GEOGRAPHY

| Paper 0460/03 |
| Coursework |

Key Messages

Once again the entry for this session was relatively small, and consisted mainly, but not entirely, of Southern Hemisphere centres. Therefore, although this report includes points arising from the moderation of this series, they are equally applicable for centres that make their entries in the June series, or in the March one which will occur for the first time in 2017.

General Comments

Most of the candidate's work was fully in line with the Syllabus and followed the route to geographical enquiry as outlined on page 28 of the syllabus document. Since almost all centres have submitted proposals in advance of candidates undertaking the work, and the markers applied the generic mark scheme found on page 35 of the syllabus document, the Moderation process was relatively easy to undertake. For any centres that have not already submitted proposals, then they are urged to do so. Providing the proposal falls within the scope of the Syllabus at an appropriate level for the age of the candidates undertaking IGCSE Geography, and then approval is always given. Advice is also offered which is based on good practice and can lead to candidates accessing the higher grades. Similarly, suggested approaches that may hinder a candidate can be commented upon at the proposal stage.

Comments overall

Only in some cases did the Moderators have to adjust the marks awarded by a centre, but this task was made easier by the fact that in almost every case, the rank order of the candidates was absolutely correct. This made any scaling ease to achieve. Such adjustment is made in order to ensure that the quality of work across all centres is comparable. Where there are more than one teaching set and/or marker, it is important that an internal moderation by the centre is carried out. Again this ensures comparability and is fairer for all the candidates. The result of such an internal moderation should be indicated on the Coursework Assessment Summary Form.

In most cases the correct documentation was sent, but occasionally the MS1 mark sheet was missing. There were some instances of errors in the paperwork. For instance, the total mark on the Coursework Assessment Summary form for a candidate not matching the marks entered on other documents. There was also the occasional mathematical error in adding the five assessment criteria marks on the Coursework Assessment Summary form. Moderators will correct these when found.

It is always appreciated by Moderators if the marker could make comments within the scripts. These comments will justify the marks awarded and phrases found in the generic mark scheme should be used. Some centres were very conscientious in this respect and helped the Moderators judge the scripts more accurately.

The level of work undertaken was in almost all cases, appropriate to the age group. The best responses tended to have a very good balance between the five assessment criteria in the generic mark scheme. This balance was not always achieved, with some using far more wordage on their introduction (*knowledge with understanding*) and/or on the *observation and collection of data*. This was at the expense of the *analysis* and *conclusion and evaluation.* It is however, gratifying to report, that virtually no candidates exceeded the word limit. The Moderators would like to thank staff for making sure that this was the case.

The variety of topics studied was impressive. Human Geography dominated over physical Geography on this occasion, with patterns of migration and the impacts of tourism popular. The study of river characteristics and coasts continue to yield a range of appropriate data.

Both strengths and weaknesses were reported back to centres, but some of the points made were common to several centres, and these will be the ones reported on here based on each of the assessment criteria in turn.

Knowledge and understanding tended to be a little overmarked by some centres. While most knowledge is demonstrated in the introduction, the level of understanding can be judged throughout the whole study and in particular, how this knowledge is applied in response to the trends in the data collected and discussed in the analysis and conclusion and evaluation. High level responses clearly linked stated geographical theory to the aims of their study and these links form a clear focus throughout. On the other hand, urban models, for instance can be described in detail in the introduction, but after this are not mentioned again. Some candidates list multiple hypotheses but often without any justification for each one. Meanwhile higher level responses accompanied their hypotheses with detail of the expected outcomes. It is unwise to encourage candidates to take on more than three hypotheses since this tends to lead to a lack of depth in the analysis section and/or exceeding the word limit. Some candidates should also be more selective with the provision of back ground knowledge regarding the survey area, since this is likely to lead to them infringing the word limit.

Candidates tended to score well in the *Observation and collection of data* section. Markers also marked this accurately The data collection is usually well planned and executed with care, especially if this is a collaborative effort collated by the teaching staff. Nevertheless, some candidates seem to take the methods of sampling for granted and thus these were seldom justified. Furthermore, criteria for the selection of sites were rarely mentioned e.g. in river studies. Some candidates commented on undertaking a pilot survey, especially when using a questionnaire. This is a good way of refining the questions to make them more relevant. A pilot study, is of course, not always possible if the centre has to travel a considerable distance in order to carry out the fieldwork. Some centres encourage their candidates to write the detail of their methods of data collection in the form of a table. These contained some evaluation of these methods and this is to be encouraged. However, it is important that candidates realise that extensive text in tabular form still counts towards the word limit.

Organisation and presentation was sometimes overmarked, especially when level three was awarded. Some centres were over reliant on a variation in bar or pie charts which are basically simple techniques. "A range of appropriate techniques' is required for the highest level, and as a marker, one would definitely be looking for a degree of complexity. Some used radar graphs and chloropleth maps, while others located bars or pies at named places on a map. Some computer generated graphs did not have the axes labeled. Maps too often lacked a scale, particularly those 'lifted' from the internet without embellishment. In addition, there were occasions that these maps were too small to read the key or make use of. High scoring centres integrated their graphs with the text, whilst photographs were well annotated to demonstrate a point made in the text. The Moderators noticed an increase in pre-drawn graphs and diagrams being scanned to fit in with the text. These were often lacking clarity and therefore, were difficult to read. This practice should be discouraged and the original provided. Most candidates provided an index of contents which was useful. Despite the above many candidates scored well in this part of the assessment.

The *analysis* was for many of the candidates, the weakest area of their study. In some cases rather high marks were awarded for purely descriptive accounts of the data. The better responses not only described trends and anomalies, but also gave reasons for them and discussed them in light of geographical theory introduced at the beginning of the study. Examples were taken from the data to illustrate the points under discussion. In addition, if they utilized statistical techniques, it was to further qualify evidence which had already been presented, as well as to support the candidate's explanations. In other words, it was clear they understood the context for the use of Spearman, for instance, rather than just state its value and say if the value was significant or not. This all leads up to the candidate assessing the extent to which the hypotheses stated in the introduction could be confirmed or rejected.

The *conclusion and evaluation* section was generally assessed accurately. There was a wide variation in the length of this section.. The better studies summarized their findings well, identifying the key pieces of data that demonstrated why their hypotheses had been confirmed or rejected, and how this fitted in with geographical theory or concepts introduced at the beginning. The points made were clearly related to the aims of the study. The evaluation was generally done well with many candidates, showing an ability to reflect on their study, by making positive attempts to identify issues and suggesting possible remedies if the study was repeated.

GEOGRAPHY

Paper 0460/11
Paper 11

Key messages:

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

- ensure that the examination rubric is followed correctly, answering 3 questions, one from each section.
- select the three questions with care. Read them all through and study the resources provided with them before making a choice.
- answer all parts of the three chosen questions.
- read the questions carefully. If it helps to do so, underline command words and words which indicate the context of the question.
- respond in the correct way to command words used in questions, in particular 'describe', 'explain' and 'compare'.
- identify the correct focus specified in the question stem – e.g. causes or effects/impacts, problems or opportunities.
- ensure that they respond correctly to key words and learn the meanings of geographical words and phrases in order to be able to define and accurately use geographical terminology. When defining words or phrases candidates should not simply repeat a word or words as part of their definition.
- understand the difference between describing a distribution from a map by referring to general patterns and describing the location of a feature or place by giving distances and directions from named places.
- use the mark allocations and answer space provided in the question and answer booklet as a guide to the length of answer required.
- write as clearly and precisely as possible avoiding vague, general statements.
- write in full wherever possible, especially in the final two parts of each question, ensuring that ideas are developed with the correct focus.
- perform basic skills using graphs, photographs and maps of various types, referring to them in an appropriate way to support ideas rather than directly lifting material from them without any interpretation.
- express themselves as clearly as possible avoiding vague, general statements.
- have a range of case studies so that appropriate ones can be chosen for the topics tested.
- ensure that each case study used is at the correct scale e.g. urban area or country. The syllabus identifies the scale required for each case study.
- avoid writing a long introduction to any question at the expense of answering it in detail.
- develop points and link ideas wherever possible in case studies and include place detail.
- when using the extra pages at the back of the question and answer booklet indicate that the answer is continued and clearly show the number of the question on the extra page.
- do not use extra sheets of paper until the additional lined pages are full.

General comments:

This was the first November examination testing the revised syllabus. The examination was considered appropriate for the age and ability range of candidates and it differentiated effectively between candidates of all ability levels. As always some candidates performed very well across the paper and some excellent answers were seen. Most candidates were able to make a genuine attempt at their chosen questions, however weaker candidates found it difficult to interpret tasks and write effective responses to some or all questions.

The change in the rubric caused relatively few problems and most candidates selected a question from each section as required. There were a few who penalised themselves by answering both questions from within a

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section, in which case they were awarded the mark for the higher scoring question. As in previous years there were some candidates who ignored the rubric altogether by answering four or more questions, however it was rare to encounter papers where all questions had been attempted. Typically if all questions had been answered they were all weak responses and/or parts had been omitted from each, however some stronger candidates crossed out several lengthy answers, thereby wasting time which could have been spent working on their chosen answers.

It is vitally important that all answers are legible and written carefully in the spaces provided, as answers which cannot be read cannot gain credit.

Questions 1, 3 and **5** were the most popular questions within each section. There were good answers seen to all questions, including those requiring extended writing, particularly the case studies on a population policy, an earthquake and a river. High quality answers in these case studies were characterized by a range of developed ideas and some place detail. Some weaker responses tended to be generic developments of ideas with little place detail to support them whilst others were characterized by the use of simple statements. In some cases the detail provided was largely irrelevant to the question being asked, including long and unnecessary introductions, some of which occupied almost all the answer space.

Case studies require place specific information to allow access to the highest level. This requirement can vary between questions – an urban area (**Question 2**) or a country (**Question 1**) or a named feature such as a river (**Question 4**). Some candidates do not carefully consider their choice, limiting their mark by inappropriate choices, for example choosing a country rather than an urban area or vice versa. Where an 'area' is required (as in **Question 3**) choosing a country usually tends to be unacceptable as this is likely to be too large a scale.

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

Comments on specific questions

Question 1

(a) (i) and (ii) Most answers were correct although in **(i)** a few responses included countries that were not in the list.

(iii) Generally this was well answered, with most candidates being able to provide one or more valid ideas. Some candidates lost credit by not elaborating on simple ideas such as 'education', 'poor medical facilities' or 'more money' for families.

(iv) Some excellent, detailed answers were seen here, about the reasons for reducing population growth rates. In contrast weaker responses used terms that were too vague to gain credit such as 'services', 'facilities, 'amenities' and 'pollution'. The command word 'explain' implies that answers need to be elaborated to the extent that they 'explain' the importance of reducing population growth, rather than making a list of simple ideas. For example many candidates referred to 'overpopulation', an idea which needed elaboration for credit to be awarded.

(b) (i) Most candidates were able to identify simple patterns in the data (increase/decrease) but in some cases did not use statistics with sufficient accuracy. For example vague phrases such as 'about 10 per cent' and 'more than 50 per cent' gained no credit. Candidates could use a variety of terms to refer to the age groups plotted on the graphs, however some responses showed a misunderstanding of the term 'ageing population' by using this to refer to the section of the population aged 65 or over.

(ii) This question differentiated well with those candidates who scored the highest marks focussing on the reasons why people live longer into old age, typically by reference to improved health care and care for the elderly. A small minority of weaker candidates could not respond appropriately as they clearly did not understand the concept of an ageing population whilst others simply referred to decreasing birth rates which is just one reason for an ageing population. Vague references to 'education', 'technology', 'quality of life' and 'standard of living' gained no credit without appropriate elaboration.

(c)   The syllabus clearly states that candidates need to be able to evaluate a population policy which is what this case study required. Most chose the Chinese one child policy, an excellent choice, but far too many candidates simply stated all of the facts they knew about the policy without making any reference to how successful or unsuccessful it was, Some did make brief references to birth rates being reduced, having spent most of their time describing the policy in detail. There were a small number of excellent answers which not only developed ideas about how birth rates had been reduced but also looked at various problems caused by the policy (e.g. Little Emperor syndrome, female infanticide, increasing pressure on individuals to support the aged etc.).

Question 2

Very few candidates answered this question, the majority being relatively weak.

(a) (i)   Whilst some answers correctly referred to the area close to the city centre/CBD others just referred to the 'centre' or 'the city' in general terms.

    (ii)   Many answers overlooked the idea of 'street pattern', referring to often irrelevant features shown on the map. A small number of candidates could describe the pattern, doing so by reference to the grid pattern, with straight streets, many at right angles to each other as can clearly be seen on Fig. 3.

    (iii)   A few perceptive answers were seen which referred to general issues such as dereliction and/or the need to improve housing, the transport network or the industrial base, many of which are flagged up in the map and key. Weaker answers however predominated, with vague references to 'amenities' or 'services'.

(b) (i) and (ii) Most candidates correctly identified B in **(i)** and chose this area to describe in **(ii)**, the latter discriminating well as candidates who observed the photograph carefully were able to describe a number of general characteristics (e.g. high rise, retail function), in some cases developing their ideas. Weak candidates imply identified specific buildings for which a limited number of marks were available.

    (iii)   Few good answers to this question were seen, as those candidates who answered it tended not to describe variations rather than focussing on the 'reasons' for land use variation in urban areas. Some referred to variation in rural land use.

(c)   A small number of high quality responses were seen which developed ideas relating specifically to urban sprawl and included some place detail. The majority of credit worthy responses referred to ideas such as traffic issues, squatter settlements on urban fringes and deforestation. However many weak answers tended to ignore the requirement to describe the effects of 'urban sprawl', writing generally, and usually with limited development, about urban problems of various types (e.g. crime, housing, unemployment).

Question 3

(a) (i)   Many candidates identified the correct types of volcanoes shown in Fig. 5, though there were some irrelevant responses seen.

    (ii)   This key to this question was to carefully read the question and look at the diagrams. Many candidates did not notice the difference in scale used on the diagrams of the two volcanoes. Some also attempted to explain differences, by reference to lava type, rather than simply 'describe differences' as required.

    (iii)   All these features are listed in the syllabus, however generally they were not well known and relatively few candidates scored the full credit.

    (iv)   This differentiated well with many sound answers being seen, with references to tourism, agriculture and geothermal power being the most common correct ideas. In contrast ideas about cheap land, the volcano sheltering people from the weather or keeping people warm were common in weaker responses.

(b) (i)   This test of map skills differentiated well as it required a precise description of the distribution of the volcanoes shown on Fig. 6. Weaker responses tended to feature vague references to the

continents and oceans (or even plate boundaries despite the fact that they were not shown on the map), however those who had clearly practised this skill were able to effectively refer to the circular and linear pattern, along with appropriate precisely named and located areas (e.g. Western Americas, eastern Asia).

(ii) There were some very good accounts of volcano formation on destructive margins with a clear and accurate sequence of ideas, many of which were well developed and linked together. A small number of candidates also explained the formation of volcanoes at hot spots. Weaker responses showed confusion between collision and convergence, whilst others wrote about volcano formation at constructive margins, which was not a valid explanation for the volcanoes shown in Fig. 6.

(c) Some excellent responses were seen with the Haiti earthquake being the most popular choice of case study. Those candidates who were able to give accurate statistics (e.g. number of people killed, magnitude of the earthquake) and develop their ideas accessed the highest marks. Some candidates lost credit as they did not read the question carefully enough. Some wrote about the causes of an earthquake whilst others referred to a volcanic eruption. Some were not sufficiently precise in naming the area. A country is not acceptable (e.g. Japan, New Zealand, China). If it is a small country (e.g. Haiti) it is acceptable, however candidates should ensure as much precision as possible in their choice (e.g. Kobe rather than Japan).

Question 4

(a) (i) Most candidates identified the correct river feature.

(ii) Generally this was well answered with most candidates making at least one valid observation from the photograph.

(iii) Many candidates could explain the process of deposition occurring at a meander though some confused this with ideas which would be more appropriate to flood plain formation.

(iv) This question differentiated well, with some excellent, clearly expressed ideas seen in each section. The management of the flood hazard tended to be more well-known than the management of erosion, though most candidates were able to refer to a method of bank strengthening for the latter, if only in simple terms.

(b) (i) Whilst there were a number of high scoring answers, many candidates did not read the question carefully enough and either wrote about the differences between the river itself rather than the cross sections, or wrote about differences that were not shown in Fig. 7.

(ii) Predictably there was a wide range of responses from weaker answers about 'water flowing down mountains' to detailed explanations of all of the stages of a waterfall formation with accurately labelled diagrams and appropriate references to processes. In this case candidates had the option of using a labelled diagram and many included one. It should be noted that labelled diagrams will only gain extra credit if they include information which is not referred to in written text (e.g. a layer of hard rock overlying soft rock) as double credit is not awarded for repetition of the same information in the text and on the diagram.

(c) Most candidates chose an appropriate river, some well-known ones such as the Amazon, Nile and Ganges and some smaller ones which were obviously local to candidates. It is a commendable strategy for teachers to use local examples, when appropriate, rather than always depending on textbook examples. The opportunities for agriculture, tourism and power generation were the most common ideas. The full mark range was seen, with some excellent development of ideas, including place specific exemplification, earning full credit compared with simple lists of opportunities from weaker responses.

Question 5

(a) (i) Whilst many candidates gained the mark here there were many other who simply guessed. The Human Development Index is a measure of development which is specified in the syllabus.

(ii) This question differentiated well with most candidates able to identify generally higher HDI scores in Africa but relatively few candidates were able to identify that there is also more variation in Africa.

(iii) Some excellent responses were seen with candidates referring to the variety of factors taken into account to derive the HDI figure rather than using just one indicator which measures income alone. Such candidates also referred to the index produced being usually to compare countries, though it was rarely mentioned that change over time can also be observed by it. Weaker candidates showed little understanding of the requirements of the question and many wrongly focused on how developed some countries were compared to others.

(iv) A good knowledge was shown here by some candidates, with reference particularly to raw materials, soil fertility, government corruption, education level and war.

Weaker responses tended to be vague with unspecified responses to 'poverty', 'natural disasters' and 'disease' and a focus on how the differences in levels of development manifest themselves rather than an explanation of them.

(b)(i) Most candidates were able to identify the positive relationship, and some were able to select appropriate statistics to illustrate this. Relatively few were identified anomalies for the final mark.

(ii) This differentiated well, with some excellent responses typically relating to the ability of countries with a high GNP being able to invest in health care, care for the elderly and sanitation, including appropriate development. Most weaker responses tended to gain credit with a simple reference to health care, however vague comments such as 'education', 'quality of life' and 'standard of living' did not gain credit.

(c) Most candidates were able to select an appropriate TNC, popular ones being Coca Cola, Nike, Toyota, Apple and Honda. The task set was to describe the 'organisation and global links' and the high quality answers referred to the location of headquarters and manufacturing/assembly/outlet locations along with ideas relating to workforce, inputs/outputs and the transport network used. Many candidates did not read the question carefully and wrote about the benefits and disadvantages of TNCs to an LEDC, which was not relevant and did not gain credit.

Question 6

(a)(i) Many candidates gave an accurate definition of malnutrition though a few responses defined starvation instead.

(ii) Most candidates were able to identify the pattern and effectively compare Niger and Burkina Faso, many commenting on the larger number of cases in Niger and/or the more even spread in Burkina Faso. Not all candidates were able to use the map key correctly and interpret the proportionate symbols so their use of statistics was not always correct.

(iii) Generally this was well answered with drought, population pressure and war being the most common ideas. Unspecified references to 'natural disasters', 'weather' and 'climate' were common from weaker candidates.

(iv) Most candidates scored something by referring to simple ideas such as famine, starvation and death whilst others showed more knowledge, for example giving examples of deficiency diseases or elaborating by reference to people being too weak to work, therefore remaining in the poverty trap.

(b)(i) Weaker responses simply copied random sections of the resource and some thought this was an actual cow. However most candidates seemed to understand the extract and were able to make pertinent points, typically referring with precision to the products produced by the Mechanical Cow, and/or specific benefits to the children.

(ii) This was another good discriminator. Most candidates understood what was required and gain credit, typically for reference to improved food distribution or international aid. Higher scoring answers referred to a range of ideas, including specific methods which farmers could use to increase output, such as using irrigation, fertilizers or high yielding seeds.

(c)   This case study offered candidates scope to use any example of a farm or agricultural system, however in most cases the outcome was disappointing. All candidates should have studied a farm as a system and will have used a systems diagram to show inputs, processes and outputs. An ideal answer to this question would have been to use the information from such a diagram, but to develop ideas about particular inputs, processes and outputs. Whilst a small proportion of candidates produced such answers and gain credit many did not, instead they either made simple lists or wrote about another aspect of the farm they had studied.

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- read the questions carefully. If it helps to do so, underline command words and words which indicate the context of the question.
- respond in the correct way to command words used in questions, in particular 'describe', 'explain' and 'compare'.
- identify the correct focus specified in the question stem – e.g. causes or effects/impacts, problems or opportunities, local or global, people or natural environment.
- ensure that they respond correctly to key words and learn the meanings of geographical words and phrases in order to be able to define and accurately use geographical terminology. When defining words or phrases candidates should not simply repeat a word or words as part of their definition.
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- perform basic skills using graphs, photographs and maps of various types, referring to them in an appropriate way to support ideas rather than directly lifting material from them without any interpretation.
- express themselves as clearly as possible avoiding vague, general statements.
- have a range of case studies so that appropriate ones can be chosen for the topics tested.
- ensure that each case study used is at the correct scale e.g. town/city or country. The syllabus identifies the scale required for each case study.
- avoid writing a long introduction to any question at the expense of answering it in detail.
- develop points and link ideas wherever possible in case studies and include place detail.
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General comments:

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The change in the rubric caused relatively few problems and most candidates selected a question from each section as required. There were a few who penalised themselves by answering both questions from within a section, in which case they were awarded the mark for the higher scoring question. As in previous years there were some candidates who ignored the rubric altogether by answering four or more questions, however it was rare to encounter papers where all questions had been attempted. Typically if all questions

had been answered they were all weak and/or parts had been omitted from each, however some stronger candidates crossed out several lengthy answers, thereby wasting time which could have been spent working on their chosen answers.

Reponses from candidates should be legible to help examiners to read and properly credit their content.

Questions 1, 3 and **5** were the most popular questions within each section. There were good answers seen to all questions, including those requiring extended writing, particularly the case studies on migration, river flooding and location of industry. High quality answers in these case studies were characterized by a range of developed ideas and some place detail. Some weaker responses tended to be generic developments of ideas with little place detail to support them, whilst others were characterized by the use of simple statements. In some cases the detail provided was largely irrelevant to the question being asked, including long and unnecessary introductions, some of which occupied almost all the answer space.
Case studies require place specific information to allow access to the highest level. This requirement can vary between questions – a town or city (**Question 2**) or a country (**Question 1**) or a named feature such as a river (**Question 3**). Some candidates do not carefully consider their choice, limiting their mark by inappropriate choices, for example choosing a country rather than a town or city or vice versa. Where an 'area' is required (as in **Question 5**) choosing a country usually tends to be unacceptable as this is likely to be too large a scale.

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

Comments on specific questions:

Question 1

(a) (i) and **(ii)** Most answers were correct, however in **(ii)** some candidates were not able to correctly identify the country where population decreased.

(iii) A high rate of natural population growth will only occur when birth rates are significantly higher than death rates. This was recognised by a minority of candidates who referred to both birth and death rates in their answers. However, most candidates only referred to the reasons for high birth rates, limiting the credit that could be gained.

(iv) This was a good discriminator between candidates. Many were able to gain credit for expressing simple ideas, however there were many other candidates who were able to write more sophisticated and detailed definitions, gaining full credit.

(b) (i) Most candidates recognised three valid physical factors shown in the photographs, photograph C proving to be the most challenging to interpret.

(ii) There were few good answers. Some candidates ignored the instruction not to refer to physical factors, whilst others wrote generally about political, social and economic factors with no real clarity or precision. Some candidates placed too much emphasis on migration. The best answers referred to lack of jobs, transport difficulties, conflict and isolation.

(c) There was a variety of case studies, the most common ones being Mexico, Poland and Zimbabwe. High quality answers developed several ideas, typically referring to remittances sent back, skills gained and used on the migrants' return, and loss of skilled workforce. Some candidates incorrectly focused on impacts on the destination country or reasons for migration or included lengthy and unnecessary introductions at the expense of the required focus.

Question 2

(a) (i) Most answers were credited as being within the mark scheme tolerance.

(ii) Most candidates correctly selected 'west' however there was some confusion between north-north west and south-south east. North east was another commonly selected wrong answer.

(iii)   Most candidates correctly chose Ikoyi and Ikeja and many used statistics well to justify their choice. Some did not use evidence from Fig. 3 as required to justify their choice or they simply made general comments or expressed value judgements.

(iv)   This question was looking for specific methods which are used to manage traffic congestion. Most candidates described at least one method and there were some excellent answers from well informed candidates who were able to describe more, typically traffic signals or police, building more roads, creating cycle lanes or specific improvements to bus networks and other methods of public transport. Weak responses suggested that 'people should walk/use bikes' or that authorities should 'encourage people to use public transport' rather than referring to specific methods or ways in which this could be achieved.

(b) (i)   Where candidates focused on the increase in percentage they usually gained credit, including accurate statistics. A common error was to compare percentages in Africa and Europe in the three years, rather than focus on comparing the growth as required.

(ii)   Most candidates focused their answers on the attractions of urban areas (though it was also acceptable to refer to the problems of rural life) and generally marks were high on this question. Valid reasons which were frequently suggested included education, healthcare, water, sanitation and food supply, some candidates developing their ideas for further credit. Vague references to 'services/facilities', 'quality of life' and 'standard of living' gained no credit without appropriate elaboration.

(c)   A number of high quality responses were seen which developed ideas relating specifically to urbanisation, positive impacts as well as negative ones, and included some place detail. However many weak answers tended to ignore the requirement to describe the impacts of 'urbanisation', writing generally, and usually with limited development, about urban problems of various types (e.g. crime, housing, unemployment, service provision), for which most achieved Level 1. Some candidates referred to the positive impacts of urbanisation, which were acceptable, however most focused on negative ones.

Question 3

(a) (i)   Most candidates correctly named wind speed or velocity. Common errors included 'wind' and 'anemometer'.

(ii)   Many candidates scored at least half the available credit on this question. Most correctly explained why there is a fence and many also wrote good explanations about splashback and the heat coming from concrete.

(iii)   Whilst many candidates could name a correct type of cloud seen in Photograph D and gave an acceptable description of it, they were less successful in describing the amount of cloud cover. Few referred to oktas in their description.

(iv)   Many candidates recognised that in general the weather station shown in the photograph is located in a good position, many gaining credit for referring to ideas such as open space, lack of buildings and the position of the weather station on grass rather than concrete. Some candidates referred to the weather station being 'away from trees', however the trees seen in the photograph in close proximity to the weather station could affect the accuracy of results when winds are blowing from that direction.

(b) (i)   The best answers used comparative terms which showed good skills of interpretation of the graph (e.g. more precipitation on 30th December). Other candidates scored high marks for using statistics based on accurate reading of the graph. Some candidates lost marks by referring simply to 'temperature' whilst others described the changes in weather on all the dates between 14th and 30th December rather than comparing those two dates.

(ii)   Most candidates correctly identified the two weather instruments. Many included some detail on how the rain gauge would be used to measure the amount of rainfall, but relatively few described how readings would be obtained from the maximum and minimum thermometer. There was little reference to daily measurements. Common mistakes were to describe the location of the instruments and explain how they worked.

(c)   There were many good answers, popular case studies being the Mississippi, Ganges and the Zambezi and some smaller ones which were obviously local to candidates. It is a commendable strategy for teachers to use local examples, when appropriate, rather than always depending on textbook examples. The higher scoring answers referred to factors such as the amount of rainfall, the impacts of temperature increases on snow and ice, deforestation and urbanisation, with developed (or linked) ideas and place detail. A common error was to describe the impacts of flooding, or how it can be managed, rather than its causes.

Question 4

(a) (i)   Many answers were correct, although some candidates ticked more than one statement. The most common wrong answers were 'temperatures above 30°C' and 'it never rains'.

(ii)   Most candidates correctly identified both deserts.

(iii)   Generally this question was poorly answered. Most candidates did not focus on diurnal range and tried to explain high temperatures. Many who understood that the question was about the difference between temperatures during the day and at night referred to wind, vegetation or sand rather than cloud cover when attempting to explain these differences.

(iv)   There were many good answers which showed a sound understanding of vegetation adaptations. Many candidates scored full marks.

(b) (i)   Many candidates used inappropriate information from Fig. 7, focussing on the winds from the south east and the mountains. Consequently their answers overlapped their explanations for low rainfall in **(ii)** rather than explaining high temperatures as required. A minority of candidates did correctly refer to the significance of the location on the Tropic of Capricorn and realised that it would be the summer season with the sun being more directly overhead than at other times of the year.

(ii)   Many candidates made reference to the rain shadow effect of the Great Dividing Range, with some scoring marks for development of this idea. Few candidates referred to high pressure or descending air, however some understood why there would be little evaporation, usually by reference to there being few water sources as the areas are distant from the sea.

(c)   This question asked about the impacts of deforestation on the global natural environment, however many candidates wrote about local impacts (e.g. on the Amazon rainforest) and/or impacts on people. Although these answers showed detailed knowledge they were largely irrelevant. Where candidates did relate deforestation to global impacts they gained credit for referring to changing carbon dioxide and oxygen levels in the atmosphere. The more perceptive candidates linked this with climatic change and successfully described the impacts of enhanced global warming on ice caps and sea levels. Whilst many referred to habitat loss and wildlife loss, a significant proportion did so within the local context, with few valid references to losses which results from global impacts (e.g. in polar regions).

Question 5

(a) (i)   Many candidates incorrectly wrote about the average use of water 'in a country' rather than 'per person'. Others did not gain credit for including 'daily' in their answer rather than defining it (e.g. per day).

(ii)   Most candidates scored marks here and there was a wide variety of ideas which recognised that, without water, the body will not function. The use of water for drinking, cooking and washing were common correct responses.

(iii)   This differentiated well with most candidates being able to comment on the lack of water in the home and/or the long distance travelled to access water supplies. Others added references to the traditional role of women in many LEDCs and the physical difficulties of bringing the water back home (e.g. such as having to carry the heavy load and the lack of transport.). Some weak candidates repeated their answer to **(a) (ii)** by simply listing the uses of the water collected.

(iv)   This was generally well answered with the lack of clean water to drink and healthcare facilities to treat diseases being the most common responses. There were some graphic accounts of how the

multiple use of unprotected water supplies may lead to water borne diseases. Other candidates referred to the lack of water treatment facilities or the lack of education about hygiene. Weak statements which lacked precision or appropriate elaboration (e.g. they get it from rivers, they are not educated) were not credited.

(b)(i) Most candidates scored one or two marks. The most common suggestion related to the water being dirty if it were collected and stored in that way. Also many candidates recognised that the water supply would not be reliable as rain does not fall all year. A common limitation in responses was when candidates wrote about acid rain.

(ii) This was a challenging question but most candidates gained some credit. All three options were chosen, C being the most popular choice. Some very good justification was included in answers, however only the most perceptive candidates considered in any detail the disadvantages of all their rejected options.

(c) Tourism was the most popular economic activity, though many answers were seen about mining, logging and manufacturing. A wide range of areas was used as case studies, ranging from small scale to a much larger area (e.g. Amazonia). As in 3 **(c)** some candidates used their local examples (or examples from their country) to good effect. Whatever economic activity was chosen most candidates considered the impacts of the loss of vegetation, habitats, ecosystems and wildlife, some being fully developed with place detail. Some weaker answers referred to water and air pollution and litter, with little attempt to do more than just list ideas. Some candidates were vague when describing their economic activity and/or focused incorrectly on global impacts and threats to people in the area although the question clearly asked about the local natural environment.

Question 6

(a)(i) Most answers were correct.

(ii) Most candidates correctly identified a renewable form of energy however some did not identify that the only form of non-renewable energy likely to be used in 2020 is natural gas.

(iii) This was generally answered well and many answers included accurate statistics. The most common changes described were in the use of natural gas, coal and oil, and nuclear power.

(iv) This was a good discriminator. The most common correct ideas referred to air pollution, global warming, greenhouse gases and radiation. Weaker candidates typically wrote in simplistic terms such as 'no nuclear power is safer' and 'cheaper electricity'.

(b)(i) Many candidates identified three relevant reasons related to the strength of the wind, the land area required, and the expense of construction. Weaker answers failed to explain these ideas in sufficient detail and there was some confusion between the reasons why the use of wind power is limited and the local disadvantages which may result from its generation, such as noise and visual pollution.

(ii) There were some excellent, well balanced answers to this question however a significant minority of candidates focused more on arguments against the wind turbines (e.g. noise, visual pollution and danger to birds) than the arguments in its favour. The most popular argument in favour was its reduction in air pollution, however many candidates were under the misconception that people living near to the turbines would receive cheaper power or have more electricity than those living far away.

(c) The most common examples chosen were hi-tech industries in locations such as Cambridge Science Park, the M4 Corridor and Silicon Valley. As in 3(c) some candidates used their local examples (or examples from their country) to good effect. The high scoring case studies developed ideas and included place detail, particularly in relation to raw materials, markets and transport methods whilst weaker candidates tended to list ideas.

GEOGRAPHY

> **Paper 0460/13**
> **Paper 13**

Key messages:

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

- ensure that the examination rubric is followed correctly, answering 3 of the 6 questions only and that they need to answer one question from each of the three syllabus themes (i.e. **Question 1 or 2**, **Question 3 or 4**, and **Question 5 or 6**).
- answer all parts of the chosen questions as questions requiring the completion of a map or graph are omitted by some candidates.
- read the question carefully – it is important to spend time doing this. If it helps underline command words and words which indicate the context of the question.
- know the meaning of and respond correctly to command words used in questions. In particular know the difference between 'describe' and 'explain'.
- identify the correct focus specified in the question stem – e.g. causes or impacts, natural or human environment.
- learn the meanings of key words in order to be able to define and accurately use geographical terminology. When defining words or phrases candidates should not simply repeat a word or words as part of their definition.
- describe a distribution from a map and name features to support their answer.
- describe the location of a feature or place, supporting this by giving distances and directions from named places.
- use the mark allocations and answer space provided in the question and answer booklet as a guide to the length of answer required and the number of points to be made. Some candidates write over long answers to questions worth few marks at the expense of including detail in those requiring extended writing.
- write as clearly and precisely as possible avoiding vague, general statements.
- write developed ideas wherever possible where extended writing is required in the final two parts of each question, ensuring that ideas are developed with the correct focus.
- perform basic skills such as interpreting graphs, photographs and maps of various types, using accurate statistics or referring to specific features as appropriate to support ideas.
- approach questions which ask for comparison by writing comparative statements rather than writing discrete comments about each item being compared.
- avoid direct lifts from resource materials when a question asks for interpretation of ideas.
- have a range of case studies so that appropriate ones can be chosen for the topics tested and ensure they are aware of the scale of the question – e.g. city or country or area.
- include place specific information in case studies, whilst avoiding writing a long introduction to the question with place detail at the expense of answering the question.
- when using the extra space at the back of the question and answer booklet make it clear that the answer is continued and indicate the number of the question accurately.

General comments:

The examination was considered appropriate for the age and ability range of candidates and it differentiated effectively between candidates of all ability levels. As always the most able and well prepared candidates performed very well across the paper and some excellent answers were seen. Most candidates were able to make a genuine attempt at their chosen questions, however weaker candidates found it difficult to interpret tasks and write effective responses to some or all questions.

Some candidates disregarded the rubric by answering four or more questions, however it was rare to encounter papers where all questions had been attempted. Usually if all questions had been answered they

were all very however some stronger candidates crossed out several lengthy answers, wasting time which could have been spent working on their chosen answers. Also some candidates did not choose one question from each section and for example answered **Question 1**, **2** and **3**. This means they lost marks for a whole question. Hence, it is vitally important that candidates follow the rubric.

Reponses from candidates should be legible to help examiners to read and properly credit their content.

Question 1 was the most popular and **Question 4** was the least popular. There were many good attempts at all the case study questions, the final part of each question particularly causes of food shortages, the causes of a volcanic eruption and rural to urban migration. High quality answers in these case studies were characterized by a range of developed ideas and occasionally some place detail. Some weaker responses tended to be generic developments of ideas with little place detail to support them whilst others were characterised by the use of simple statements. In some cases the detail provided was largely irrelevant to the question being asked, including long and unnecessary introductions, some of which occupied almost all the answer space.

Case studies require place specific information to allow access to the highest level. This requirement can vary between questions – an urban area (**Question 1** and **Question 2**) or a country or region for example (**Question 6**) or a named feature such as a volcano in (**Question 3**), despite this some candidates still name a country instead. Some candidates do not carefully consider their choice, limiting their mark by inappropriate choices, for example choosing a country rather than an urban area or vice versa. Where an 'area' or 'region' is required choosing a country usually tends to be unacceptable as this is likely to be too large a scale although question 6 in this case asked for a country or region.

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

Comments on specific questions

Question 1

(a) (i) The vast majority of candidates correctly identified population density as 'the average number of people who live in a unit of area' but some placed more than one tick and the first answer was a fairly frequent distractor.

(ii) This response was usually correctly calculated but there were a few answers which divided the area by the population and some which lost credit due to inappropriate rounding down to 22 people per square kilometre.

(iii) Most candidates were awarded credit for reference to the lack of rain/water supply idea and the problems this could cause. A few strong candidates could give accurate figures for rainfall and diurnal temperature variations but full mark answers were rarely seen.

(iv) Many candidates gained half marks for basic ideas about tourism and trade. Only the stronger responses accurately and clearly expressed ideas about climatic amelioration or developed ideas about trade and tourism. Many answers referred to 'water availability', 'scenic views' and 'recreation for residents' who would not be living there without the economic opportunities offered.

(b) (i) Few candidates identified the general unevenness of the population distribution; most identified that there were coastal concentrations and that the main one was in the south-west. The second mark was often gained for located on the coast. Candidates should be taught to avoid vague ideas in their answers such as 'along the edges or on the edge of'.

(ii) Most candidates could identify hostile features of the landscape and climate from the various photographs but only rarely were these ideas clearly developed as to how they repel people. The vast majority of candidates were able to score at least 2 or 3 marks here. Candidates should be encouraged to develop their ideas fully here.

(c) Most candidates could score at least one L2 idea here with the idea of 'better paid jobs' but some answers were clearly not about rural-urban migration with a 'country' stated as the example and statistics quoted for Mexican/USA literacy and GDP figures for instance. Relatively few candidates could write convincingly about specific features of their named city such as a named university or

entertainment facilities to gain full marks. Candidates should be encouraged to avoid duplicating their answers e.g. a push factor is 'lack of employment' and a pull factor is 'more jobs available', they should write about a wider range of ideas and focus on developing three of them more fully using place specific examples and ideas.

Question 2

(a) (i)   Almost universally correct with very few incorrect answers. A handful of candidates did not use the list provided and wrote their own list.

(ii)   Again, almost universally correct responses were seen and candidates were able to complete the two areas of the map accurately.

(iii)   Relatively few candidates could identify the expected relationship between distance from the Centre and percentage of cyclists, tending to write lengthy lists of named areas and their subsequent percentage. However, some full mark responses were seen. Again the uneven distribution was not picked up on by candidates. Candidates should be encouraged to look for patterns and to use comparative language e.g. 'greater/lower/more/less'.

(iv)   Most candidates scored well on comparing the relative merits of using bicycles rather than motor vehicles. The most common ideas were about having fewer cars on the road, less air pollution and noise pollution and finally people being healthier.

(b) (i)   Although some candidates wrote about all the modes of transport which was not required most scored well on the changes shown with appropriate percentage figures quoted. The majority of candidates were able to clearly state that there was an increase in car usage and a decrease in the use of buses.

(ii)   This question was generally not well answered at all. Most candidates could see the benefits of using public transport but some missed the thrust of the question which required them to state practical ways of developing or expanding public transport. Too many referred to pricing strategies which is not relevant without the existence of the networks in the first place. Candidates should be encouraged to read the question carefully before starting to write everything they know about public transport. This question was about 'how' to develop public transport not about encouraging more people to use it.

(c)   Again this question was not particularly well answered with many candidates writing about general urban growth problems which could be related to sprawl but only the best answers were clearly related to the city expanding at the edge such as loss of kampongs in Singapore or long distance commuting to the CBD and its attendant congestion. Some candidates did not name an urban area which limited their score to just 5 marks.

Question 3

(a) (i)   Candidates could almost universally identify 'volcanic eruption' correctly. The most common incorrect answer seen was 'earthquake'.

(ii)   Most candidates answered correctly but weaker responses failed to make the necessary comparison between droughts and floods and some wrote about the potential impacts of both without any reference to differences in deaths or cost. This was an example where candidates did not read the question carefully.

(iii)   Many candidates were awarded credit on the need to replace or repair housing and roads but many referred vaguely to 'infrastructure' without showing any clarity about what that might be and hence did not gain the final mark available.

(b) (i)   This was generally well answered with most candidates scoring full credit by identifying the country and island and with a suitable compass direction. There were some weak answers talking about the 'top of Sumatra' or irrelevant or overly broad reference points such as the Indian Ocean. Candidates should be encouraged to be specific when describing locations and to avoid the use of terms such as above/below/top/next to etc.

(ii)   Some candidates spent too much time expanding on the ways eruptions are preceded by warning signs so they did not make enough separate points (as there are no development marks available on a 4 mark question). Most candidates however, scored by referring to warnings, evacuation and the slowness of lava flows. The most able candidates made additional points about diversion channels or other ways in which the local population may be prepared for an eruption.

(iii)   The vast majority of candidates scored marks for basic ideas like fertile soils, tourism and geothermal power but only the most able developed their points well to gain the full credit.

(c)   There were some excellent place specific answers seen about the movement of named plates especially where Mt St Helens was the stated example. Rarely however did answers score full marks for a complete sequence of events from subduction through to melting and magma pressure building up. Some weaker candidates did not read the question properly and talked about the impacts of earthquakes which was not required.

Question 4

(a) (i)   Most candidates scored the mark here for a figure between the agreed tolerance of 5300 – 5600 kms. However, there were some very specific figures complete with numbers to several decimal places where it was expected that answers would be to the nearest 100 km using the scale on the map.

(ii)   Most candidates scored well here if they remembered the Sahara Desert only covers the North of Africa. Many candidates stated that the desert is located in 'Africa' which is too vague.

(iii) (a) Description - many candidates gained credit for mentioning the high diurnal range of temperature or the simple statement for 'hot and dry'. Yet few candidates were able to quote relevant statistics such as rainfall under 250 mm or accurate figures for the diurnal range in temperatures to gain full marks.
   (b) Explanation - this question was not particularly well answered but most could identify factors such as the lack of cloud affecting the temperatures but only the more able candidates referred to the impact of high pressure and sinking air on the rainfall. Many weaker candidates vaguely referred to lack of vegetation or lakes or rivers.

(b) (i)   This was also not particularly well answered with too many responses focussing on 'mountains' or 'hills' which were not appropriate to the scale of the image and there were also marks lost by referring vaguely to 'vegetation' rather than shrubs or trees.

(ii)   A range of varied responses were seen here and the question differentiated well with the best answers referring to a wide range of specific plant features which they then developed how they assisted the plant's survival. Relatively few wrote about the short life-cycle employed by many grasses and weaker candidates gained marks for simple ideas such as – 'needles instead of leaves' or long roots' but then did not really go beyond those ideas.

(c)   This was probably the least well-answered question from all of the part 'C' questions. There were some valid general points made about 'muddy areas, long roots and sheltering other sea creatures' but there were rarely any specifics about temperatures or tidal ranges. Some candidates incorrectly referred to mangrove swamps as being 'built' in specific areas. Candidates should be encouraged to read all of the sub sections through fully before making their selection of questions as quite often a candidate will perform well on the earlier sections but then part **c** lets them down or they miss it out completely.

Question 5

(a) (i)   A lot of accurate answers were seen here but errors included naming two hotels or, bizarrely, stating other tourist facilities such as the souvenir shop. Some candidates clearly did not understand the term 'accommodation'.

(ii)   Many full mark answers were seen here when candidates referred to a job rather than just listing 2 workplaces e.g. 'hotel manager' rather than 'hotel'.

(iii)   Most candidates were able to score at least 2 marks for simple descriptive skills here but there were vague references to 'greenery' or 'vegetation' rather than 'forests' or 'woodland'. Some

candidates spent time stating the activities visitors could do rather than identifying the physical landscape features that would allow them to do these activities.

(iv) Where the candidates thought about the likely impacts of 2000+ passengers disembarking in a small Norwegian port resort they tended to score well on ideas like noise, litter and overcrowding. Weaker candidates wrote about extreme and unlikely impacts such as tourists taking jobs or impacts on the natural environment when the question asked specifically for impacts on the people who live there.

(b) (i) Although some candidates wrote at great length about every fluctuation in tourist numbers most candidates scored on the 'overall increase' idea with figures although the figures were not universally well read off the graph. Many full mark answers were seen but candidates should be advised not to talk about every single peak and trough on the graph but rather look for the overall pattern and then pick out some significant peaks and troughs with the relevant time period.

(ii) Many candidates gained marks for the idea of bringing in more money and more employment opportunities. However, full mark answers were fairly rare, often because of the repetitive use the question stem words 'economy' and 'infrastructure' without ever stating what that might include like specific jobs or reference to improvements in transport and public amenities like water supplies or other utilities.

(c) Most answers were about either tourism or rainforest exploitation with a few car manufacturing examples. Good points were made about loss of habitat but fully developed answers were rarely seen. Answers tended to be vague and repetitive which often limited responses to simple Level 1 marks.

Question 6

(a) (i) This was generally well answered with the vast majority scoring the mark here. However, some candidates incorrectly identified other farming types from the diagram.

(ii) This was also very well answered in general with very few candidates answering incorrectly.

(iii) The vast majority answered correctly here with most candidates scoring full marks. However, shifting cultivation was a significant distractor for the first answer. There were also some weaker responses which made no use of Fig. 10 such as pastoral and arable.

(iv) Most candidates were able to gain credit for the idea of 'greater yields' and 'profits from a small area of land'. Few scored full marks with any credible reference to other inputs such as large amounts of labour or being able to afford machinery in place of labour.

(b) (i) Where the candidate picked out verbs such as planting, fertilising and harvesting they scored full marks. However, this was rare as some referred to two different uses/sources of fertiliser or lifted nouns from Fig. 11 such as 'compost is fertiliser for orange trees' or 'the people eat the crops' which does not state a clear process being carried out. As such this was generally not very well answered.

(ii) This question was not clearly understood by most candidates with many different irrelevant ideas about potential flooding or just statements of what is there in Fig. 11 without any idea of how it influenced what is produced or where. A few good answers did refer to the soil being fertile enough or the river/lake being available to irrigate crops with or to keep the ducks on. Thus most candidates only scored 1 or 2 marks here.

(c) This was a good differentiator with a wide range of responses being seen. Answers about current or former war zones such as Sudan tended to be limited to a single Level 2 idea. Better answers referred to the Sahel or countries within the Sahel region and the wide range of output-limiting factors therein such as overcultivation/overgrazing, deforestation and drought. Some irrelevant ideas were also seen referring to the impacts of food shortages. Again it is important that candidates read the question carefully and should avoid writing everything they know about a topic.

GEOGRAPHY

| Paper 0460/21 |
| Paper 21 |

Key Messages

Candidates could have improved their performance with better knowledge of geographical terms
Understanding of command words such as *describe*, *suggest* and *explain* was an area to work on for
many candidates
The marks available for each question indicate the appropriate level of detail required in answers.
Where only one or two lines are provided for an answer, candidates should respond briefly and to the
point. The best answers were focused on the questions asked and often were concise, making excellent
use of the resources provided in the paper.

General Comments

A range of responses was seem across the whole paper. Almost all candidates answered the questions
within the spaces provided and avoided the use of additional sheets. Most candidates were able to complete
the paper in the allotted time with few indications that candidates has time management issues.

Question 1

(a)   Most candidates scored good marks in this section and made careful reference to the map key.
Some candidates, however, did not include the detail of *with spire/minaret/dome* in **part (iv)**.

(b)   Whilst there were some correct answers (3 km²), many candidates found the estimation difficult and
did not appreciate that the grid squares were 1 km².

(c)   In **part (i),** many candidates did not fully understand the meaning of *relief* and chose to describe all
types of land use present. Of those who did understand the term, many answers referred to *high*,
steep and *cliffs* and less frequently to the *many or small, V-shaped valleys*, the *spurs* or *saddles*.
Only a few candidates recognised the highest point as 931 m. In **part (ii)**, most candidates
identified the rivers as *narrow* but very few correctly recognised the *radial* nature of the drainage
pattern in **part (iii)**.

(d)   This section was answered with mixed responses. In **part (i)**, credit was given for answers in the
range of 3750–4000 m and many were correct. Candidates tended to give more accurate answers
by using the scale line rather than by using mathematical calculations. In **part (ii)**, candidates
sometimes failed to measure from the north in a clockwise direction, and whilst many chose the
correct answer (270°), a range of incorrect answers were given. In **part (iii)**, most candidates gave
the correct answer of *263 244*.

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(e)   Candidates found this section difficult and sometimes did not pay careful attention to the wording of the parts of the questions. In **part (i)**, some responses focused on the advantages of the A66 route for Keswick rather than on the choice of route. Of those who approached the question correctly, most recognised that the A66 went *around the settlement* but rarely gave any more detail. Candidates had greater success in **part (ii)**, recognising the influence of relief features, the woodland and the lake, though not always developing their answers sufficiently to gain credit. In **part (iii)**, only a very few candidates scored a mark and simply copied whole lines from the map key. The correct answer was *cuttings and embankments* but quoting *tunnel cuttings* and *viaduct embankment* directly from the key did not score.

Question 2

(a)   Most candidates made use of the resource provided (Fig. 4) very well and were able to identify two African countries in **part (i)**, two routes in **part (ii)** and the *UK* in **part (iii)** correctly.

(b)   Again, most candidates studied and understood the resource (Table 1) and correctly stated *Bangladesh* in **part (i)** and *Pakistan* in **part (ii)**. Candidates found **part (iii)** more challenging though most identified the *increase* and many that it applied *for all three countries*. The key to a good answer in **part (iii)** was in ensuring that the changes described were <u>general</u> and did not refer to particular years or numbers. An answer such as *numbers from all three countries increased* would gain the two marks. Candidates did not score if they only mentioned one or two of the countries individually or where the change was not identified as an increase.

Question 3

(a)   Most candidates commonly identified the *beach*, *bay* and *rocks* but many were not aware that this section only called for description of the landforms. Credit was not awarded here for any discussion of the processes occurring here or for discussion of landforms which were not visible in the photograph.

(b)   Candidates found this section difficult and there were some lengthy but relatively weak responses. Most responses did not appreciate that the sand dunes at Y were formed as a result of the onshore wind acting upon the sandy beach at X and answers were incorrectly based on the action of waves. Some candidates incorrectly described the development of the vegetation at Y rather than the sand dunes themselves.

Question 4

(a)   Although there was a huge variety of answers in **part (i)**, most candidates gained credit for identifying that the ground surface was *flat*, *grass* or *soft*. In **part (ii)**, however, few responses considered the question in depth and did not specify particular features of the rain gauge, giving very general points which did not gain credit. Responses did not show much awareness of the structure of the instrument and how accurate measurement is achieved.

(b)   Many candidates found this section difficult and few demonstrated that they understood how the hygrometer is used to measure humidity. A large number correctly read the required temperatures in **part (i)** though sometimes the wet and dry readings were reversed. The units (°C) were not always stated. Candidates struggled to calculate the answer of 8°C in **part (ii)**, appearing to be unfamiliar with the relevant terminology. Similarly, there were few correct answers of *33%* in **part (iii)** which demanded reference to Table 2. A mark was available for the units (%).

Question 5

(a)   Many candidates gained the mark in **part (i)**. Responses in **(ii)** were also accurate and most candidates described the general picture, usually scoring two or three marks.

(b)   Pie charts were usually clearly and accurately completed in **part (i)** and the majority of candidates scored high marks in this section.

Question 6

(a)   Although there were some good answers, phrases like *above the Equator* and *below 23½°N* were not given credit. Candidates sometimes confused deserts with the process of desertification.

(b)   Most candidates found this section difficult and struggled to give relevant responses using the information in the resource (Fig. 10). Many quoted ideas from the resource but did not use them to answer the specific questions. Very few related their answers to the human issues stated in the resource, in particular to the *rapid population growth* and the *wars and refugees*. In general, more marks were scored on the negative effects than the positives.

In **part (i)**, the positive effects credited included *the production of food for the growing population or refugees* and *the use of dung as a fertiliser to improve the soils* but few candidates gave the required detail in their answers. On the negative side, candidates often wrote about the problems for the animals rather than the negative effects of keeping them.

In **part (ii)**, there were few answers which gained credit for the positive effect but many candidates recognised the negative effects of removing the vegetation and deforestation.

Again, in **part (iii)**, answers relating to the positive effects were largely lacking detailed relevance to the resource. Soil erosion and the loss of soil fertility were, however, frequently and correctly identified as negative effects.

GEOGRAPHY

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Paper 0460/22
Paper 22
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Key Messages

In recent years there has been an improvement in candidates' ability to give the third and sixth figures of grid references accurately, however this was not done well for this paper. The correct method is described in the syllabus.

When describing distributions on maps, candidates should use compass directions and avoid phrases like 'above the Equator' or 'at the bottom of the map'. Candidates are expected to use the correct geographically terminology.

When giving figures in answers (e.g. altitudes, distances, temperatures) candidates should always quote the correct units.

From 2016 onwards candidates are expected to be able to complete cross-sections from contour maps. This is an area that many candidates require more practice.

General Comments

There were parts of all questions which many candidates found to be demanding and these are described below. **Question 6** proved to be the easiest on the paper and **Question 3** the most difficult. Candidates answered the comparison in **Question 4(a)** very well.

Question 1

(a) Candidates generally identified feature **A** as a *post office.* They often found it difficult to give the correct grid reference of **B** as *439570*. The height above sea level at **C** was usually described as *225m* but many candidates failed to gain credit by failing to give the units. Candidates generally correctly identified the feature at **D** as *Holy Well*.

(b) The roads in Fig. 1 were third class roads and most candidates recognised this. Most candidates correctly identified the settlement pattern in the area as *dispersed* also.

(c) Candidates coped well with the unfamiliar style of question in **part (i)**. They drew the road along or close to the edge of the built-up area and then straight to point **F**. They found it less easy to describe the pattern of main roads. Many recognised the radial pattern and the examiners accepted a wide range of expressions for this. Fewer candidates identified the ring roads.

(d) Many candidates were able to gain full credit by mentioning points such as the terminus at MacDonagh Station and the straight line leading from the city centre to the south east. Many candidates thought that the disused line followed by the footpath to the north was a tunnel.

(e) Most candidates identified the meandering path of the River Nore. Answers to the distance measurement were less accurate than is sometimes the case; examiners accepted answers within a tolerance of 4050–4350 metres. The compass bearing was well-answered with most answers within the allowed tolerance of 157–161°.

(f) In comparing the relief of areas **P** and **Q**, two marks were available, one for a comment on height and one for a comment on gradient. Many candidates scored two marks but others failed to make valid comparisons. The highest points in area **P** were just over 220 m so examiners did not accept that the area was mountainous. As is often the case in questions about relief, there were some irrelevant comments about roads, land use and settlement.

(g)   Candidates who correctly found the line of section from 400530 to 450530 were generally able to identify the small settlement at **Y** as *Gorteenteen* and the feature at **Z** as a *road* or *river* or *track*. This was the first time that candidates had been asked to complete a cross-section on this paper. There were many excellent answers but other candidates omitted the question or simply drew a straight line between the incomplete ends of the section. When completing cross-sections, candidates should be discouraged from drawing the summits of hills as completely flat or sharply pointed.

Question 2

(a)   Most candidates correctly identified the two rural settlements as the *isolated* house and the *village*.

(b)   **Part (i)** was very well-answered with candidates identifying the *nucleated* pattern before 1900 and the *linear* pattern today. In **part (ii)**, candidates often scored one mark for noting the *road junction* but they rarely commented on the direction of the roads or the influence of the *bridge point*. Many candidates were able to suggest risk of flooding (or flood plain) as the reason for the lack of settlement at **X** and the natural feature of the hill top providing the good defensive site.

Question 3

(a)   Examiners accepted a range of points for the description of the relief in Photograph A. Candidates frequently commented on the steep slopes, interlocking spurs, V – shape and narrow valley or floor. Less frequently they referred to the steep gradient, cliffs, deep valley or gorge, straight valley and gentler upper slopes. Responses which gained full credit were rare. As is often the case in questions on relief, there was much irrelevant description of the river, vegetation and land use.

(b)   Photograph B showed *bed load* or *traction* and Photograph C showed *suspension*. It was rare for full credit to be scored. Candidates did much better in **part (ii)**. They often realised that the load downstream of the dam would be less or finer. They generally thought that this would be due to deposition in the lake or related to reduced discharge.

Question 4

(a)   Candidates answered this comparison question very well. They gave clear points of difference rather than single points. All the following were frequently quoted: **A** gentler slopes than **B**; **A** wider than **B; A** wider crater than **B**; **A** lava **B** lava and ash; **A** no parasitic cone **B** more vents; and **A** larger magma chamber than **B**. Less frequently candidates referred to **B** being more violent and having more viscous lava. It was not true that **B** was higher than **A**.

(b)   Despite the fact that the syllabus refers to shield volcano and strato-volcano (composite cone), answers were generally disappointing.

(c)   Answers were very mixed. Volcano **A** was mid-plate or away from plate boundaries and Volcano **B** was at a destructive plate boundary.

Question 5

(a) Most candidates knew that commercial farming was for profit or sale but the definition of arable farming proved more difficult. Many candidates referred to this as subsistence farming.

(b) There were some excellent answers to the description of the distribution of rice cultivation. Candidates made general points such as that cultivation was mainly in the tropics and in the northern hemisphere. They also referred to specific areas such as the Caribbean, north west of South America, Central America, West Africa, Southern Europe, South East Asia, Japan, Indonesia or eastern Madagascar. Frequently, responses contained expressions such as 'below the Tropic of Cancer' or 'above the Equator'; these were not given credit. When marking these questions it is assumed that candidates know the names of the continents but not necessarily country names.

(c) Here some candidates failed to give reasons for the distributions and made descriptive points. Others failed to refer to differences and discussed only one of the crops. Candidates suggested that rice required hotter temperatures and more rainfall than wheat and that differing diets in different parts of the world would be a reason.

Question 6

(a) The vast majority of candidates chose the correct definition of globalisation.

(b) Defining a transnational corporation proved more difficult for some candidates. The most common error was to misread corporation as co-operation. Other candidates felt that the corporations only operated in LEDCs.

(c) This question was answered very well. The factors which encouraged transnational corporations to open factories in LEDCs were 3, 6 and 9. The advantages of these factories for LEDCs were 1, 4 and 7. The disadvantages of these factories for LEDCs were 2, 5 and 8. All were quoted frequently.

GEOGRAPHY

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Paper 0460/23
Paper 23
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Key messages

One area for improvement is for candidates to work on their knowledge of geographical terms
Understanding of command words such as *describe*, *suggest* and *explain* was an another area to
address for many candidates
The marks available for each question indicate the appropriate level of detail required in answers.
Where only one or two lines are provided for an answer, candidates should respond briefly and to the
point. The best answers were focused on the questions asked and often were concise, making excellent
use of the resources provided in the paper.

General comments

Candidates coped well with the perhaps less familiar UK map and **Question 1(a)** proved to be particularly
easy, along with **Question 4(a)(i)**, **Question 5(a)(i)** and **Question 6(a)**. Conversely, many candidates found
Question 1(b)(ii) particularly challenging. **Question 3(a)** and **Question 4(a)(ii)** were also difficult.

Question 5 and **Question 6** both contained parts where the phrasing was similar, and candidates needed to
read carefully and pay particular attention to the command words here, in order to avoid muddling the
information required for each answer.

Question 1

(a)   Candidates found this to be relatively straightforward and the majority scored full or close to full
credit. The type of road at **A** was a *main road* or an *A road*, specifically the A5012. (A copy of
A493, from the key, was incorrect.) **B** was a *post office*. **C** was an area of coniferous wood. **D** was
a *viewpoint*. **E** was an *electricity transmission line* or simply *pylons*. **F** was a *triangulation pillar*. The
most likely errors were for **B** and **E**. For **B** some candidates were looking along northing 55, rather
than 56, and so found parking rather than post office. The transmission line at **E** was crossing an
area labelled Carsington Pasture, so some candidates answered *pasture* rather than using the map
key to identify the symbol.

(b)   Four pieces of map evidence to indicate that Carsington Water was a tourist attraction included
sailing club, *picnic site*, *camp/caravan site*, *walk/trail*, *visitor centre*, *public convenience* and
parking. Many candidates correctly selected four of these. The only one that was sometimes
interpreted incorrectly was parking, with some candidates copying *parking, park and ride…* from
the line of the key. Evidence for Carsington Water not being natural were the straight embankment
on the south-west side indicating a dam and the roads leading directly to, and stopping abruptly at
the water's edge. Few candidates gave this evidence and instead argued that there were no or few
tributaries or no outlet for the water.

(c)   The railway line to the east of the map was the focus for testing of map skills. The grid reference of
Idridgehay station was 290 487. The distance from this point, north to Wirksworth station, was
between 5500 and 5700 metres, while the bearing from Wirksworth back to Idridgehay was
between 179° and 181°. Many candidates were slightly better at answering the questions on
bearing.

   The feature, just north of Idridgehay station, used to keep the railway as level as possible, was a
cutting. Many thought that this was a tunnel or wrote out the whole line of the key.

(d)   Acceptable descriptions of the relief included *higher in the east*, *flat in the west*, *steep slope in the centre*, *flatter at the top* and *valley*. Credit was also available for quoting a height figure, such as the spot height of 119 metres. Candidates who located their comments, gained credit but there were quite a few rather vague answers. Some candidates had written about human features, while others had selected the wrong square, usually 1646.

(e)   The correct reasons for the shape of Ashbourne were *in the east it avoids the valley of the Henmore Brook* and *it has grown along A and B roads*. Typically candidates got one of these correct, usually the second.

Many candidates pointed out that the new road, on the southern edge of the town, would reduce congestion in the town or that it would make journeys shorter or quicker. A few responses were rather too vague, such as *it would make things easier for drivers*.

(f)   Candidates had to compare the settlements patters in square **A** (dispersed) and **B** (linear). The most common error was to write about the road types and service provision in the two areas. Some also wrote about density of settlement, rather than pattern.

Question 2

(a)   Almost all candidates had correct answers for **part (i)** and **part (ii)**. In **part (iii)** some had calculated incorrectly, but the most common error was in assuming the dependent population was only those of 65+. Those who put 5.5% in **part (iii)** invariably chose country **A** in **part (iv)**.

(b)   The two countries with a population structure most typical of a developed country were **A** and **F**. These had low percentage of children and high percentage of elderly, which could also be expressed as low birth rate and low death rate or high life expectancy. A good number of candidates scored 3 marks, and those who had selected **D**, as one of the two countries, usually still gained the 2 marks for reasoning.

(c)   Most candidates were aware that the age structure of a single country can be shown in a population pyramid or age-sex pyramid.

Question 3

(a)   The wave in Photograph A was high and steep, resulting in it starting to break and giving it the characteristics of a destructive wave. Its position was parallel to the shore. Typically candidates scored 1 for this question, either for *high*, *breaking* or *destructive*. Many tried to describe what would happen as time passed, rather than sticking to what could be seen at the point in time captured by the photograph. Thus they discussed swash, backwash and the effect on the rocks, none of which were relevant.

(b)   Fig. 3 was a field sketch of the coastline shown in Photograph B and candidates were asked to label a number of features. Many candidates scored four or five here. The beach was most usually correct and also the cliff. Most candidates used labelled arrows to indicate their answers which were generally clear and unambiguous. However, occasionally the arrows ended in the sky or the sea which was not clear.

The photograph clearly showed the rock to be formed of many layers and other expressions were equally valid such as bedded, strata, cracks, lines of weakness or even sedimentary rocks. Many candidates simply assumed that the rock was soft, which could not be deduced from the photograph. Others wrote about the effects of marine erosion, missing the point about this particular rock's vulnerability.

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Question 4

(a)   Figs 4 and 5 were hydrographs for a tributary and the river that it was feeding. In **part (i)**, candidates had to use the graphs to complete the table, the information for one of the rivers being already inserted in each case. The peak flow level of tributary **X** was 3.6 or 3.7 metres and this was on 16th or 17th October. The number of flood events shown for river **Y** was 3, with the longest lasting 12 or 13 days. Most candidates had at least two of these correct.

Tributary **X** flooded at a lower level than main river **Y** due to having a smaller channel or a shallower channel. It was important here to get the idea of capacity into the answer, but many candidates simply said that the tributary wasn't as deep.

A main river usually has more serious flooding than its tributaries because there is more water involved. The floodplain is wider and flatter so a larger area can be covered and the water doesn't flow away easily. Additionally settlement is likely to be found on the floodplain of a main river. The majority of candidates scored 1 mark here, for referring to the larger amount of water.

(b)   Answers ranging from 0.4 to 0.5 metres were accepted for the base flow of tributary **X**. Many candidates had a correct answer.

Question 5

(a)   Most candidates completed the bar chart accurately and very few omitted the question.

Many candidates scored two marks for noting the change from Europe in 1968 to Asia in 2013, and either the change in Asia from one to five countries or the change in Europe from four countries to zero.

In **part (iii)** candidates were invited to suggest reasons for the change in location. Popular correct answers included the industrialisation and economic development of Asia, creating the need for ships, and the cheaper labour and raw materials in Asia, along with the depletion of raw materials in Europe. Weaker candidates suggested that Asia's coastal location was significant.

(b)   The tonnage of ships built increased from 1968 to 2013. Many candidates correctly suggested that this involved more ships and larger ships. Many also mentioned globalisation and expansion in trade as reasons for the increase. Other common suggestions were increase in numbers of cruise ships and advances in shipbuilding technology.

Question 6

(a)   Fig. 7 showed Brazil's Human Development Index (HDI) for 1991 and 2010. In **part (i)** candidates were asked to describe the variations in HDI in 1991 and were directed to use Fig. 7A. Most candidates did gain credit, usually for saying that the HDI overall was very low, and then mentioning the exceptions of the Federal District and the south or south-east.

Part (ii) involved both Fig. 7A and Fig. 7B and candidates were asked to describe the changes. Candidates who focussed on specific areas and described how they had changed generally scored three marks. Weaker answers often noted the general increase failed to refer to individual areas.

(b)   Most candidates were able to rank the three indicators: the greatest improvement was in education and the smallest was in income. Some candidates failed to add life expectancy to the middle line to complete the ranking while others reversed the order.

Most candidates scored at least one mark in the final part of the question and many had lots of good ideas. Good candidates argued that both education and income could be the causal factor.

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SECTION 2: Key Messages

Every examination is different but there are usually a few generic tips and key messages that need making that should improve candidate performance in future. Most of these have featured in previous reports but the same issues are relevant again despite the entry being a fresh batch of candidates with several new centres. Here are a few key messages that the examiners feel will benefit future candidates if they are passed on by teachers:

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. If you are asked to support your decision with data then statistics must be used from the resources referred to. Data is quantitative; evidence can be qualitative or quantitative. If you make an incorrect conclusion to the hypothesis you will gain no credit for the answer.

When giving figures in answers always give the units if they are not stated for you.

Read questions carefully and identify the command word e.g. *Describe, Explain.*

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.

Check you are using the resources that a question refers you to, e.g. *Support your answer with data from Table 1 and Fig. 4.*

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 by not attempting these questions.

Take into account the marks awarded. Examiners do not expect answers outside of the lines provided so do not write a paragraph when only two lines are given – this wastes time.

If you have to write more than the lines allowed indicate this with a phrase such as (*continued on additional page*). This is very helpful to the examiner in finding your answers.

When completing graphs shade bar graphs and pie charts accurately**.**

Make sure you have answered the questions on every page. This applies especially to questions where you are asked to complete tables, diagrams, graphs or maps.

SECTION 3: General Comments

Most candidates found this examination enabled them to demonstrate what they knew, understood and could do. The overall range of marks went from 1 to 53 out of 60 – a similar range to previous years – with weaker candidates scoring on the practical questions, such as drawing and interpreting graphs and tables, and candidates of higher ability scoring well on the more challenging sections requiring explanation and judgement especially regarding hypotheses. There was little overall difference between the standard of candidates' answers to the two questions.

There is less general advice to be given for areas for improvement with this paper compared with others. As there are no choices to make, it is difficult to miss sections out, although some candidates omit graph completion questions which are usually 'easier' to answer. This is an on-going problem from year to year despite it being highlighted in each report to centres. Although there were no significant reports of time issues some candidates do write too much in some sub-sections. They should be encouraged to answer more succinctly and perhaps give more thought to their answers. Most points for teachers to bear in mind, when preparing candidates for future Paper 41 questions relate to misunderstanding or ignoring command words and the use of appropriate fieldwork techniques and equipment. Particular questions where candidates did not score well often related to them not carefully reading the question, for example question **1(b)(iii)** where some candidates wrote about infiltration in all four areas rather than just the two areas specified in the question. As in some previous papers question **2(e)** required candidates to suggest a suitable investigation to extend their fieldwork. This type of question is frequently included on this paper and is an area which centres should practise with candidates. However, it is not good practice to develop a series of generic improvements which may apply to all fieldwork as such suggestions tend to be vague and not worth credit.

It is worth remembering that, although this is an Alternative to Coursework examination, candidates will still be expected to show that they know how fieldwork equipment is used and appropriate fieldwork techniques even if they have only limited opportunity for fieldwork within the centre. For example, questions **1(b)(i), 1(c)(i), 1(d)(i)** and **2(b)(i)** focussed on specific equipment and techniques commonly used in fieldwork. Centres are encouraged to carry out basic fieldwork with candidates, especially using simple techniques which can be done on the premises or in the local area.

SECTION 4: Comments on Specific Questions

Question 1

(a)   Nearly all candidates matched the processes with the correct definition.

(b) (i)   Good differentiation was shown by the question. Most candidates gained marks by describing how the water and stopwatch were used, but were often less successful in describing the use of the measuring cylinder. Weaker candidates did not appear to have read the question stem which contained the appropriate information needed. Consequently their answers were largely irrelevant. Some candidates did not realise that the stopwatch was used to record the water height every minute.

   (ii)   Most candidates plotted the value accurately, despite the quite difficult scale. However, 13% of candidates did not attempt the question.

   (iii)   Infiltration is quite a difficult topic to understand but the question was well answered by many candidates. A common mistake was to repeat that infiltration was slowest and fastest which was in the question, rather than referring to the length of time taken for the water to drain. Most candidates included supporting statistics which were accurate and comparative. A minority of candidates did not restrict their answer to the flood plain and woodland and so wasted time in referring to the flower garden and playing field.

   (iv)   This was a challenging question. Many candidates did not refer to differences in infiltration rates. Better answers included a focus on different types of soil or vegetation, and different locations near or away from the river. Weaker candidates tended to make vague statements about the type of soil or the amount of vegetation or proximity to the river without explaining how these factors varied and could affect infiltration.

(c) (i) The use of a quadrat proved to be a difficult method to describe for many candidates. It is possible that some had not used the equipment in their own fieldwork. Some responses did not shown an understanding of the reason for individual small squares within the quadrat and so did not refer to counting or estimating the number of squares covered by different types of vegetation or bare ground. Some candidates thought that each individual square was judged rather than the overall pattern. Answers which scored full marks often made the good point of using the quadrat in different areas of the park in order to compare the amount of vegetation cover.

(ii) More candidates plotted and shaded the divided bar graph accurately. However, once again the number of candidates failing to attempt the answer was unacceptably high.

(iii) This was a good discriminator. Better candidates used the data well and showed good understanding of how infiltration varied according to the amount of vegetation cover. The best answers contrasted infiltration rates, made a comparison between different types of vegetation, and supported this with contrasting paired data from two areas of the park.

(iv) Most candidates recognised that the playground was located on concrete and the best answers supported this statement by reference to concrete being impermeable or not allowing water to soak into it. Unfortunately some candidates stated that concrete would not allow infiltration. This was not credited as 'infiltration' is part of the question.

(d) (i) The division of tasks was understood by most candidates. However, a minority of weak candidates did not refer to the task described in the question and wrote about different fieldwork such as pouring water onto the path or counting pedestrians who were using it. Most candidates referred to holding the tape at the other side of the path and recording the measurements which were made. However, some candidates suggested that the students would measure along the path rather than across it, and they would measure the width of the path rather than the vertical distance between the tape and the ground.

(ii) Most candidates correctly measured the depth of the path from the cross-section.

(iii) The relationship between footpath erosion and infiltration was not understood by many candidates who thought that it would increase infiltration. Better candidates showed a clear understanding of how footpath erosion could result in compaction of the ground and a subsequent decrease in infiltration.

(iv) The question differentiated well. There were many excellent responses which included suggestions such as creating new paths, building paths out of concrete or other resistant materials, restoring eroded paths and raising awareness of footpath erosion. In contrast weaker candidates gave suggestions such as shutting the park to visitors, and preventing the erosion by stopping people walking on the grass.

Question 2

(a) (i) The majority of candidates correctly chose secondary. Popular incorrect choices were primary and stratified.

(ii) Almost all candidates correctly matched the descriptions to the map locations.

(iii) The question was challenging and differentiated well. Many candidates referred to population increase, road links, and the attractions of the countryside or the problems of cities. Weaker candidates suggested irrelevant reasons such as the river for transport or gave vague answers about immigration.

(b) (i) Few candidates scored three marks but many suggested two valid ideas. The most popular disadvantage which was suggested was that residents would be away from home during the working day. Better candidates related their answers to the map which showed the houses that had been included in the sample. Thus they commented that an advantage was that people from all areas of the village had been questioned, but the disadvantage was the imbalance between responses from the four areas. Weaker candidates made irrelevant references to traffic, safety and not questioning people from all houses. A minority of candidates focussed incorrectly on disadvantages for the students and made suggestions such as 'it would take a long time to do the work' and 'students may get tired because they had a long way to walk'.

(ii) Almost all candidates completed the two bars on the graph accurately.

(iii) Most candidates made the correct decision about the hypothesis and supported their conclusion with appropriate statistics to show how many of the people questioned had lived in the village for more than ten years. A small number of candidates focussed incorrectly on residents who had been in the village for more than 35 years.

(iv) Whilst most candidates gained some credit, few achieved full marks on this section. Many candidates did not state the general difference that people in area C had lived longer in the village. Better candidates included a general comparison in their answer as well as using statistics, for example all people in area B had lived there for less than ten years whereas in area C all had lived there for more than ten years.

(c) (i) Once again many candidates (12%) failed to complete the scatter graph. Other candidates generally plotted the information accurately. Errors made by some candidates were misreading the scale or plotting the information wrongly by plotting the distance on the number of years scale and vice versa.

(ii) The question was answered well by many candidates who usually identified that the hypothesis was incorrect. Many candidates used the statistics effectively to support their conclusion. A good answer described the general relationship between the two variables, focussed on the general trends shown by comparative statistics and gave examples of two or more contrasting residents. A small minority of candidates also identified an anomaly in the results.

(iii) Most candidates had difficulty in suggesting why there might be a relationship between the two variables. Some did identify that newer residents would be commuting to work in the city, but did not always link the long-term residents with a workplace in the village. Many candidates wrongly referred to young and old residents rather than the time they had lived in the village. Weaker candidates gave spurious reasons why older people are unable to travel any distance to work or suggested that long-term residents take all the jobs locally so there are none left for newer residents.

(d) (i) Most candidates correctly worked out the rank order by using the information in Table 4.

(ii) Most candidates correctly identified the pie graph as most appropriate to display the data, although a significant number chose the scatter graph.

(iii) Over half the candidates chose the correct conclusion. They realised that only 6 of the 35 residents were born in the village. A significant minority chose the conclusion of 'a quick journey to work' because it had the highest total of respondents, but this was less than half.

(e) The final question was challenging for many candidates. There were some excellent answers written by candidates who had probably undertaken this type of fieldwork. The best answers included ideas about counting shops or services, classifying them into categories, compiling the results into a table, and then mapping the results with a key to show land use. Some candidates also suggested repeating the fieldwork in different villages or different groups of students doing the task in more villages. Weaker candidates wrote about comparing things such as the quality of shops, pedestrian flow and profitability. Despite the instruction not to focus on a questionnaire a significant number still suggested interviews and questionnaires as being an appropriate methodology. Other candidates suggested the use of secondary data thereby ignoring the instruction to describe fieldwork.

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Paper 0460/42
Alternative to Coursework

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.

When giving figures in an answer always give the units if they are not stated for you.

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.

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.

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.

Check you are using the resources that a question refers you to for evidence or data e.g. Table 5, Fig. 8. Remember some resources will be in the Insert not on the examination paper.

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(b)(iv)**, **1(b)(vii)**, **1(c)(i)**, **1(d)(i)** and **2(a)(iv)**.

When calculating data from a table, note how the statistics are provided e.g. **Question 1(b)(vi)** has data to 2 decimal places so the answer should be provided to 2 decimal places rather than the long answer given by a calculator.

Take into account the marks awarded. Examiners do not expect you to be writing outside the lines provided so do not write a paragraph when only two lines are given..

It would be preferable for candidates to write in black and make sure any plotting and shading of graphs stands out clearly using a sharp pencil.

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 quite a few candidates gave an incorrect reference which made it difficult to match to the correct answer earlier in the booklet.

General comments

Most candidates found this examination enabled them to demonstrate what they knew, understood and could do. The overall range of marks went from 0-58/60 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 do – and on this paper there were a few sections that indicated high percentages of *No Response* though less than in previous sessions. There may have been a few time issues given the number of *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 Paper 42 questions, relate to misunderstanding or ignoring command words and giving plenty of practice using past papers to ensure they read the instructions carefully and complete graphs and other practical activities. 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.

Centres should be aware that, although this is an *Alternative to Coursework* examination, candidates will still be expected to show that they know how fieldwork equipment, such as that needed to measure river velocity, can be used even if they have only limited opportunities within the Centre.

Question 1 focused on carrying out fieldwork involving small river drainage basins. This is a popular activity that many schools can organise, even using streams within their grounds, whether entering candidates for Paper 3 or 4. Candidates needed to be aware of how to use a float, tape measure and stopwatch to measure velocity and the use of equipment to measure river width and depth. They needed to know the strengths and weaknesses of these techniques. As well as completing and shading a cross-section line graph, they also had to carry out a width calculation leading to a cross-section calculation, complete a simple bar graph and use a pollution recording form. As usual they needed to make decisions on two hypotheses that needed support from provided resources. They also needed to consider how to improve the reliability of their pollution survey. This question was quite well done with most candidates attempting all sub-sections. The areas of concern were **Question 1(c)(iii)** – explaining why discharge increased downstream, **Question 1(d)(ii)** – making a correct hypothesis judgement from the data table, and **Question 1(d)(iii)** – suggesting how the reliability of the pollution survey could have been improved. **Question 1(b)(iv)** and **Question 1(b)(vii)** were the sub-sections with the highest *No Response*.

Question 2 was about carrying out fieldwork into local shopping areas – particularly the CBD, suburban centres and out-of-town malls. Tasks included comparing the types of shops found in different urban zones and explaining these differences. Further tasks included describing how to carry out a pedestrian count and the various issues in doing this. Candidates needed to show that they understood terms such as '*comparison*' shops, '*secondary evidence*', the '*sphere of influence*' and they also were asked to decide how they would investigate the sphere of influence. The planning and plotting of pie graphs, and table completions and analyses were also included. In both cases the candidates were told the judgement on the two hypotheses and had to provide evidence from graphs and tables to support these decisions. One area of concern was **Question 2(a)(iii)** where far too many candidates chose '*business*' instead of '*comparison*' for the description of shops in Group **A**. **Question 2(a)(iv)**, **Questions 2(b)(vi)** and **2(c)(ii)** were those with quite high *No Response*.

Candidates found **Questions 1** and **2** equally accessible and there was an overall slight rise in the mean which was pleasing.

Comments on specific questions

Question 1

(a)   All candidates are expected to have a good grasp of the meaning of basic specialist terms involved in watersheds and river drainage basins and the majority did select the two required answers of *'confluence'* and '*watershed*' however there were many who chose other incorrect terms; the most common error was confusing '*tributary*' with '*confluence.*'

(b)(i)   This type of question has featured regularly on this paper and is a basic piece of fieldwork carried out on a length of river to find the velocity. It was important to note that the equipment required was listed so no other equipment, such as ranging poles, should have been referred to. One key feature of the best answers included measuring a realistic set distance with the tape measure along the river – a range of 5–15 metres was accepted if stated though a few gave unrealistic lengths such as 1 metre or 100 metres! Once the set distance was measured the candidates should have stated where the float was being put in the river – either just before or at the first point of the distance – and at that point the stopwatch would be started. This would be stopped once the float had reached the downstream point of the set distance. Too many gave vague ideas such as '*measure a distance*', '*put the float in the river', 'time the float'*. A few candidates appeared to be sending the float across the river; others sent the float down the river for a specific period of time rather than a set distance. Neither of these ideas could gain credit. No credit was given for stating how a velocity calculation was made as that is done after the fieldwork.

(ii)   This was reasonably well done. Quite a few candidates had noticed that the velocity had only been measured once, as stated in **(i)** and correctly gave that as a limitation. The other popular answer involved the possibility of obstacles of various types preventing the smooth flow of the float. The impact of wind was credited though not the existence of friction with the air. Candidate error was only credited if candidates gave an example e.g. incorrect timing using the stopwatch. It should be noted that the question asked for weaknesses, not how to improve the method used which is a different requirement.

(iii)   Credit here was for describing how the candidates would have used equipment to measure the width and depth of the river. While there was no credit for just stating the equipment, it was important to describe how any stated equipment was used. Although most candidates gained one mark for correctly stating that the width would be measured across the river or from bank to bank, few made mention of the importance of keeping the tape taut and at right angles to the bank to get an accurate measurement. A few responses referred to measuring the end of the river or along the river when they may have meant across but that is not what they wrote. How to measure the depth gained two marks more often with reference to measuring sticks at equal intervals and vertically across the river and making sure they touched the river bed so that the wet part could be measured. As there were no marks for the equipment, using string and a stone could gain credit if it was still being used in the same way as measuring sticks though this is a fairly primitive way of measuring depth.

(iv)   Almost all candidates who attempted this did plot 0.21 and 0.38 correctly though there were a variety of shadings to complete the cross section. On this occasion, though, it was the plots that were credited not the shadings. A few read the scale the wrong way up so plotted the two points too high. What is a consistent concern though is the percentage of candidates which did not attempt the question and left the cross-section incomplete. On **Question 1** this non-completion was the highest with no response yet it yielded maximum marks for those who attempted it.

(v)   This was a relatively easy question and most candidates stated that Site **3** was wider and deeper than Site **1** for the two marks. A number carelessly referred to Site **2** instead of **3**. The answers that did not gain credit were either vague or just listed statistics without any comparison e.g. '*Site 3 has a longer distance', 'Site 1 is 4 metres wide', 'Site 3 is 6.5 metres wide'*. A question that asks candidates to '*Describe differences…*' expects comparative answers not separate statements.

(vi)   The only acceptable answer to this was 0.46 which the large majority of candidates calculated. Having been referred to Table 1, where all the depths were given to 2 decimal places, the candidates should not have left their answers as 0.46142 but rounded to 2 decimal places. To get the answer candidates had to add the depths and divide by the 14 sites; this gave 6.46 divided by 14 = 0.46. Some left the answer as 6.46; others added up the distances to 45.5 and divided by 14 to give 3.25 as their answer. Some other answers were unexplainable!

(vii)   Candidates needed to use their previous answer to **(vi)** – even if it was incorrect – and multiply this by the width of the river at Site **3** which was 6.5 metres as shown in the referred Table 1. Most did this to end up with an answer of 2.99 square metres and gained both marks. Other candidates used incorrect widths such as 45.5 or 3.25 or the width of the incomplete cross-section of 5 metres. The second mark could be gained by a correct multiplication of the two figures to avoid penalising their error twice. A significant percentage did not attempt this question despite having attempted **(vi)**.

(c)(i)   To plot 0.9 on the bar graph was a straightforward task which almost all candidates did well. However, as with many of the practical questions such as this, a significant percentage did not attempt it so losing the chance to gain a relatively easy mark.

(ii)   This was done well. Even without plotting 0.9 in **(i)** most candidates could see that the river discharge did increase downstream and the hypothesis was supported. Most candidates gave Site numbers and discharge figures within an acceptable range to gain both marks. Some did not specify clearly enough which Site went with which discharge figure. The best answers referred to Site **1** upstream being 0.13 cumecs and Site **4** downstream increasing to 2.34 cumecs. Very few candidates referred to the units which was not penalised but Centres should encourage them to do this as best practice in answers.

(iii)   This question was not well done with a high percentage of candidates missing it out and only a few providing any detailed reasons for the increase in discharge downstream despite being referred to Fig.1, the drainage basin map. Quite a few candidates did recognise the importance of tributaries joining the main river thereby increasing the discharge and bringing water from a larger area but most could only state there were '*more tributaries*' which was not credited. A minority of responses stated that the river flowed from the Bristol Channel inland and then split up into tributaries! Others wrote irrelevant sentences about erosional processes and load.

(d)(i)   Most candidates gave the correct figure of 10 for Site **3**'s pollution score; other figures varied from 9 to 14. The main error was in adding up the bi-polar scores relative to the ticks for Site **3**; this is a technique that candidates need to be more familiar with. Again too many missed out the table completion.

(ii)   Despite Table 3 showing a decrease in pollution score from Site **1** to **2** followed by an increase at Sites **3** and **4**, many candidates judged that the hypothesis was '*true*' or '*false*'; yet a sequence of scores in the order of 5, 3, 10, 17 should have indicated that the hypothesis could only be '*partly true*' or '*true to some extent*'. Those that did this correctly quoted the fall in scores from 5 to 3 from Site **1** to **2** and the subsequent increase at Sites **3** and **4** from 10 to 17 to support this and gained all three marks. Even if candidates had not attempted **(i)**, the given sequence in Table 3 still indicated a partly true hypothesis so there was no issue of an error being carried forward causing an incorrect judgement to deal with here.

(iii)   This question wanted candidates to suggest ways that the reliability of the survey could have been improved. The best answers suggested using more sites than four, or using more candidates to check each other's work. Some suggested repeating the survey which is not, on its own, an improvement but if they then added taking an average of repeated surveys, credit was given. Answers not credited included carrying out the survey on another day or season or on another river none of which would improve the reliability. There were some odd practical suggestions involving the candidates collecting rubbish and weighing it or visiting local factories that might be causing it or carrying out questionnaires with local people.

Question 2

(a)(i) There were a number of vague answers given to the problem of plotting all the data into separate pie charts such as '*would not be accurate*', '*hard to do*' however most candidates could see the problems involved and popular responses included the idea that there were too many shops and services to plot, that they were not categorised and that comparisons would be difficult due to the unplottable size of some segments. A few responses dwelt on the time involved to plot the information.

(ii) Almost all candidates did this well by categorising the hair and beauty salon into Group **E** and the jeweller's into Group **A** and thereby gaining two marks. A few gave **B** instead of **E** and some ticked one of the services instead of allocating it a letter.

(iii) This question was not very well answered by the majority of candidates. Given the five groups **A**–**E**, they were asked to choose which word best described the Group **A** services '*Shops which sell mainly one type of product which are often expensive*'. The choice of '*business*' by many candidates was incorrect; the correct answer of '*comparison*' should have been chosen by candidates drawing on knowledge of different types of shops such as comparison and convenience shops.

(iv) A high percentage of candidates did not attempt the pie graph on page 10. Most candidates that did this gained full credit by plotting 68% in the correct clockwise order and shading the two slices correctly and in order. Compared to previous sessions this pie graph had fewer errors than before such as shading or plotting in the wrong order.

(v) It was important for candidates to note that the hypothesis referred to the three shopping centres so any comparison between them had to refer to '*the others*' or name the two other types that were being compared with. The best answers would state, for example, that '*the CBD had the greatest percentage of shops in Group A compared to the other two*' then quote the three statistics (21%, 8%. 20%) from Table 6 to support their statement. Two of these type of responses – statement plus statistics – would gain the four marks. Some candidates only compared two shopping centres; some only described the difference with no statistics and others just rewrote the statistics with no comparative statements at all. A few described the separate shopping centres 'vertically' down the table rather than with each other across the Table which did not help support the Hypothesis. Candidates were told that the hypothesis was true; this did not seem to stop some candidates from making a different judgement and then trying to justify their view. The question needs to be read carefully so that unnecessary time was spent justifying an incorrect judgement which was not needed.

(vi) Most candidates could suggest sensible reasons for different shops and services existing in different areas. These included the cost of land, the space available, the customer base and some candidates mentioned threshold populations and range of goods as well as the distance people were prepared to travel for different types of goods and services. Weaker answers referred to the class of people or where '*poor*' people lived being factors. A number seemed to think that wealthy people lived in the CBD and poor people in the suburbs to explain the difference, which is a misunderstanding of income levels in urban zones and the fact that, in general, people travel to rather than live in the CBD.

(b)(i) Carrying out a pedestrian count is a straightforward fieldwork exercise that most candidates should experience even if they are not undertaking the formal coursework assessment on this syllabus. The majority of candidates did suggest the expected ideas including having to decide when to count, where to do it, whether to do it in groups, how to count the pedestrians and how to record the information.

(ii) As candidates were referred to the graph, a range of 109–111 was allowed with the best answer – which proved also to be the most popular – being 110. A few candidates missed this out but the majority gained the available credit.

(iii) Candidates were told that the hypothesis was '*partly true*'; they were asked to support this decision yet some still decided to make their own – often different – judgement and support that. This was quite well done by many who recognised the decrease from the CBD to the suburbs then the greater increase at the out-of-town mall. Recognising these two trends yielded two marks leaving the third mark available for one comparative statistic e.g. 76 to 14 from CBD to suburb**.** A few

candidates gave no statistics despite the question asking for evidence from Fig.8. There were quite a few misreadings of data too which were outside the agreed tolerance.

(iv) Almost all candidates gained credit for suggesting that aspects of the weather would affect the count either by a reduction due to rainfall or an increase in sunny weather. The second mark, which was for some ideas on the possible influence of the time the surveys were taken, proved more elusive in that few candidates referred to it at all. Those that did, made sensible suggestions as to how work, school or the lunch hour and after-work counts could be affected. Some perceptive candidates noted that Monday was a working day and there may be different counts if the surveys were carried out at a weekend.

(v) Although a significant minority missed this out, most of the other candidates knew that secondary evidence was information that had been already collected or had been collected by others/somebody else.

(vi) Candidates could either recognise that the pattern of the years was similar in all cases or they could state that in every year the CBD was higher than the suburbs but the mall was much higher than the CBD. If candidates chose the latter course they had to refer to the two trends to support the conclusion – too many just referred to the CBD to suburb decrease which, on its own, cannot support a '*partly true'* conclusion. Recognising the increase from CBD to the mall was essential to support the full picture of change.

(c)(i) The majority ticked the correct choice at the bottom of the table defining the 'sphere of influence' as the '*area served by a settlement or service'*. Other common, but incorrect, choices were the *'area where people migrated to'* and the '*area around a town centre*.' A number missed this out which might have indicated a time issue given that the question only required a tick answer.

(c)(ii) There was a clear distinction apparent here between candidates who had carried out, or had been taught, fieldwork methods to find the '*sphere of influence'* and others who did not seem to know what this term meant. The best answers referred to the use of questionnaires and a specified sampling technique to be carried out in the CBD asking questions about the area people came from, how far they travelled and why they came to the CBD. Those ideas were all worthy of credit as were the answers, of which there were fewer, that suggested the practical option of plotting the areas where they came from on a map and joining the outer plots to define the area of influence. A few added appropriate diagrams. Candidates who did not know the term '*sphere of influence'* tended to suggest other inappropriate fieldwork activities such as land-use surveys, a pedestrian count or a traffic count. Time issues may have been an issue as this question had the highest percentage not attempting it despite it being clearly a stated syllabus requirement.

GEOGRAPHY

SECTION 2: Key Messages

Every examination is different but there are usually a few generic tips and key messages that need making that should improve candidate performance in future. Most of these have featured in previous reports but the same issues do keep coming up again despite the entry being a fresh batch of candidates with several new centres. Here are a few key messages that the examiners feel will benefit future candidates if they are passed on by teachers:

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. If you are asked to support your decision with data then statistics must be used from the resources referred to. Data is quantitative; evidence can be qualitative or quantitative. If you make an incorrect conclusion to the hypothesis you will gain no credit for the answer.

When giving figures in an answers always give the units if they are not stated for you.

Read questions carefully and identify the command word e.g. *Describe, Explain.*

When asked to compare, make judgements e.g. *higher, lower*, rather than just listing comparative statistics.

If comparing statistics it is important to use paired data rather than one set on its own.

Check you are using the resources that a question refers you to, e.g. *Support your answer with evidence from Table 1 and Fig. 2.*

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 by not attempting these questions.

Take into account the marks awarded. Examiners do not expect you to be writing outside of the lines provided so do not write a paragraph when only two lines are given – this wastes time.

If you have to write more than the lines allowed indicate this with a phrase such as (*continued on additional page*). This is very helpful to the examiner in finding your answers.

When completing graph work always shade bar graphs and pie charts accurately.

When you have finished, check that you have not missed a question out. Some questions are hard to find if they are on pages with a lot of graphs or maps. Make sure you have answered the questions on every page. This applies especially to questions where you are asked to complete tables, diagrams, graphs or maps.

SECTION 3: General Comments

Most candidates found this examination enabled them to demonstrate what they knew, understood and could do. The overall range of marks went from 0 to 58 out of 60 – a similar range to previous years – with weaker candidates scoring on the practical questions, such as drawing and interpreting graphs and tables, and candidates of higher ability scoring well on the more challenging sections requiring explanation and judgement especially regarding hypotheses. Most candidates answered **Questions 2** more successfully than **Question 1**.

There is less general advice to be given for areas for improvement with this paper compared with others. As there are no choices to make, it is difficult to miss sections out, although some candidates omit graph completion questions which are usually 'easier' to answer. This is an on-going problem from year to year despite it being highlighted in each report to centres. Although there were no significant reports of time issues some candidates do write too much in some sub-sections. They should be encouraged to answer more succinctly and perhaps give more thought to their answers. Most points for teachers to bear in mind when preparing candidates for future Paper 43 questions relate to misunderstanding or ignoring command words and the use of appropriate fieldwork techniques and equipment. Particular questions where candidates did not score well often related to them not carefully reading the question, for example **Question**

1(d)(iii) where candidates were asked to describe how a rain gauge would be used, rather than where it should be positioned. As in some previous papers **Question 2(b)(iii)** required candidates to describe a suitable fieldwork investigation methodology, in this case a sampling method, and **Question 2(b)(i)** required candidates to suggest the good features of a questionnaire. Such questions are frequently included on this paper and are an area which centres should practise with candidates. However, it is not good practice to develop a series of generic improvements which may apply to all fieldwork as such suggestions tend to be vague and not worth credit.

Centres need to remember that, although this is an Alternative to Coursework examination, candidates will still be expected to show that they know how fieldwork equipment is used and know appropriate fieldwork techniques even if they have only limited opportunity for fieldwork within the centre. For example **Questions 1(a)(i), 1(d)(ii)** and **1(d)(iii)** focussed on specific techniques commonly used in fieldwork. Centres are encouraged to carry out basic fieldwork with candidates, especially using simple techniques which can be done on the premises or in the local area.

SECTION 4: Comments on Specific Questions

Question 1

(a) (i)   Almost all candidates showed their knowledge of the location of weather instruments inside or outside a Stevenson Screen.

(ii)   Most candidates correctly choose barometer. The main distractor was anemometer.

(b) (i)   Most candidates gained the one mark available for this question by referring to the process being fair or reliable, or readings being consistent. Some explained that atmospheric pressure would vary during the day. Weaker candidates did not gain the mark due to reference to weather or climate varying, or occasionally, referring to another element of weather such as temperature. An incorrect answer was to state that readings would be accurate.

(ii)   Only half of the candidates knew that mb stands for millibars. Many different suggestions were made.

(iii)   Half the candidates correctly interpreted the diagram and circled 35°. Two commonly chosen distractors were 20°, the current temperature shown, and 38°, the temperature indicated by the top of the index.

(c) (i)   In common with many questions which require completion of a scatter graph there was a large number of candidates who failed to complete the graph, in this case 8%). The most common error was to misread the horizontal scale.

(ii)   Most candidates correctly suggested that the hypothesis was not correct. They supported their conclusion by suggesting that there was no correlation and illustrated this with a range of valid statistics. Weaker candidates failed to score marks because they did not include two pairs of statistics which referred to atmospheric pressure and maximum temperature.

(d) (i)   The question proved to be a good discriminator and a full range of marks were gained. Diagrams varied from those of textbook quality with full labels to others which were unrecognisable as a rain gauge. Weaker candidates just drew a container such as a beaker with graduations. Many candidates drew a recognisable rain gauge but omitted the outer casing which was a necessary component. A minority of candidates drew simple, home-made rain gauges which were acceptable. An error made by some candidates was to focus their diagram on where a rain gauge should be located.

(ii)   Most candidates showed good understanding of the siting factors. Answers usually referred to damage or interference by children, and interception by trees or their leaves. A common mistake was the idea that the rain gauge would be obscured by playground equipment. A small number of candidates wrongly suggested that it would be unsafe to be under trees during a storm.

(iii)   This question was a challenging test of knowledge which produced good differentiation. There were some excellent descriptions of the tasks to be done in a logical order. Weaker answers only

referred to measuring at the same time or measuring every day, or even after the rain had ended (which did not gain credit). Some answers only suggested 'reading the level in the rain gauge' with no explanation of how this could be done. Many candidates began their answer by describing where the rain gauge should be located and sited which was not the focus of this question. It was evident from the range of answers that some candidates had used a rain gauge whilst others had not.

(iv)   Most candidates completed the two graphs correctly. A minority plotted the atmospheric pressure cross inaccurately, either through misreading the scale or not placing it directly above the '20' figure on the horizontal axis. The most common error in plotting the bar was to draw it to 2 mm rather than 2.8 mm.

(v)   Most candidates correctly concluded that the hypothesis was correct and supported their conclusion with valid statistics from different days. Some candidates did not gain the mark for statistics because they failed to give two pairs of contrasting statistics (atmospheric pressure and rainfall).

(e)   This was the most difficult question on the paper. It was testing a new addition to the syllabus, the use of a sunshine recorder. There was a minority of comprehensive descriptions of how to use the equipment but these were outnumbered by the majority of answers which appeared to have little idea of how the equipment works. Many candidates used the photograph to try to work out how it could be used but with little success. The most common error was the assumption that the sunshine recorder works automatically with no need to insert a card or piece of paper each day to record when the sun is shining. Candidates wrote about the sun shining onto the plate or marking the plate.

Question 2

(a) (i)   A large majority of candidates chose the correct definition of renewable energy.

(ii)   Most candidates calculated correctly the percentage of electricity generated from renewable sources. Many answers were given to one or two decimal places which suggests that candidates had used a protractor to measure the degrees of the circle and then converted the measurement to a percentage.

(iii)   The pie chart was completed correctly by most candidates. As usual a significant minority scored one mark by reversing the order of the segments but accurately shading them.

(iv)   Most candidates correctly identified two changes in electricity production. Weaker answers did not include comparative words but only statistics which did not identify the change. A minority of candidates inappropriately referred to renewables rather than fossil fuels.

(b) (i)   The question achieved good differentiation and candidates who scored three marks showed good understanding which suggested that they had undertaken fieldwork using a questionnaire. These candidates included perceptive responses about the quality and breadth of the questions and how they related to the hypothesis being investigated. In contrast to these, weaker candidates focused too much on design of the questionnaire rather than its contest. Therefore they suggested reasons such as 'it fits on one page', 'it is quick and simple to do'' and 'it is easy to use', which were not acceptable.

(ii)   Most candidates were able to name one suitable sampling method. However, there were a number of incorrect methods named such as questionnaire, survey and public vote.

(iii)   Most candidates found it difficult to describe how they would use their chosen sampling technique. Some answers did not match the named technique and others were simplistic and did not suggest that they had used a sampling technique in undertaking fieldwork. Two improvements over previous examination sessions were the number of answers which included the use of random numbers and how they might be used, and the full descriptions of stratified sampling which were given.

(c) (i) Nearly all candidates identified the correct reason from the table.

(ii) The relatively simple task of plotting the bars was not attempted by 5% of the candidates. Candidates must read the question paper carefully so that they do not omit graph completion questions. Candidates who plotted the bars usually did so accurately.

(iii) The large majority of candidates correctly identified that the hypothesis was correct and most made effective use of statistics to support their conclusion. A minority failed to gain the second mark because they were too vague in their use of statistics by using a phrase such as 'over 50%' rather than giving the exact percentage.

(d) (i) The omission rate was again high at 6%. The majority of candidates who completed the divided bar did so accurately with appropriate shading to score three marks.

(ii) Nearly all candidates correctly identified the statement with the most even balance of opinions.

(iii) This was the most challenging section of **Question 2** and achieved good differentiation. To answer the question 'to what extent …' candidates needed to look for patterns and amalgamate data that supported or did not support the hypothesis. Candidates gained no credit merely for re-writing the data provided. They needed to use the data not copy it. There were many excellent responses which began with a general statement to point out the balance between positive and negative opinions, usually well supported by statistics to show the even balance of opinions. Good answers then continued to exemplify comparable data of total opinions or balancing opinions. Weaker candidates tended to pick out agreements and disagreements with particular opinions which gained limited credit. Some candidates ignored the instruction that the hypothesis was both true and false to a certain extent and concluded that the hypothesis was correct.

(e) (i) Most candidates correctly named two examples of renewable energy. Some weaker candidates suggested inappropriate ideas such as thermal, water and the sun.

(ii) The final question was challenging and again identified differences in candidates' knowledge and understanding of this key geographical concept. Good candidates scored well with explanations which included burning fossil fuels, release of carbon dioxide, build-up of the gas in the atmosphere, radiation from the sun and re-radiation from the earth, and the blocking effect of the greenhouse gases. Weak candidates focussed incorrectly on ozone depletion and a growing hole in the ozone layer which lets in more sun to heat the atmosphere. Many candidates continue to mix up the two issues.