clear. Write legibly as credit cannot be given if the answer cannot be read.
- When shading or completing graphs, use the same style as that provided in the question and use a sharp pencil to give a good dark image. Check they understand the scales used and the importance of any plots provided. If adding plots to a graph, candidates should use the same style as the plots already on the graph, for example: on **Question 2(b)(ii)**, the 76 plot should be a cross like the others already in place.
- When completing bar or pie graphs, make sure their shading matches the key, for example: if the shading is horizontal, not draw shading that slopes to the right or left. These points were important in **Question 1(b)(iv)** and **Question 2(d)(i)**.
- If they need to refer to data from a table or graph, use the exact figures from the table rather than make erroneous judgements from the graph. Try to avoid words like '*almos*t', *'nearly'* or *'approximately'* and choose a precise number, e.g. **Question 1(c)(vi)**.
- When they think they have finished, go back and check that all graphs have been completed. Candidates lost marks by missing out graphs.
- Read questions carefully and identify the command word, e.g. 'Describe' or 'Explain'. 'A question that asks 'Why?' requires a reason to be given not a description.
- Check that they are using the resources that a question refers to.
- Consider the mark allocations. Examiners do not expect candidates to be writing outside of the lines provided, so should not write a paragraph when only two lines are given.
- Be careful with the use of terms such as *'majority'* when the correct term would be *'highest'* or *'most'*. The 'majority' must be more than 50% of the statistics being described and is not a term that will be accepted if the data involved is less than 50%.
- If candidates need to write more than the lines allow, indicate this with a phrase such as '(*continued on additional page*)'. This is very helpful to the examiner in finding answers. A few candidates gave the wrong sub-section number to their extra work which made it more difficult to match to their earlier answer and credit correctly. Some using the extra pages referred to the page number of a sub-section, instead of the sub-section number.
- Use the extra pages provided if they need to add extra work; do not request an additional booklet which then complicates the marking process.
- Have a calculator, protractor and a ruler in this exam: several candidates did not appear to use these, for example, it seemed that they had drawn freehand bar graphs on **Question 1(c)(v)**. Sharp pencils also produce a more accurate plot on bars: a few drawn lines were too broad to judge accuracy.

General comments

Most candidates performed well. Some scored well across the paper, including on the more challenging sections requiring judgement and decision-making on hypothesis choices with evidence and other written answers. Others scored on the practical questions such as drawing graphs or completing tables or making choices from tables. Some candidates omitted questions, especially relating to the completion of graphs.

Most points for teachers to consider, when preparing candidates for this Paper relate to misunderstanding or ignoring command words and the importance of experiencing fieldwork, even if it is only in the school grounds or simulated in the classroom. Questions where candidates did not score well often related to them not fully reading the question or missing out straightforward graph completions.

Although this is an *Alternative to Coursework* examination, candidates are expected to show that they know about fieldwork equipment, how it is used and fieldwork techniques.

Any fieldwork experience is worth doing even if there is limited opportunity within the centre. Familiarity with maps, tables, sampling methods, measuring instruments and the various graphs and other refining techniques listed in the syllabus are also important for success in this examination. Sampling techniques remain an important part of fieldwork that can easily be taught and demonstrated within the classroom or school. Using quadrats is an example of fieldwork that could easily be carried out within most school grounds and would have helped with **Question 1**. Questionnaires and sampling exercises can be carried out and demonstrated without leaving the school, for example: sampling of students using random, systematic or stratified techniques or using internal questionnaires.

Comments on specific questions

Question 1

(a) (i) Most candidates correctly chose *'*extreme weather'. The most common incorrect response was 'volcano erupts', but the chance of it happening was the lowest so it did not constitute the greatest risk.

(ii) Most candidates answered this question quite well and suggested: waterproofs or warm clothes to counteract hypothermia; wearing proper boots or shoes or using poles to cope with uneven or slippery ground; GPS/mobile phones to keep contact, as well as working in groups, or even *'…in the old days you would carry a map…'* Weaker answers included, for example, *'suitable clothes and appropriate footwear*'. At this level, candidates need to be more specific.

(b) (i) Most candidates recognised a quadrat as the piece of equipment; a few, however, ticked 'callipers' or 'clinometer' and used them to answer **part (ii)**.

(ii) The strongest answers referred to choosing a site in a random, or systematic way, throwing or placing the quadrat on the ground, estimating the percentage vegetation cover in the squares of the quadrat then moving to new sites. It was important to refer to the use of the squares within the quadrat. A few candidates suggested writing results in a table or calculating the average, which was not related to using the equipment as stated in the question. Several candidates did not know about the use of a quadrat. Some suggested measuring the height and identifying the type of vegetation, or counting different types, which were irrelevant to estimating the vegetation cover.

(iii) There were few strong answers to this question. In the scenario, the students had visited three sites and, at those sites, had taken two measurements each, so the difference could have been from two different areas within the site being sampled, different perceptions by the students, maybe rock intrusions in one quadrat and not the other, or simple student errors in measuring: all were possible reasons for different measurements of bare soil. Few candidates gave specific reasons, for example: *'student error'* was too vague an answer as was *'the soil varies.'*

(iv) This question was a straightforward pie graph. Several candidates did not attempt it. Most who did attempt it performed very well. Those that plotted and shaded correctly were accurate in their graph work. Candidates need to know that, generally, in any graph completion, they should follow the order of plotting and shading in the key and other graphs provided.

(v) Most candidates correctly agreed with the hypothesis and recognised that, overall, the vegetation did decrease with height. Many weaker responses did not support the decision that paired vegetation cover related to height changes. An example of a stronger answer was that: *'Site C is higher than Site A and the percentage of vegetation decreased from Site A to C.'* This answer was then supported by data relating to the height and cover, for example: *'3700 m/Site A is lower than 3850 m/Site C and average vegetation cover decreased from 39% at Site A to 5% at C.'* Candidates must give specific data from the tables provided on the question paper to support their general statements. Here, the paired data needed linking to the change in altitude and the change in vegetation cover. Many weaker responses ignored the context of the hypothesis which was about changes in vegetation cover, instead they focused on the changes in bare soil.

(c) (i) Most candidates did know that the process of infiltration involved water soaking/being absorbed into the soil. Weaker responses focused on the rate or the amount of water in the soil: time, rates and quantity do not define infiltration. A few used the word *'infiltrate'* in their definition which gained no credit. Others described *'throughflow'* and *'groundwater flow;'* which are not the same as infiltration.

(ii) The first two parts of this question were done well. Most candidates realised that the pipe was to be used to store/contain water for the experiment and that the ruler was to measure the level or height of the water in it. A few suggested measuring the inside of the pipe with no mention of water, so gained no credit. The purpose of the stopwatch was to time the ten minutes of the experiment or to time for a set period. Several candidates thought the stopwatch was used to time until all the water had been absorbed by the soil: this was not the case. A few thought that the purpose of the pipe was to collect rainfall like a rain gauge which was then allowed to infiltrate.

(iii) Most candidates answered this question successfully by choosing Site C.

(iv) Successful responses justified Site C by stating that it had a huge or large difference between the two measurements compared to the other two sites. There could be no justification for choosing Site A and B in **part (iii)**.

(v) Most candidates successfully plotted 47.5, which was not easy. To gain credit, the line had to be above the 47 location but not touching the 48 line: most managed this with sharp pencils. A few plotted at 37.5 by mistake.

(vi) Several candidates just rewrote the hypothesis without giving any supporting evidence to show why they agreed with it. Many ignored references to height so just recognised the infiltration rate was 12.5 mm at Site A and 49.5 mm at Site C, which gained a data mark. For a second mark, this needed to be linked to the changing height: *'Site A at 3700m rising to Site C at 3780 m when the infiltration rate increased.'*

(vii) There were some sensible suggestions here, for example: the vegetation cover could vary, gradients could differ, the nature of the rock surface could affect permeability, and references to the soil could already be saturated. All of these could cause infiltration rates to vary. Answers that were not accepted included references to weather, rainfall, different altitudes and being close to the coast.

(d) The strongest responses on ways to improve the fieldwork method suggested ideas such as choosing the sites in a systematic way (not stratified); using more students to check the estimates so that they were less subjective and taking more measurements at the same site to eliminate anomalies and make the results more reliable. Weaker responses simply referred to taking more measurements or repeating the exercise; a few just described what had been done without suggesting any improvements. Some referred to using more *'people'* to get the data. Candidates needed to be more specific, for example: use more students or another group to repeat the experiment and not use the generic phase 'people'. Some suggested using better equipment but did not say what; using a larger quadrat was not an accepted answer.

Question 2

(a) (i) Many candidates did not recognise this Environmental Quality Survey as a bi-polar survey which the candidates should carry out themselves as individuals or as a group: it is not a questionnaire or survey in which people would be asked questions or to make judgements, although limited credit was allowed if they mentioned rating the features and ticking the form. Consequently, several

candidates wrongly suggested interviewing people to rate the features and make judgements. The question was also not about how to carry out or set up the EQS fieldwork; it was about how to use the recording sheet which would involve them circling the area of the EQS, deciding/agreeing what the score meant then making judgements/rating the feature on the scale –2 to +2 for the eight features and ticking the appropriate box.

(ii) The strongest answers suggested working in groups/pairs to eliminate bias or errors; to go to different parts of the same area to get a wider range of scores and to carry out the surveys at the same time in different areas with different groups so that data could be compared. Suggestions such as carrying out pilot studies, having more than eight features and any reference to using sampling techniques were not credited as they would not make the results more reliable. Many candidates did not gain credit as they suggested ways that they would sample the population, improve the way that they asked people, increase the numbers to make their results reliable or ask different age groups.

(iii) Those candidates who attempted to complete the radial graph scored highly. The only common error was to draw the top line to +2 instead to –1 to join the dashed line already provided. Many candidates did not attempt this radial graph question,

(iv) Although many candidates did not complete the radial graph in part **(iii)**, most successfully interpreted what the radial graphs and **Table 2.1** data suggested: overall the EQS showed that the hypothesis was incorrect as The Peak had a higher total score of +13, whereas the Central area was down to –5. As the larger number meant 'Good' on the EQS scale, clearly the environmental quality decreased or worsened from The Peak to the Central area, which made the hypothesis false. Most candidates did this well; those that decided the hypothesis was correct, mistakenly thought the higher the EQS overall score, the worse the environment. A few gave long lists comparing each individual feature which was a lot of work for little credit.

(b) This question was done well. Most candidates recognised that all the decibel readings in the Peak were less than those in Mid-Levels and those were less than those in Central – in other words the Peak was lowest and Central highest for noise. A few identified a relationship between the noise level increasing as the height of the sites decreased or got lower towards sea level. Some mistakenly referred to the CBD instead of the Central residential area which was outside the CBD.

(c) (i) Most candidates successfully completely the chart by correctly ticking Rows 1, 2 and 5. A few did not tick three rows. The features referring to measuring the 'speed of each vehicle…' and 'Students should work by themselves…' were frequently wrongly ticked.

(ii) Most candidates accurately plotted the number of vehicles counted at 76 on the graph.

(iii) Making the correct hypothesis decision and supporting it with evidence proved to be the most challenging part of the whole paper. Some candidates thought it was '*True'* others '*Partly True'.* The correct answer was that it was '*False',* as there was no clear pattern or correlation with the data being scattered and fairly randomly distributed on the graph. Overall, there was an increase towards the CBD in line with the hypothesis, then it decreased towards the CBD. A few candidates provided three figures to demonstrate the up/down trend, for example: *'Site 1 60 increased to Site 4 69, then decreased to Site 11 at 28.'* Those that thought it was *'True'* added the total number of vehicles in the three areas to give 163 to 256 to 292, which showed an increase all the way to the CBD, but the candidates did not take into account that the number of sites varied from 3 to 5; if they had taken the average, then the figures of 54.3. 64 and 58.4 would have revealed the true picture. Rounding average data up was not credited. Some confused the CBD with its neighbouring Central residential area.

(d) (i) Many candidates did not attempt to complete the divided bar graph; those that did scored highly. If candidates complete graphs and diagrams, this helps them with the written tasks that follow.

(ii) Generally, candidates made very good comparisons between the two sites, using words such as *'higher or highest'* or *'more than/less than'.* A few just stated the two percentage figures for each type of vehicle as a list, without any attempt to describe the differences so gained no marks.

(e) Very few candidates could suggest a sensible and practical way of carrying out this fieldwork investigation into comparing building heights in different city areas. Most discussed the choice of sites, including using transects and sampling areas. Some wanted to use an app, which is not

relevant to geography fieldwork, at present. A few suggested the trigonometry idea of using a clinometer to measure the angle to the top of the building, but they had not anticipated the difficulty of measuring the necessary distance from the building at street level in a busy urban area such as in Hong Kong. Sensible ideas included: counting windows going up or counting storeys for comparison and taking averages of samples within each area or creating separate categories of grouped storeys to compare. Taking photographs then taking them back to work on in class is not ‘proper’ fieldwork, as all the data required should be gathered outside of the classroom, then later refined and analysed in the classroom. A few candidates explained why building heights varied which was irrelevant to the question. Many candidates did not attempt this question; several others suggested unrealistic ideas to measure the heights of the buildings.