GEOGRAPHY

Paper 0976/12
Paper 12

Key messages

In order to perform well on this paper candidates should:

- Bring to the examination a pen, ruler, a sharp pencil and a calculator.
- Carefully follow the examination rubric by answering three questions, one from each section.
- Select their three questions with care. Read them through and study the resource material provided with them before making a choice.
- Attempt all parts of the questions which they select.
- Read the questions with care, taking time to study command words and words which indicate the context of the question. Command words such as 'describe'; 'identify'; 'explain' and 'compare' have specific meanings which candidates need to respond to.
- Take note of the focus in all questions and the context – this could include causes or effects; problems or benefits, people or the natural environment, and local or global.
- Learn the definitions of geographical terms in order to define and accurately use them. When defining terms candidates should not repeat a part of the word being defined as part of their definition but use completely different wording.
- In order to write answers which contain the appropriate detail and number of points the mark allocations and answer spaces provided in the question and answer booklet should be seen as a guide.
- Give detailed answers wherever possible, especially in the final two parts of each question, elaborating on or linking ideas to answer the question set rather than just including general information about the topic.
- Practise using graphs of different types, tables of data, photographs, text/brief articles, diagrams and maps, making use of the information provided with any maps, such as the compass, scale and key. Graph and map completion tasks should be done with care, using a ruler and sharp pencil to produce the required precision,
- If a question asks candidates to use statistics in an answer full marks cannot be obtained without doing so. However the statistics should be used to justify and support ideas rather than just quoting them in isolation.
- Be able to select an appropriate case study for each topic and include place specific information in answers, avoiding writing a long and irrelevant introduction.
- Be able to explain a process, using labelled diagram(s), geographical terms and correctly sequenced ideas.

General comments

The examination was considered appropriate for the full ability range of candidates and it differentiated well between candidates of all levels. As expected the most able and well-prepared showed competence across the paper and good answers were seen to all questions set. Most candidates were able to make an attempt at all parts of their chosen questions, others were less convincing, either in terms of correctly interpreting the questions or in producing detailed, accurate answers. As always success on the paper overall depended on producing high quality answers across the paper, but particularly to those questions requiring detailed answers, such as the last two parts of each question. High quality answers in these sections included developed ideas, with place specific information (if appropriate) or well sequenced references to physical processes.

Most but not all candidates followed the rubric by selecting a question from each section as required and lack of time did not appear to be an issue. Occasional rubric errors were still seen, either when candidates selected two questions within one section or when all questions were attempted. The presentation of answers from candidates was usually acceptable and most were legible. A significant number of candidates

made use of one or more of the continuation pages and most, but not all, carefully indicated which answers were being continued.

Questions 1, **4** and **6** were the most popular questions, though choice of questions was much more balanced in ***Section C*** than it was in ***Sections A*** and ***B***.

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

Comments on specific questions

Question 1

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

(a) (i) Most candidates correctly identified stage 3. The most common wrong answers were Stages 2 and 4, particularly Stage 2.

(ii) The majority of candidates made good use of Fig. 1.1 and correctly compared birth rates and death rates in the appropriate stages. A minority mixed up birth rates and death rates or wrote about the wrong stages.

(iii) This differentiated well. Some candidates scored one mark only for a general reference to birth and death rates changing whilst the high scoring responses considered what was happening to both birth rate and death rate during each stage.

Many weak candidates overlooked the requirement to use Fig. 1.1 only and gave reasons why birth rates and/or death rates changed. Others focused on birth rate or death rate alone rather than considering the changes in both which impact population growth.

(iv) Generally candidates scored well, many gaining high marks. All suggestions from the mark scheme were included in answers, particularly issues relating to contraception, the need for children to work on the land or look after the elderly and issues relating to culture and tradition. Those who lost marks tended to do so due to insufficient different ideas and suggestions rather than errors, however in some cases marks were lost due to writing vague words or statements which needed more elaboration (e.g. culture, religious beliefs, wealth).

(b) (i) Most candidates scored full marks. The most common error was to reverse the order of Tonota and Thamaga.

(ii) Generally well answered by candidates of all abilities giving a range of problems associated with rapid urban growth in urban areas in LEDC's. It was encouraging to see many candidates developing or linking ideas in the mark scheme, especially on employment, water, sanitation, and pressure on services, rather than listing simple bullet points. Some weaker candidates wrote about pollution, overcrowding, crime, congestion and lack of resources without giving sufficient detail on any of these for credit.

(c) There was a variety of case studies, with Australia, Canada, Russia, Namibia and Botswana being popular choices. Whilst some excellent answers were seen answers were limited by ideas being stated as superficial points, such as extreme climate or mountainous relief, with little attempt at linking or developing them in relation to how this is likely to dissuade people from residing there (e.g. the inability to produce food or establish communications links). Few candidates included place references. A common error throughout, regardless of the country chosen, was to explain why people moved or chose to live in other areas, rather than explanations of why the area they have chosen is sparsely populated. Many weaker candidates mistakenly continued the theme of birth and death rates, often linked to population control policies, or focused on emigration rather than population density.

Question 2

This was not as popular as **Question 1** but a significant number of candidates answered this question.

(a) (i) Most candidates identified 'urbanisation' as the correct answer though a few omitted it.

(ii) Most candidates identified the correct two continents, a minority wrongly gave North America for both answers.

(iii) Answers varied in quality but the most frequent correct impacts suggested were deforestation and its consequence for animal habitats, along with air and water pollution. Common wrong answers included global effects and impacts on people, however marks were also lost by some candidates who write in vague terms about the 'environment being destroyed' or 'pollution' without any form of qualification.

(iv) The question discriminated well. Good answers identified many of the ideas from the mark scheme, especially those related to employment and food production, and the effects on the family. Some weaker answers were too extreme in describing the abandonment of farms and underpopulation, whilst others wrote about impacts on urban areas.

(b) (i) Many candidates identified that the buildings were made of wood and were tightly packed together. All other answers from the mark scheme were seen but were less common. Marks were lost by candidates who gave value judgements and assumptions about the area or focused their answers on what could not be seen in the photograph rather that features that could actually be observed. For this type of question there is a need for candidates to develop skills to clearly describe what they can see in the photograph.

(ii) Generally well answered by candidates of all abilities giving a range of problems associated with squatter settlements, which result in high levels of disease being prevalent. It was encouraging to see many candidates developing or linking ideas relating to food and water availability/cleanliness, people living in close proximity, lack of hygiene and inadequate rubbish disposal, rather than listing simple bullet points. Some correctly exemplified their responses by references to specific diseases, such as cholera, malaria and Covid-19. Some weaker candidates wrote about pollution, poor education and poverty without giving sufficient detail on any of these for credit.

(c) This question achieved good differentiation. Most candidates were able to identify a valid urban area, with Mumbai and Dubai being the most common responses. There was a wide range of other acceptable examples used, particularly large urban areas in Africa or Asia. Whilst candidates generally offered a variety of reasons for migration, some only gave limited ideas (e.g. employment) and only the more perceptive were able to give specific details about the urban areas and develop several ideas fully. Some weaker answers focused on migration where the destination was a country rather than a named urban area (e.g. from Mexico to USA), although such answers gained some credit where ideas were relevant.

Question 3

This was much less popular question than **Question 4**, in fact it was the least popular question on the paper.

(a) (i) Whilst there were some accurate definitions the word 'transpiration' did not seem to be familiar to many candidates and few correctly referred to 'water vapour'.

(ii) Only the more perceptive candidates showed the required knowledge and understanding of the concept of interception and were able to explain that it varies from place to place due to different amounts/types of vegetation and from time to time due to seasonal changes in the vegetation characteristics. Many wrongly wrote about changing amounts of rainfall and different climate types.

(iii) Some candidates did identify all three processes correctly but many showed no knowledge of the terms and guessed wildly or left the spaces blank. Surface runoff/overland flow was the best known of the three processes.

(iv) There were significant numbers of candidates who correctly labelled all four features and most candidates were able to label at least one of a tributary and confluence. Source and watershed

were less well known and there was a significant number who either did not attempt the question or used large letters without arrows so it was not obvious which points exactly they were labelling.

(b) (i) Common correct responses usually gained marks for references to the waterfall and the rivers having rocks in them, however overall the photographs were not well used by candidates, with many either not comparing the two rivers or focusing on the valley and surrounding vegetation rather than the actual rivers as instructed.

(ii) There were a significant number of high scoring answers where candidates showed excellent knowledge of the four erosional processes, naming and accurately describing each one for full marks. In contrast many other candidates wrote in vague and simplistic terms about rivers 'wearing away the valley' or wrote instead about transportation processes.

(c) The question discriminated well between those who had learnt and understood delta formation and those who only had a superficial knowledge. Able and informed candidates explained the sequence of processes in detail, using appropriate terminology and supported their answers with the use of an informative labelled diagram to show the features. Others were familiar with the features but not so knowledgeable about the formation, other than the fact they resulted from deposition when the river slowed down on reaching a large water body. A common error was to use the term 'tributary' rather than 'distributary'. Some candidates wrote in detail about different types of delta formation but this was not what the question was asking. Significant numbers of candidates omitted the question entirely or wrote about another river feature, such as a meander.

Question 4

This question was chosen by many candidates and was the most popular question on the paper.

(a) (i) Although most candidates identified the boundary as constructive (divergent), a significant number mistakenly wrote that it was destructive. Oceanic was also a common wrong response.

(ii) Many candidates made good use of Fig. 4.1 and gained both marks. Almost all correctly identified the direction of plate movement but there was less success in identifying the convection currents. Some candidates thought 'X' identified subduction and a significant minority chose the correct two labels but reversed them.

(iii) Many candidates identified three different hazards from Fig. 4.1. A minority did not use the diagram as instructed, instead explaining how a volcano could cause death and injury without referring specifically to the hazards labelled on Fig. 4.1.

(iv) This was well answered by many candidates, typically by reference to fertile soils, geothermal power and the benefits derived from tourism and mineral extraction. Marks were lost by a significant minority of candidates who referred in simple terms to tourists visiting or minerals being present without elaborating in terms of how this benefits people living near volcanoes by creating work.

(b) (i) Many candidates successfully used comparative words to describe the different impacts on Kobe and Port-au-Prince and where candidates did not do this, they sometimes gained credit by the use of the word 'only' in the correct context. Weaker answers did not identify the two cities (referring to LEDC/MEDC instead) or just copied the statistics from Figure 4.2 without any interpretation. Others lost marks by referring to the depth of focus and time of day rather than the impacts.

(ii) The question differentiated well. There were many responses with good explanations of the variations and all mark scheme ideas were seen. Particularly common were references to differences in the depth of focus, the amount of planning to deal with an earthquake and the effectiveness of health care or rescue teams. Weaker answers included unrealistic ideas about warnings and predictions.

(c) This was another question which discriminated well, though a significant number of candidates lost marks unnecessarily by including irrelevant information about the impacts rather than the causes of the earthquake as required. Most did refer to causes but many did so only briefly or in a generic manner rather than specifically to the named example. High quality answers used appropriate terminology in answers referring to processes occurring at the correct plate boundary in the correct sequence – friction, pressure build up and release. Others had some knowledge of plate movement

at the boundary but were less convincing when referring to the processes occurring and 'plates collided' was a typical weak response. The most common named examples were Kobe and Port-au-Prince. Other commonly used examples were Nepal and Christchurch.

Question 5

This question was answered by a significant number of candidates but was less popular than **Question 6**.

(a) (i) Almost all candidates correctly named Chad.

(ii) The majority of candidates understood how the diagram was constructed and scored two marks, though some correctly plotted the points but omitted the linking line, or part of it. It is for tasks such as this that candidates need sharp pencils and rulers. Some candidates found that accuracy was difficult to achieve and the thickness or some lines made it difficult to see the plots.

(iii) Relatively few candidates showed an in-depth knowledge of the HDI and many answers appeared to be based on guesswork or ideas shown in Fig. 5.1. There were frequent incorrect references to literacy or GDP and only the best answers suggested the idea of it being a composite indicator and indicated accurately the factors which were combined i.e. life expectancy, GNI and years of schooling.

(iv) Many candidates found this question challenging and few showed good understanding of why there are inequalities in levels of development within countries. Many tried to compare countries, for which some credit was awarded for generic ideas where appropriate. Others referred to inequalities in opportunities for individuals rather than considering variation in levels of development as required. More perceptive candidates did correctly refer to variation within the country in such things as accessibility, education, employment, food and water supply or contrasted urban and rural areas, especially in terms of investment.

(b) (i) This was generally well answered with most candidates showing at least some understanding of the merits of the scheme. It differentiated well and all mark scheme ideas were seen. Common errors were the obvious overlap or repetition of the same idea in different words. Some candidates did not focus on education for under sixteens and wrote about jobs and taking care of the family.

(ii) This was a good discriminator. Many candidates showed sound understanding of their chosen plan for future development in the country and there was a fairly even balance seen of plans 2, 3 or 4. A small minority chose Plan 1 and repeated their ideas from the previous question which gained no credit. High scoring responses were seen for each plan and many of these candidates developed ideas and/or included ideas resulting from the multiplier effect which would benefit the local people and the country as a whole. Common errors included the use of vague ideas such as 'improve quality of life' and 'more development will occur'. Many references were made to the 'infrastructure', most of which were relevant as they referred to specific aspects of it. Candidates should however note that the word 'infrastructure' alone will not be credited unless there is more precision.

(c) Many candidates named a valid case study, sometimes a small area or a city and sometimes a more extensive area and some choices were local to the candidate (e.g., locations in Zambia and Zimbabwe). The use of examples which are local to the candidate rather than textbook examples can be a good strategy, providing there is sufficient breadth and depth in the study, which sadly is not always present. Many different acceptable examples of economic development were seen, ranging from tourism to mining, the key to success being the ability to develop or link appropriate ideas. The development was often the linking of something basic e.g. 'trees are cleared' or 'deforestation' followed by comments about loss of habitats, extinction or impacts on the food chain. Air pollution and water pollution were also ideas which tended to be well developed or linked with other valid ideas. Less successful responses simply wrote bullet lists of ideas, whilst others focused more on the economic development rather than how it was affecting the natural environment. Others wrote about the impacts on people rather than the natural environment.

Question 6

This question was chosen by many candidates.

(a) (i) Most candidates gave a valid definition though a few gave definitions of commercial farming whilst others just referred to subsistence farming being 'small scale'.

(ii) Many candidates used the key correctly to shade the three areas. Other candidates gained a mark for rice fields but found the vegetable gardens harder to correctly locate. Completion of shading, such as this, needs to be done with care according to that used in the key.

(iii) Most candidates correctly suggested a reason related to the rice fields needing to be on the flood plain or in proximity to the river for access to water. Others also referred to the need for more space for the rice fields or being able to protect the vegetables if they were close to the village. Relatively few recognised that the vegetables would be likely to need more attention than rice so were located near the village and that they would be likely to be harvested more regularly. A common error was to state that vegetables were used more often than rice which is unlikely to be true.

(iv) This discriminated well. High scoring candidates wrote about the loss of wood supplies for fuel or building and the loss of food sources provided by the woodland. In contrast weaker candidates made vague statements about flooding in the village and wild animals attacking. Some candidates mistakenly wrote about the problems of growing crops in the cleared area rather than the loss of the woodland or wrote about impacts on the natural environment rather than local people.

(b) (i) Many candidates seemed to mistake or mis-read 'well' for 'wall' and so wrote about protection. Weaker candidates merely referred to increased water supply without specifying how it would increase the farmers food supply. Candidates generally scored better on fences and grazing goats.

(ii) This question differentiated well. Many candidates described or named a variety of methods, some of which they developed, but some only listed one or two ideas, such as using included manure or fertiliser, pesticides, and machinery. Common errors included vague references to increasing the area under cultivation, using 'better' farmland and growing 'more crops'. Shifting cultivation was also suggested as an unrealistic solution whilst other candidates continued to refer to the ideas previously discussed in **(i)**.

(c) There were some excellent detailed answers which identified different natural factors such as drought, floods, crop disease and pests and explained in detail how they impacted agriculture. Many of these answers focused on well documented examples such as South Sudan, Swaziland, Zimbabwe and other African countries, occasionally with place detail or details of specific pests or diseases. Weaker candidates tended to write in generic terms limiting their answers to one issue, typically a climatic hazard such as drought. Despite the clear reference to natural factors in the question many candidates did not limit their responses to these and included irrelevant details about issues such as war, corruption and other human factors.

GEOGRAPHY

Paper 0460/22
Paper 22

Key messages

- When measuring distances on survey map extracts (**as in Question 1(d)(i)**), candidates are recommended to use the method described on page 21 of the syllabus and avoid calculations completely.
- The formation of a coastal spit was poorly understood in **Question 3(b)**. Syllabus ***sections 2.1, 2.2*** and ***2.3*** each list a series of landforms. Candidates should be able to describe these landforms and to explain their formation.
- When answering photograph questions (in this paper particularly **Questions 3(b)** and **3(c)**) candidates should focus on what can be seen in the photograph rather than speculation.
- Candidates should know the meanings of terms listed in the syllabus.

General comments

Candidates performed well in most parts of the mapwork question although slightly less well in the distance measurement and compass direction parts of the question. There were aspects of all questions which candidates found difficult but **Question 4** was the main area of difficulty for a large number of candidates.

Question 1

(a) Candidates were able to score high marks on this section, showing good skills of finding features on the map and identifying them using the key. The river at **A** was the *Licodia*, the height above sea level of the spot height at **B** was *317 m*, **C** was a *church*, **D** was a *cemetery* and **E** was a *national main road.*

(b) Most candidates were able to identify the area of dense settlement (**Q**) and the area with land over 900 m (**Q**). A large number identified area with a railway (**P**) but fewer identified the areas of dispersed settlement (**P** and **Q**).

(c) Some candidates found the questions relating to the cross section (Fig. 1.3) difficult, although full marks were frequently scored. The feature at **X** was a *river* (or the Fiume Simeto), **Y** was a *national main road*. Candidates were generally able to label the position of the settlement at Biancavilla correctly and almost all did so using an arrow pointing to the correct position on the line of section. Some candidates omitted this part of the question.

(d) Although there were many correct answers, some candidates found the distance measurement difficult. This was particularly so where candidates attempted unnecessary calculations. Examiners accepted answers within the range of *7500 to 7850 metres*. Candidates generally gave the correct compass bearing (*south east*) but found it more difficult to give the corresponding bearing of approximately *139°*. The grid reference (*822674*) was mostly correct.

(e) There were many very good answers with candidates often referring to the *flow to the south*, *meandering*, *tributaries*, *variable width* and *islands*. Occasionally candidates spoiled the point by incorrectly described the tributaries as leaving the river. Less frequently candidates noted the *gentle gradient* of the river.

Question 2

(a) Most candidates correctly gave the number of females aged 25 – 29 as 4 per cent.

(b) The predicted changes in the world population could be described by referring to Figs. 2.1 and 2.2 and many candidates noted correctly that the percentage of people aged *0 – 49 would decrease* and the percentage *aged 50 and over would increase*. Some candidates misinterpreted the question and answered by describing differences between age groups using only Fig. 2.1.

(c) When giving differences between the population structure of the Central African Republic and the world, those candidates who picked out the differences in age groups (*Central African Republic had more young, fewer middle aged and fewer old*) scored well. Those candidates who simply described the shape of the diagram without interpretation, e.g. thinner at the top, scored less well. Other candidates strayed away from population structure and made deductions about life expectancy, birth rate and death rate which did not gain credit. Many candidates correctly suggested that a problem created by this structure was the large dependent population, or more specific problems of this high dependency such as pressure on the education system.

(d) There was a mixed response to this part of the question. Many candidates noted *the faster predicted growth rate in the Central African Republic* and some even gave the correct growth rates of Central African Republic 72 per cent and world 23 per cent. Others failed to note that the question referred to the rates of growth and simply noted that the world's population would increase by a greater number than that of the Central African Republic.

Question 3

(a) Most candidates correctly identified the three urban land use zones as Fig. 3.1 industrial, Fig. 3.2 residential and Fig. 3.3 CBD.

(b) When describing the land use in Fig. 3.2, those candidates who concentrated on what could be seen in the photograph scored well. Three marks were easily scored by noting points such as the *grid pattern streets*, *single storey houses*, *trees*, *swimming pools*, *gardens* or *yards* and *wide* or *straight roads*. Other candidates speculated on the possible use of the buildings in the background and did not gain credit for this.

(c) In suggesting a reason for the growth of the settlement in Fig. 3.3 credit was given to those who argued for a commercial (CBD) function and those who argued for it being a port. Candidates did not always follow the instruction to 'Support your answer with evidence from the photograph'. Evidence for the port (or trading) function included the harbour, ships in dock and sheltered bay. Some of these were also evidence for the commercial function, along with the high rise buildings.

Question 4

(a) Most candidates failed to identify all four landforms shown in Figs. 4.1 and 4.2. **W** was a lagoon or lake, **X** was a spit, **Y** was a bay and **Z** was river.

(b) ***Section 2.3*** of the syllabus states that candidate should be able to 'Describe and explain the formation of .....spits'. The majority of candidates were unable to do this. Many felt that this was due to the action of the wind or rivers or coastal erosion. Better answers described the formation by a sequence of events such as *onshore winds, swash at an angle to the coast, backwash at right angles to the coast, longshore drift moving material along the beach and deposition at a bend in coast*.

Question 5

(a) Most candidates knew the meaning of the term HEP (syllabus ***section 3.5***) but fewer knew the meaning of the term drainage basin (syllabus ***section 2.2***).

(b) Many candidates used Table 5.1 to explain that the Blue Nile had a better water supply than the other two rivers because it had a *larger discharge* and it *did not dry up*. Fewer realised that the large variation in flow would require a dam to collect water from the wet season in June to September.

(c) Sudan and Egypt were the countries most worried about the building of the dam because they were downstream of it and potentially their water supplies for irrigation and HEP could be affected. Many candidates failed to deduce from Fig. 5.1 that the Nile was flowing from south to north and Egypt and Sudan were downstream of the dam, so their answers were confused.

Question 6

(a) The majority of candidates correctly identified a *bar graph* as the type most suitable to show the information in Table 6.1.

(b) This was generally well answered with candidates noting that most of the countries were in the northern hemisphere and Europe but there were two countries relatively close: South Africa and Reunion.

(c) When using Fig. 6.2 to suggest why tourists visit Mauritius all year, many candidates noted the hot temperatures all year. Candidates who gave a list of figures, or who described the temperatures as cool, did not gain credit. The evidence from Figs. 6.1 and 6.2 which suggested why Mauritius was a popular tourist destination from the listed countries included Mauritius being *hot or hotter* than the other listed countries, the climate would allow *winter tourism for northern hemisphere countries, the nearness to South Africa and Reunion* to would reduce travel costs, the coastal location would allow *beach tourism and* Mauritius would be particularly attractive to *people from landlocked countries* like Switzerland. Candidates scored all these points, although full marks were rare.

GEOGRAPHY

Paper 0460/03
Coursework

Key messages

This report refers to the performance of centres in the November 2020 examination, however, the comments made here are equally applicable for centres that make their entries for the first time in June 2021.

The number of centres for the coursework option showed a very small decrease compared with November 2019. The number of individual candidates' entries did show a larger decrease although this was due to the withdrawal of a large centre due to the COVD-19 pandemic. There were some centres who opted for the 0976 03 option rather than 0460 03. For this session there was a bigger proportion of entries from the Northern Hemisphere which was largely due to an increase in the number of Italian centres. Human Geography topics overwhelmingly dominated over Physical Geography ones but candidates achieved equally well on each.

For most established centres, the quality of the coursework submissions continues to improve. However, for some new centres it was clear once again, that all the available documentation had not been read and/or the staff involved had not received training on how to run and/or mark the coursework option. If you have not already done so, then you should submit an outline proposal for approval by CIE. This describes the nature of the coursework that you are planning for your candidates to undertake, and should be based on the route to geographical enquiry. Besides the *Moderator's Comments on school-Based Assessment of Coursework* report on the submitted coursework, it is the main opportunity for CIE to offer advice based on good practice as well as comment on proposals which may hinder a candidate. This particularly applies to the nature and amount of data collected. It is important that enough primary data is collected to allow candidates to exhibit a depth of understanding in their analysis. Provided suggestions are at an appropriate level for those studying IGCSE and the topic is on the IGCSE syllabus, then approval is nearly always forthcoming. Please note that the Outline Proposal service will be phased out by CIE after November 2021, so this will be the last opportunity to get your plans vetted. The latter is to be replaced by more in-depth information on the CIE website.

There is training available online for teachers who are new to the coursework option. There is also the Coursework Handbook available from CIE which includes examples of coursework which are annotated to show how they should be marked. Training courses at present have unfortunately been extremely curtailed, owing to the COVID-19 Pandemic.

Given the ongoing situation with COVID19 we do recognise at CIE that it might be difficult to collect primary data at present. With this in mind, if you are unable to undertake your planned fieldwork visit, CIE would be happy for the data collected in past years to be treated as primary data. Candidates can write up the data collection section as if they had conducted the fieldwork themselves. This may of course, not be appropriate for all centres, especially those doing the coursework option for the first time. If the fieldwork does takes place as planned, then in this instance, there is the opportunity to compare the data collected with that collected previously, and to recommend improvements.

Please note, that it is expected that data is collected in groups. This is then collated by a teacher and redistributed to the candidates for them to work on their individual hypotheses. For safety reasons CIE does not recommend that candidates collect data on their own, indeed, any proposals detailing candidates undertaking separate topics which require their own discrete data to be collected individually, will not be approved. Should a candidate need to add extra data for their own study to that 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 on a river or along a beach.

It must be pointed out that for most centres the moderation process runs smoothly. It is inevitable that this report focuses on aspects of the moderation which were not done so well or where candidates could improve

their coursework to access the higher grades.

General comments

It was reported that in general the studies were well balanced with candidates demonstrating a familiarity with the Route to Geographical Enquiry. On occasions the introduction and methodology were too long and the analysis and conclusion, too short. However, it is quality not quantity that should be emphasised.

It is important that the collection of a large amount of primary numerical data or data which can be quantified, for example from questionnaires, takes place. Where candidates collaborated in one overall primary data collection exercise, these tended to be well organised and resulted in a large amount of data. This was collated by a member of staff and subsequently redistributed in order that each candidate could work on his/her own individual hypotheses. However, where candidates collected their own data in small groups this did not tend to work so well. Those candidates who based their studies solely on secondary information from the internet, only made a cursory attempt to follow the Route to Geographical Enquiry, and thus restricted the marks they could score.

All studies should be clearly individual despite the fact that data collection is a collaborative exercise. Such individuality is key to reaching the highest marks and can be achieved by each candidate testing at least one hypothesis which is peculiar to them alone. This is besides one or two which are undertaken by the whole group. It is therefore important that a group of candidates undertake a range of different hypotheses on any one topic. There are some centres in which all candidates do the same hypotheses, state exactly the same facts in their introduction, and submit the same computer-generated graphs. In some of these cases very little individuality was demonstrated.

It was pleasing to see that most studies were well focused and kept to the word limit. The better studies were those that were more concise. There were only a few that were overlength; these tended to be a little verbose and/or lost sight of the original aims of their investigation. Getting candidates to declare a word limit usually gets them to concentrate on the issue.

By and large candidates were able to demonstrate sound background knowledge regarding their chosen topic. However, where geographical theory was described it was often not applied with any degree of detail in the Analysis and Conclusion sections of their study.

The strongest area for some candidates was the *Organisation and Presentation*, where many not only effectively employed a range of different methods, but showed some complexity in their graphs which gained access to the higher marks for the criteria. However, some scanned graphs and maps were not always legible. The data collection exercise was also well described by the majority of candidates who thus scored highly for the *Observation and Collection of data* criteria. The *Analysis* continues to be the weakest section, and although description of the data was often thorough it lacked explanation or the explanation was rather speculative. The *Conclusion* often lacked reference to key data, which prevented access to the highest marks, although the *Evaluation* was in comparison, stronger and revealed that many candidates had a good appreciation of some of the drawbacks of their data collection strategies.

Most centres applied *the Generic mark scheme for Coursework assessment* accurately and consistently and thus Moderators tended to agree with the order of candidates. For those centres whose marks had to be adjusted, there again seemed to be a pattern of negative adjustments above 47 marks and positive ones for those below 35. This particularly applied to the *Analysis*. In general, *Knowledge and Understanding,* and the C*onclusion* tended to be adjusted negatively, while *Organisation and Presentation* was adjusted positively. Those very few centres which had a large adjustment applied, were generally relatively new to the moderation process; the reasons would be detailed in their coursework report.

Comments on specific assessment criteria

Since each centre will receive a coursework report entitled *Moderator's Comments on school-Based Assessment of Coursework*which will refer to both particular strengths, and weaknesses, it is points that are common to several centres which are reported below and are based on each of the assessment criteria in turn.

The criteria of *Knowledge with Understanding* continues to be assessed a little too highly. Markers are reminded that whilst the bulk of knowledge tends to be found in the introduction, it should, along with a

candidate's level of understanding, be considered over the study as a whole. In particular, the application of relevant theories may be judged in the analysis, when explanation for the patterns that have been identified are sought. Relevant comments made by the marker on the script, for example when a theory has been appropriately applied or indeed a well-reasoned account of why it has been dismissed, are very useful in the moderation process.

Whilst almost all candidates clearly stated the aim of their study there was a strong contrast between established centres and those which were new to the coursework option. In the former case, the studies tended to be focused around two or three hypotheses which were well justified. This justification often consisted of the expected outcomes for each hypothesis, usually based on theory with appropriate use of geographical terminology. Background information regarding the study area was kept to a minimum with historical detail only being included where comparison with the past was integral to the study. Theory was well linked to either the aims of the study or to each individual hypothesis. A good example was the reference to the expected push and pull factors as reasons for migration to a particular region or country.

For some studies the introduction possessed just a list of hypotheses with little or no comment as to why they were being tested or any notion of a predicted outcome. For some new centres the hypotheses were often absent and thus the studies turned out to be far too general and less focused on specific aspects of the topic which were to be tested. Geographical theory, where it was included, was often poorly related to the aims of the study, and referred to only in the introduction. One common example were the urban models of Burgess and Hoyt. These were often scanned in from internet sources or textbooks but with scant or no utilization by the candidate to explain why they had been included.

There is still a tendency for some centres to encourage their candidates to include a glossary of geographical terms. These are not only relatively superfluous, but a waste of wordage which could be used to good effect elsewhere, such as in the analysis. Furthermore, when copied from textbooks, they tend to demonstrate little regarding the candidates' level of understanding.

Most candidates have been made aware of the need to include a map of the study area to locate the places where data was collected, whilst many also showed its location within a region or country. However, it is important that these maps, whatever the source, have a scale and orientation. Where these maps are scanned into a space on a particular page, it is important that the detail on the map is still legible. In addition, it is expected that these maps are utilized by the candidate, for example using annotations to indicate the relevance of various locations to the study. A few candidates still include three or four maps at different scales to show the study area at a world, continental, regional scale etc. This is not necessary and generally adds little to the quality of the study.

As in the past November sessions, the criteria *Observation and Collection of Data* was by and large, accurately assessed by the markers and very few adjustments had to be made. The only exception were a few centres who were new to the coursework module and set a topic/topics in an essay format that entailed collecting and synthesising information culled from the internet or textbooks. Since this is entirely secondary data, then no mark could be awarded for the collection of primary data. It must be noted that there is a place for numerical secondary data, but usually for comparison with the primary data collected, in studies which are looking at trends with a time element.

The Moderators noted that the COVID-19 Pandemic seemed to cause relatively little disruption to data collection routines for many centres. Others introduced novel ways to sidestep going out into urban areas, for instance, the use of online questionnaires which were collated in the same way as if they had been collected in the field. Online interviews were also held by some candidates.

When working in groups the fieldwork collection strategies were carried out in an organised way with each candidate playing their part in order to establish a pool of data from which individuals could draw from in order to confirm or reject their hypotheses. Environmental quality surveys, questionnaires, pedestrian and traffic counts for instance, allowed for appropriate presentation methods and analysis to follow. However, it should be noted that those centres who allocated more than half a day to data collection achieved much better results than those who attempted to collect data over a one or two hour time slot.

Many centres now encourage their candidates to describe their data collection in the form of tables. It should be made clear that this wordage does count towards the overall word count. Many include some evaluation of each data collection technique; this is best left for the concluding section of each study in order to prevent repetition.

The need for at least 50 questionnaires collected by a class of candidates as a whole in order to yield enough data for detailed analysis is generally well understood. However, there are still a minority of candidates albeit in small groups, that make only a token gesture to undertake data collection by questionnaires. Some for instance, just restricted their questionnaires to family members which rather limited any attempt at analysis. The main weakness of the write up of data collection using questionnaires, was the lack of detail of the sampling strategies. Where such a description existed the justification of the method was often missing. This also applied to why each of the sites used for data collection was chosen.

The most successful studies included tables of the data collected. This is vital evidence to show the origin of data used in the production of graphs and are helpful for candidates to pick out trends or highlight anomalies in their analysis. Such tables were then integrated with the data presentation and analysis sections, thus facilitating easy reference as each graph can then be analysed in turn. Such data tables also indicate that the candidate has taken part in the data collection exercise. Further evidence could be a series of photographs annotated to show candidates undertaking the various stages of their data collection.

The criteria *Organisation and Presentation* exhibits the most variation in marks given by centres compared with the moderated assessment. 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 not been utilized 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 underscored.

These techniques must be effective in portraying the data and this session, there were examples of line graphs used for discrete data rather than continuous data which meant they were inappropriate. It should also be noted that different sorts of bar graphs only count as one technique. Furthermore, the same data presented in a number of different ways is likely only to count once,

For many candidates the presentation of their data was the strongest aspect of their studies. Many demonstrated a range of techniques effectively, although there is still a tendency to rely on simple bar graphs and pie charts, especially amongst the lower scoring studies. However, there were some complex techniques employed accurately and these included compound bar graphs, radar graphs, flow line maps and kite diagrams. It was felt that some candidates missed the opportunity to locate graphs, such as bars or proportional circles on an outline map of the study area. Well drawn and annotated field sketches were seldom seen as were statistical techniques such as Spearman's Rank Correlation which had all the workings shown. Both the latter would be regarded as complex techniques of data presentation.

There seemed to be a plethora of incomplete bar and line graphs, which having been drawn accurately, lacked axis labelling, particularly on the Y axis. On occasions titles were also missing. Since the majority of graphs are produced by using computer programmes, it is wise that having inputted the data, candidates inspect the results carefully and make any necessary amendments.

Most centres encourage their candidates to take photographs during their fieldwork. These should be taken individually rather than the same photographs appearing in almost every study from a particular centre. This is a clear opportunity for a candidate to make his/her study more individual. Furthermore, the use made of photographs varies widely. The best examples are those which comply with a clear message, 'integrate, entitle and annotate'. Those which are lumped together in an appendix serve no useful purpose.

The 'Organisation' usually presented no problem with almost all candidates following the route to geographical enquiry and thus, providing a well-defined structure to their studies. The only exceptions were those from centres which did not undertake primary data collection. This structure often, but not always, included an index of contents and page numbering. Many took great care to reference their secondary sources with an extensive bibliography. Unfortunately, others provided no references at all, despite using theory in the form of diagrams which had clearly come from a textbook or the internet. Only a few candidates now lump all their graphs and photographs together rather than integrate them with their text. However, some candidates included graphs in an appendix for example from a questionnaire, which were not relevant to the hypotheses being tested. These could not be given credit.

The Analysis remains the weakest criteria for many candidates. It was in most cases, accurately marked by established centres for the major part of the mark range. However, there was some disparity with the Moderator's assessment at the top end of Level 3 where it was felt that there was not sufficient reference to key data and a reliance on description rather than reasoned explanation. Conversely, at the lower end of the mark distribution, some candidates were under marked as graphs were described with reference to the data and thus were worth more than the low Level 1 mark that was given by the marker.

A limited number of candidates did give a thorough description of the patterns revealed by their graphs using key data and then went on to give valid reasons to show whether or not these fitted their hypotheses. However, more often, a comment such as 'This shows the pattern fits Hoyt's Model' was rarely followed with a depth of discussion to show how and why. Candidates are becoming adept at accurately identifying anomalies, although they could be highlighted by annotations on the actual graphs. However, explanation for their presence is often speculative with phrases like 'The reason could be …..' being too common. Furthermore, there were some analyses which were severely limited by a lack of data. Traffic or pedestrian counts for instance, could have been taken at more times during a day or on different days of the week, allowing for averages to be calculated. Similarly, where only a few questionnaires were carried out, the results tended to be very limited, giving rise to little depth in discussion.

For those very few centres whose candidates collected very little primary data or relied totally on synthesis of existing information form the internet, this made an analysis almost impossible, even though it may have been stated as a sub-heading.

Conclusions were very variable in quality with the *Conclusion and Evaluation* criterion tending to be overmarked by some centres. Nearly all candidates referred to their hypotheses and stated whether they were confirmed or rejected. However, only a few went on to give clear reasons with comparison to the theory stated in their introduction backed up by key data as evidence, and were thus worthy of the higher Level 3 marks. In general, conclusions were too short or tended to just repeat statements from the analysis. The lack of reference to theory and key data was widely reported by the Moderators. The latter is usually, but not entirely numerical in nature, and can be stated characteristics shown on graphs, maps or tables. These must however, be clearly referenced for example, 'On Fig. 3 it shows that….'. Those centres whose candidates did not test any hypotheses invariably made conclusions which fell in Level 1.

It must however, be noted that although there must be a Conclusions section, concluding statements in each part of the analysis section can also be taken into account. These should be indicated by markers by appropriate comments on the script. Similarly, where some evaluative statements on data collection techniques occur in the description of the methodology, these can be counted under *the Conclusion and Evaluation* criteria but it is still expected that a separate section entitled 'Evaluation' exists.

The evaluation was often the strongest part of a candidate's concluding section. Higher scoring candidates clearly identified both positive and negative factors and offered both sensible and viable solutions. Those that were in tabular form, tended to be less detailed with some solutions rather superficial e.g. 'count on more days' (traffic count) or 'smile to attract more interviewees' (questionnaire). The evaluation often provided a clear indication of just how much candidates understood about the tasks they had been asked to undertake as part of a group data collection exercise and just how much they felt a part ownership of the data that had been collected. Although, it was often thought to be hard work, one sensed that overall, the candidates had enjoyed the opportunity to go out in the field.

Administration

All centres got their samples to CIE on time. Most of the paperwork was completed accurately. These were included with the sample, and each script had the Individual candidate record card attached. Candidates were listed in candidate order on the Coursework Assessment Summary Form, which also helped moderation. Some centres however, did not include the correct number of scripts for their sample. This should be as follows;

0 – 50 candidates – 10 sample scripts
50 – 100 candidates – 15 sample scripts
101 + candidates – 20 sample scripts
201 + candidates – 10 per cent of the entry

Most samples comprised a balance of marks, including the highest and lowest scoring candidates. Please continue to double check the paperwork to make sure there are no mathematical errors either in the addition of marks on the Coursework Assessment Summary Form or in the transcription of marks to the MS1. Very few errors were detected this time round.

Many thanks for the conscientious approach of the markers who provided helpful comments on the scripts. These generally used the wording from the Generic Mark Scheme for Coursework Assessment to justify the marks awarded. These were very helpful and facilitated the smooth running of the moderation process. If your centre has not done so, it would be very much appreciated if markers make these comments (in pencil)

on the scripts for your next submission. Where a centre has more than one marker it is essential that an internal moderation takes place. There is evidence that these have been carried out by most, but not necessarily, all centres, and marks changed accordingly. Furthermore, the change mark for an individual candidate is not always reflected in the change in marks for individual assessment criteria, only the overall totals. These should be written on the Individual candidate record card. 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 has differed markedly in standard from the remainder of the markers and an internal moderation is the best way to resolve this issue.

GEOGRAPHY

Paper 0976/42
Alternative to Coursework

Section 2

Key messages

A few tips to pass on to candidates:

- When answering hypothesis questions that ask whether you agree or not, always give your opinion first before any supporting evidence. This will usually be *Yes, No* or *Partially/To some extent*. Make your decision after weighing up the evidence then state it at the start of your answer. Some candidates provide the correct evidence but seem to forget to write down a decision. If you agree with the hypothesis, do not just repeat the wording of the hypothesis; you need to make a decision about it and state it too. There is no credit for just repeating the hypothesis word for word as an answer.
- When giving figures in an answer always give the units if they are not stated for you e.g. km, °C, mm.
- Take care when adding plots to graphs and use the key provided. Also take care when joining lines up between plots as marks are often awarded for this in addition to the plots. Any numerical answers should be clear e.g. a 4 often looks like a 9; a 2 like a 5, a 0 like a 6, a 1 like a 7.
- Read questions carefully and identify the command word e.g. *Describe, Explain...*and also the key words, for example if asked for *data* then statistics are required whereas being asked for *evidence* could involve description as well as statistics. It might be helpful if candidates underlined the key command words in a question.
- When asked to compare, make judgements e.g. *higher, lower*, rather than just list comparative statistics. If comparing statistics it is important to use paired data rather than one set on its own. It is also important to indicate which statistics relate to which sites if appropriate e.g. in **Question 2(c)(iii)** when choosing two settlements to illustrate how services increase with population, it was not enough to say Settlement C had a population of 12,226 and 11 services; it needs to be compared with another settlement that is smaller with less services to prove the point e.g. Settlement E with 262 population and 1 service.
- Check you are using the resources that a question refers you to for evidence or data e.g. Table 1.1 (Insert) and Fig 1.2. Remember some resources will be in the Insert and not on the examination paper. If you are referred to a map or graph and a table, use statistics from the table rather than try and judge them from the map or graph which can cause inaccuracy.
- Attempt all completion tasks on graphs, tables or diagrams – not all the answers are on lines and in writing. Many candidates are missing out on relatively easy marks this way; in this session this was particularly the case with **Questions 1(a)(ii)**, **1(c)(iii)**, **1(d)(ii)**, **2(b)(ii)** and **2(e)(ii)**. Note that, where there is a completion task, the instructions are now **emboldened** to try and avoid you missing them out. It is better to use a bold pencil when completing graphs or diagrams so that errors can be erased and corrected; candidates who need to correct answers in ink often create a mess that is difficult to credit.
- Use a ruler and a sharp pencil to improve accuracy and presentation where required. This was particularly the case with the bar graphs and graphs that required a cross to be plotted.
- Take into account the marks awarded. Examiners do not expect candidates to be writing outside the lines provided so do not write a paragraph when only two lines are given – this wastes time.
- As all scripts are now scanned for marking, it would be preferable for candidates to write in black, using a sharp pencil, and make sure any plotting and shading of graphs stands out clearly.
- If you have to write more than the lines allowed, there are additional lined pages at the back of the examination paper to use. Indicate this with a phrase such as (*continued on page 16*). This is very helpful to the Examiner in finding the rest of your answers. Also make sure you have indicated the correct question number on extra pages; in this session particularly quite a few candidates gave an incorrect question reference which made it difficult to match to the correct answer earlier in the booklet. There is no need for you to request additional booklets.
- Bear in mind that if an Examiner cannot read your writing, a mark cannot be awarded. Make sure all your work is legible.

Section 3

General comments

Most candidates found this examination enabled them to demonstrate what they knew, understood and could do although **Question 1** – the Physical Geography question – proved to be slightly more difficult than **Question 2** as is often the case. The overall range of marks was from 1 to 54/60 with weaker candidates scoring on the practical questions, such as drawing graphs, and those of higher ability scoring well on the more challenging sections requiring explanation, comparison and judgement especially regarding hypotheses.

There is less general advice to be given for areas for improvement with this paper than with others. As there are no choices to make, it is difficult to miss sections out – though many candidates still do – and on this paper there were a few sections that indicated disappointingly high percentages of *No Response*. These were especially noticeable where graph completions were required i.e. on **Question 1(a)(ii)**, **Question 1(c)(iii) Question 1(d)(ii)**, **Question 2(b)(ii)** and **Question 2(e)(ii)** – especially as completing graphs proved to be a relatively easy task for candidates that attempted them. If there is a graph on the examination paper, candidates should expect to have to do a plot or plots on it; it would be very unusual if a graph on the exam paper – unlike in the Insert – was already completed. All the instructions for completing graphs and diagrams are **emboldened** so candidates should not miss these.

There may have been a few time issues given a few *No Response* answers at the end of **Question 2** but the booklet format does not allow or encourage over-writing of sub-sections and not many candidates needed to write more than the lines allowed for. Most points for teachers to consider, when preparing candidates for future questions, relate to misunderstanding or ignoring command words. Here plenty of practice using past papers to ensure they read the instructions carefully and complete graphs and other practical activities within the time allowed would improve performance. Particular questions where candidates do not score well often relate to them not taking time to thoroughly read and understand the resources referred to. Such failings mean that some candidates do not obtain a mark in line with their geographical ability.

Apart from the ongoing issue of some candidates not attempting straightforward completion tasks on graphs, this session was notable for the lack of knowledge displayed of basic and common fieldwork techniques i.e. using a max-min thermometer, using a rain gauge fixed on a post, choosing sites for weather instruments, devising a good questionnaire and carrying out a land use survey. All these have appeared regularly in previous papers. Centres need to realise that, although this is an *Alternative to Coursework* examination, candidates will still be expected to show that they know how fieldwork equipment can be used and how fieldwork methodology, demonstrated in the *Route to Geographical Enquiry* in the syllabus, is implemented even if they have only limited opportunities to carry it out in and around the centre.

Question 1

This question was based on fieldwork carried out at a school in Seattle, USA where candidates measured atmospheric pressure, temperature and rainfall during November. It involved explaining how to use a max-min thermometer to measure temperature, how to measure rainfall using a rain gauge that was fixed off the ground and suggesting site factors for this instrument. They also needed to show that they knew how wind speed and duration were measured. Graph work included completing a line graph of temperature, a bar graph for rainfall and a wind rose for wind direction and speed. Candidates needed to make their own judgement about Hypothesis 1 in **Question 1(b)(iii)** and needed to support a *True* decision related to Hypothesis 2 in **Question 1(c)(iv)** The main areas of concern were **Question 1(b)(iii)** and **Question 1(d)(iii)** – both being the least well-answered questions on the whole paper apart from **Question 2(f)**. **Questions 1(a)(ii)**, **1(b)(i)**, **1(c)(iii)** were the best answered. **Question 1(d)(ii)** – completing the wind rose diagram – was, by far, the sub-section with the highest *No Response* on **Question 1**.

Question 2

This question was about fieldwork carried out by a group of candidates studying settlement and service provision in a rural area of Wales in the UK. It required knowledge and understanding of settlement hierarchies especially with regard to high and low order services and how population numbers could influence the service provision. They needed to identify high and low order services and complete tasks and graphs that related the size of settlements to the number of services including work on data from 1990 to compare with data from 2018. Their knowledge of the meaning of secondary data and what makes a good questionnaire was tested and they were asked to suggest how they might carry out fieldwork to investigate

how land use had changed between 1990 and 2018 in Settlement H. Several different graph completions and other tasks were also required. Candidates had to make judgements about two Hypotheses; one on whether there was a positive correlation between population size and the number of services found in a settlement and a second Hypothesis on whether people travelled further to use high or low order services – in both cases the Hypotheses were correct. There was just one major area of concern with answers – **Question 2(f)** where few candidates gained more than 2/4 marks on how they would carry out a land use survey. **Questions 2(a)(i)**, **2(b)(i)**, **2(b)(ii)**, **2(b)(iii)** were all well-answered. It should be noted that **Question 2(e)(ii)** had, by far, the highest *No Response* data on the exam paper closely followed by **Question 2(f)**.

Candidates found **Question 1** slightly less accessible than **Question 2** and there was a slight rise in the mean from 28.8 in 2019 to 29.6.

Section 4

Comments on specific questions

Question 1

(a) (i) While there were some very good explanations of how to use the max-min thermometer, this starter question did not prove to be accessible for many candidates. The syllabus expects candidates to, not only understand how the traditional weather instruments work, but also to know how they would be used to measure the various elements involved in weather and climate. Too many candidates described how the max-minimum thermometer worked with detailed references to the roles of mercury and alcohol in influencing where the temperatures were read however this does not explain how the candidates should use the thermometer to measure these temperatures. The better candidates suggested using a Stevenson Screen or putting the thermometer outside then once a day, or every 24 hours, checking where the bottom (not under or below each index) of the metal indices was to read the max-min temperatures before resetting the indices with a magnet. Many incorrectly suggested using the meniscus to read the max-min temperatures. What was seen too often was a description of how the max-min thermometer worked. A few candidates seemed to think the temperature should be checked every hour and an average calculated – some described a hygrometer rather than a max-min thermometer despite the photograph being provided in the Insert.

(ii) This was a straightforward plot at 8°C above the 13th November date which most did well. It was, though, surprising to note that a few candidates did not attempt it or just drew in the plot but did not complete the line graph. A few misread the vertical scale and plotted the 8°C too high at 9°C. Some completed the plot without completing the line; others drew a line without adding the plot for which there was no credit.

(iii) This was a good test of whether candidates understood the expression '*temperature range*'. The majority knew what this meant and correctly stated that the 21st November showed the largest gap between max and min temperatures. Quite a few however incorrectly chose the 9/10/11/12th or 19th which were all quite wide apart but not the most wide apart; some other dates had no logic behind them

(b) (i) By far the vast majority knew that a barometer was used to measure atmospheric pressure although, as candidates should all at least know the names of weather instruments and what they do, it was disappointing that the figure getting this correct was not closer to 100 per cent. A small number chose anemometer or hygrometer and a significant minority did not attempt the question even though there was a 3:1 chance of guessing a correct choice!

(ii) Most candidates realised that taking readings at the same time would remove time as a variable and therefore allow for more consistent, reliable or fair results by comparing the readings of the atmospheric pressure at the same time. Quite a few, however, just gave the standard vague answer that *'it would make results more accurate'* which gained no credit. A few recognised that the time interval between readings would be the same but could not suggest why this was important.

(iii) There was clearly no positive relationship between atmospheric pressure and temperature so most candidates gained credit for recognising that the hypothesis was false or incorrect. Although that

decision was pleasing, there then seemed to be a shared view across candidates that the relationship must be negative and so candidates spent a good deal of time searching for data to prove that was the case. In fact, as several candidates realised, while there was data that could be selected to show a negative relationship, there was also a good deal of data to show that there was no relationship i.e. temperature staying the same as pressure changed and vice versa. Those candidates that spotted this and provided supportive data as well as stating there was no relationship scored well however there were not too many of these which made this question one of the more challenging on the paper,

(c) (i) The instrument referred to in the question is fastened to a post well above ground level and this was clearly shown in the Insert photograph. This however did not deter many candidates suggesting that the gauge should be dug into the ground or listing site factors for locating a traditional rain gauge. The question wanted to know how the instrument would be used to measure rainfall. The better candidates had clearly looked at the photograph and described how the rain would fall into the measuring cylinder through the funnel and how the candidate could read off the amount of rainfall in millimetres from the scale on the transparent cylinder without removing it from the post. They often added that the water would be emptied and suggested the check would be every 24 hours or at a fixed time. Candidates who ignored the photograph wrote about the traditional rain gauge i.e. dig it into the ground, remove the metal collecting can and pour the water into a measuring cylinder. They also assumed the units would be measured in millilitres despite the photograph showing a 1 metre scale. These comments were irrelevant to the question and the resource provided.

(ii) Once again the candidates were referred to the instrument in the photograph in the Insert i.e. the gauge fastened to the wooden post above the ground. This was done reasonably well; most candidates chose open space or away from trees and buildings or away from potential vandalism by animals/people as the main factors influencing the choice of site. They could usually explain their choices e.g. to avoid interception, leaf drop or simply so that all the rain could be collected without interference. A few chose not to site the gauge on concrete surfaces but the gauge was already well above the ground so splashes from the ground into the gauge would not happen – once again this would apply to a traditional rain gauge not the one illustrated here. The photograph shows this transparent gauge is 1 m long so even if it was placed on the ground splashes could not bounce up into it. Flat ground was also an answer that was irrelevant in siting this gauge.

(iii) A high majority of candidates completed the bar chart well drawing the line correctly at 9.5 though a few misread the vertical scale and plotted it either just above or below 9.5. It was disappointing though to see how many candidates did not attempt the relatively easy completion. If a graph is presented on this paper it will usually need completing; it appears that some candidates take a cursory look at the graphs and assume they are completed despite, in this case and others, emboldened instructions to '**Plot the rainfall…'.** Relatively easy marks are not being gained by such omissions.

(iv) There was an odd mixture of answers to this question. The candidates were told the hypothesis was true in the stem of the question yet some decided to prove it was true; some disagreed and tried to prove it was false by looking for increases in pressure and rainfall. Others decided to include reference to relationships with temperature which was not mentioned in the question or the hypothesis. Those who recognised – or possibly knew from their learning – that rainfall rose when pressure falls and vice versa stated this correctly and stated that it was an inverse or negative relationship and then provided paired data to support this – usually 1016 mb and 2.3 mm rainfall compared with 993 mb and 12.8 mm rainfall. Centres need to make candidates aware that if they are referred to a graph and a Table, they should use the correct data from the table rather than undertake the more difficult task of estimating the figures from the graph.

(d) (i) This was well done by most candidates who knew that an anemometer could be used to measure wind speed and a wind vane is used for measuring wind direction. Most could describe various aspects of using the anemometer including reference to it being placed on the top of a building, that the cups (not the anemometer) were spun by the wind and that speed was measured in km/hour or knots. Few however gave a description of how the speed was transferred to be displayed on a screen or meter. The wind direction answers were pleasing in that most candidates knew that the arrow on the wind vane – not the wind vane itself – pointed to the direction in which the wind was coming **from** not **to**. This was a breakthrough in knowledge that has been notably absent in previous exam sessions where candidates often stated that it pointed to where the wind was going or, vaguely, that it pointed at the wind direction which is an unclear answer. A few did

not know the instrument names; a few tried to measure wind speed using a wind vane and others used ingenious methods involving throwing sand or grass in the air or inventing and constructing their own instruments by using bits of wood and metal – creative but not creditable!

(ii) The wind rose should be a fairly common technique used in classrooms to show wind directions over a period of time however this answer had a very high omission rate with candidates not attempting it maybe because it appeared to be completed rather than they could not do it. However, in clear emboldened words, the question asked them to **Complete the wind rose diagram…** There were mixed responses seen. Those that did attempt this – the majority – drew a bar similar to the bars already present down South to the 4 day circular line for credit. A few candidates just wrote the figure 4 or 1 to 4 on the diagram instead of drawing the bar; others wrote down the dates when the wind was blowing from the south i.e. 11, 17, 19, 20 on days 1, 2, 3, 4. While what they did can be described, it defies logic to explain how they thought this would be the correct way to plot the data.

(iii) Quite a few candidates recognised that there was a relationship between the highest wind speeds coming from the SSW and/or the lowest from the SE or East; they also backed this up with comparative data e.g. 21 km/h in SSW compared with 7 km/h in the East. Others were less selective grouping together several high speed directions e.g. SSE/S/SSW and several low speed directions which were too vague for credit. A few spoilt their answer by referring to the highest winds blowing **to** the SSW instead of **from**. A significant minority did not attempt this question which was unusual in that it is the graphs they sometimes miss out, not written answers.

Question 2

(a) (i) Although a large number of candidates did put the three services in the correct boxes it was surprising to see that others thought the airport was a low order service and the bus stop a high order service. Understanding the order of services in settlements and service hierarchies is a fundamental part of this part of the syllabus and these basic errors were likely to indicate how well the candidates would do in the following questions to some degree. A small number of candidates gave their own service examples in the table despite them clearly being asked to use those listed in the question.

(ii) Too many candidates thought a *'low order service'* was one that was rarely used. This was a very basic misunderstanding. Over half did know that a low order service was frequently used thereby gaining what should have been a straightforward mark.

(b) (i) The vast majority of candidates judged correctly that the *General food store* was the service that appeared in the highest number of settlements in Table 2.2. A small number miscounted the ticks and chose the Primary school, others chose and wrote Settlement C presumably because it had the highest number of different services.

(ii) Almost all candidates successfully completed the table by adding the ticks and getting 2 as the answer. Despite the ease of the task a substantial minority did not attempt the question even though the instruction said **Insert into Table 2.2 (on page 11**)….

(iii) The correct order of HDGA was given by almost all candidates for the two marks available. A few put HDG in the incorrect order but did get A correct as the last choice. The error may have been caused by using Table 2.3 from the Insert instead of Table 2.2 which is in the exam paper and which the question referred them to.

(c) (i) Apart from those candidates that decided to describe how and why a census was carried out, this was done quite well as most candidates could state that it was secondary data because it had been carried out by somebody else or by others and not by the candidates. Many also suggested examples of where relevant secondary data from the census could have been found e.g. on the internet, books, records.

(ii) A few candidates did not attempt to plot the point but those that did put an accurate cross at the appropriate place. A few plotted it too far to the left on the correct line while others put it accurately in terms of population but at 4 services instead of 5 services. Other incorrect population line plots were seen at 1250 and 1450 instead of 1312. A few joined all the plots together and others added a best-fit line for reasons only known to them.

(iii) This was well-answered by most candidates which was pleasing for a hypothesis question. Many candidates gained the full three marks. Most stated that they agreed with the hypothesis being true. They then described the relationship between an increasing population and increasing services and supported this with paired data usually comparing Settlement C (12, 226 pop. and 11 services) with Settlement E (262 pop. and 1 service). A few only gave one settlement which is meaningless unless compared. Some mistakenly used Table 2.3 from the Insert so the data was incorrect.

(d) (i) The candidates generally answered this well with the best answers stating the service changes e.g. services decreasing by 2 in Settlement D and increasing by 6 in Settlement H. Others gave examples of a change e.g. the loss of a bank in D or the gain of a supermarket in H. It was important here that candidate made it clear which years they were referring to as it was not always obvious e.g. '*they had no bank'* was an answer that raises the question when – 1990 or 2018? Generic vague answers such as recognising the increase or decrease in services were not credited nor were inappropriate references to population changes which was not part of the question.

(ii) Candidates were less successful at suggesting why the service changes might have occurred although there were some pleasing references to changing threshold populations and rural-urban migration as well as changes in population. Quite a few took a global view and wrote about natural disasters or high/low birth and death rates as well as immigration/emigration when the context of the question following from **(d)(i)** was possible reasons for changes in services in these two relatively small rural settlements.

(e) (i) It was important for candidates to read the question carefully here as it was not asking them to suggest three questions for a questionnaire. It required them to identify three features of a good questionnaire. Consequently those who wrote three questions that could be asked gained no credit. The better candidates understood what was required and gave answers that covered, for example, making sure that it was short, in simple language and easy to understand; making the questions relevant to the hypothesis and not asking personal questions. A few suggested *'introducing yourself'* but that is not part of the questionnaire – that is how you might politely approach people**.** Some described how they would sample people**.** Vague references to the questionnaire being polite or that the questions should be easy to answer were not credited.

(ii) This question had the highest omission rate on the paper and there were not many candidates who completed the graph correctly. By observing the three completed graphs it should have been clear that 0 was not plotted with a cross on any of the services and that if, for example, three people travelled 23 km to a clothes shop, then there should be three crosses plotted on the 23 km line – not just the 3rd cross. Far too many did the latter which is hard to understand as it should have been obvious that all the crosses were needed as they were illustrated by the other three completed graphs and the one they had to complete. Those that realised what they had to do did this well although a few plotted the 25 km cross at 24.5 km which was hard to understand.

(iii) The candidates that knew that the clothes shop was a high order service and that the hairdresser's was a low order service – as indicated by the arrow on Fig 2.2., did well on this question. They agreed with the hypothesis and recognised that people travelled the furthest to the clothes shop and the least to the hairdresser's. They then gave supportive data by comparing the average distances of 16 km and 3.9 km or comparing the maximum distance travelled to each i.e. 25 km with 8 km. Other candidates either judged the hypothesis as false or partially true which was wrong or decided that the clothes shop was a low order service and the hairdresser's was high order despite the arrow indicating the reverse on the resource**.** A few candidates compared the number of people travelling to the services instead of the distance involved.

(f) While it is a fact that candidates attempting *The Alternative to Coursework* paper (0460/42, 0976/42 or 2217/32) have not carried out formal coursework or fieldwork, it is still important that they have a good grounding in fieldwork techniques such as carrying out a land use survey which is one of the more common fieldwork exercises and one that can be carried out in any settlement of any size. The better candidates did suggest visiting the settlement and drawing their own map for the 2018/current land use to compare with the 1990 map. They would identify the land use and classify it using the 1990 key. They could take photographs of the current land use for comparison and ask questions of the older residents about changes since 1990. Quite a few candidates however did not attempt this question and, of those that did, it was apparent very few had carried out a land use survey or discussed in class how they could do this. Too many described how the village's services had changed from previous information with no reference to fieldwork and a great deal of emphasis on using secondary information. Some described how they would carry out a

traffic or pedestrian survey including sampling techniques – others suggested using quadrats and ranging poles to identify small areas of land use. Most of these answers were irrelevant. With a high omission rate and a low success rating, this proved to be the least successful question on the paper.