GEOGRAPHY

Paper 0460/03
Coursework

Key messages

Although the number of entries for the coursework option is growing substantially year on year, as was the case last November, there was a relatively small entry compared with the June session. This consisted mainly, but not entirely, of Southern Hemisphere centres. Although this report includes points arising from the moderation of this series, they are equally applicable for centres that make their entries in March or in June.

General comments

All centres chose topics which were in line with the Syllabus and in most cases they had submitted a proposal to Cambridge beforehand, which had been approved. It is at this stage where advice is given, based on good practice and any potential obstacles to candidates achieving their potential can be pointed out. It was also clear that most centres had staff who had attended the appropriate training. This was reflected not only in the way the fieldwork was organised, but also in the accuracy of the marking. Most of the candidate's work therefore followed the route to geographical enquiry, although just occasionally, the studies resembled a report of a visit rather than an enquiry. It is often the case that those candidates, who undertake data collection as part of a collaborative exercise, with data being collated by the staff, often perform stronger overall, than those undertaking their field work individually or as a small group. Clearly more data can be collected in the former case which can lead to a more in depth analysis. The latter does not mean that the individual nature of the study is sacrificed since this manifests itself in the data presentation and analysis stages.

It was also pleasing that all markers as expected, applied the generic mark scheme found on page 35 of the syllabus document, rather than adapting one of their own. The Moderation process therefore went relatively smoothly. Those centres that have not already submitted proposals, or undertaken training are urged to do so if possible.

Comments overall

The range of topics continues to be very impressive. Human Geography topics were more popular than physical ones, and ranged for example, from the impact of mining in Botswana, to migration in Kenya and the characteristics of a town in Mauritius. Tourism was also popular. Physical Geography topics, among others, included the study of river characteristics in South Africa and sand dunes in Peru. All these topics yielded an appropriate amount of data.

As was stated this time last year, 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 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.*

In all cases, the correct documentation accompanied the scripts. However, it is advisable that centres check this before sending, because once again there were instances of errors in the paperwork. Sometimes there was a mathematical error in the addition of the five assessment criteria on the Coursework Assessment Summary form. There are also occasional transcription errors from the Coursework Assessment Summary form to the MS1 mark sheet.

In most cases the scripts were conscientiously marked by the centres and the order of the candidates was precise, which made the task of moderation easier. Only in a few instances did the Moderators have to adjust the marks awarded by a centre. This was often at the top end where the level 3 criteria were not met.

This was particularly the case with the analysis where explanation was limited and there was a preponderance of description. Similarly with Organisation and Presentation where one would expect an element of complexity for the top marks rather than just rely on the number of different techniques.

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.

Many thanks for those markers who made comments on the individual scripts. This greatly helps the moderation process and allows moderators to judge a script more accurately. To ensure uniformity it is best that these comments use phrases from the generic mark scheme to justify the marks awarded. These comments should be in pencil and not obscure the text.

It was pleasing to see that almost all candidates stuck to the word limit. Although at present there is no penalty for exceeding it, we would expect the word limit to be adhered to, give or take one hundred words or so. Writing well in excess of 2000 words often means that a candidate loses focus on the aims of the investigation or has attempted too many hypotheses.

Each centre will receive a coursework report which will refer to both particular strengths and weaknesses. Points that are common to several centres are reported below and are based on each of the assessment criteria in turn.

Knowledge and understanding should be assessed throughout the study and not just in the introduction. To this extent it was a little overvalued by markers. Geographical models that were described in the introduction should be a recurrent theme in both the analysis and the conclusion. However, in many cases such references were rare and were seldom linked to the findings. This particularly applied to the Butler Model, and those relating to the structure of urban areas, e.g. Hoyt's Model. Bradshaw's Model seems to be more easily applied. Many studies had clearly set out hypotheses and many included predictions/outcomes for each. The strongest studies were those that chose only two or three hypotheses. These were then dealt with in depth and were clearly linked to relevant theory. Weaker studies wrote out the hypotheses that they were given without comment. Many demonstrated their geographical knowledge by description of the study area. However, some included too much detail in their introduction which was not linked to the aims of the investigation, for instance some details about the climate or historical facts.

As in the past candidates tended to score well in the *Observation and collection of data* criterion and this was marked accurately. Stronger responses demonstrated the ability to refine the data and describe only the techniques of data collection which were relevant to their hypotheses. Collaborative data collection exercises were generally well organised and usually succeeded in collecting sufficient data to analyse in depth and use statistical testing, if desired. For instance, 40–50 questionnaire responses would be ideal, but this was not always possible if candidates are collecting data on their own or as part of a small group. River studies would ideally use 6–10 sites; this may not be possible on safety grounds which are of course, paramount. It is interesting that while each hypothesis is justified, the individual sites where fieldwork is carried out are not. Even if these are chosen by the centre, there should be comment on why they were selected. Where some parts of the data collection did not go well, a pilot study may have been beneficial. However, it is realised that some centres travelled a long distance to their study location, so this may not be possible due to cost or the constraints of the timetable. The data collection techniques are increasingly being written up by candidates in tabular form. This is to be encouraged, particularly when candidates add columns to comment on the relative merits of each method and where they went wrong or could be improved. Such tables do however, count towards the word limit. The collection of quantitative data facilitates graphical representation. There is also a place for qualitative data, e.g. from interviews; stronger studies managed to achieve a balance which still favoured the former. The inclusion of numerical secondary data, especially when a comparison with the past is required, is also a good idea if not, essential, e.g. for studies showing land-use change. However, the temptation to use a preponderance of such data at the expense of data collected by the candidates themselves should be, and on most occasions was, avoided.

Many candidates scored well on the *organisation and presentation* section of the mark scheme. Although still reliant on pie charts and pie graphs, many introduced an element of complexity which together with an appropriate range of techniques took them into Level 3 on the generic mark scheme. However, quite often the top mark for the criteria was missed. Maps for instance didn't have a scale or orientation and some graph axes had no labels. The former is particularly common when maps are downloaded from the internet and the latter when graphs are computer generated. It was however, pleasing to see some very accurate hand drawn graphs. Some individuality is important in this section; each study including the same computer generated graphs should also be avoided. Other common faults were the absence of a map to show the location of the

study sites and beach profiles or river cross-sections drawn to different scales, thus making comparison more difficult. More and more studies now integrate the graphs with the written analysis, rather than placing these together in one section entitled presentation. Many students are clearly very skilled in this area; this clearly contributes to the organisation of their study as does an index of contents. However, there were some studies where the page numbers in the index of contents did not match up with those within the study. Many candidates are keen to include photographs taken on their fieldwork visit. However, it is very important that they are both relevant and well annotated. Just like the graphs they should be integrated with the text. Occasionally, a centre sends black and white photocopies of the original scripts. Unfortunately, this does not do justice to coloured graphs and maps, for instance in some cases it was very difficult to distinguish between colours on a chloropleth map, that show up as different shades of grey. Under normal circumstances, Moderators would expect to see the original studies. Finally, for reasons given above, this criteria was sometimes a little overmarked.

The *analysis* should be the longest written section of any study, although of course, it is quality not quantity that counts. This section gave rise to the widest variation in quality. Stronger studies not only used examples from the data to prove or disprove their hypotheses, they highlighted any anomalies and gave clear and feasible explanations for each of their findings, in light of geographical theory. Where relevant, some used Spearman's rank correlation to back up their findings and confirm the degree of the relationship. Although not all used tables of significance, the technique was clearly understood. On the other hand many of the analyses were in the main, descriptive, with very little viable explanation. Any explanation was often speculative. For this criterion, on some occasions markers were rather generous, giving Level 3 for purely descriptive accounts where no reasoned explanations existed.

As was the case last November, the *conclusion and evaluation* section was generally assessed accurately. Although individual conclusions can appear after each hypothesis is discussed, many conclusion sections were rather short. Generally, candidates' statements linked back to their hypotheses well, with some stating the extent to which they agreed or disagreed. Not all findings were backed up with key (usually numerical) evidence form the data. The findings were also, not always linked back to relevant theory. The latter seemed to be more likely to occur in the physical rather than human studies. The evaluation was viewed by the Moderators as a relative strength of many studies. Some appeared in the description of the methodology, rather than following on from the conclusion. Candidates were often quite candid about what went wrong, and most backed this up with some feasible suggestions for improvements.

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 three questions, one from each section.
*   Select the three questions with care. Read all of the questions through carefully and study the resources provided with them before making a choice.
*   Answer all parts of the three chosen questions and ensure that sub questions are not missed. This particularly applies to the last part of each question that carries seven marks.
*   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 'identify', 'describe', 'explain' and 'compare'.
*   Identify the correct focus specified in the question stem – e.g. causes or consequences, problems or how they are being managed.
*   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 how to use comparative language, with statistics to support their answers, when a question requires it.
*   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 clear points that need to be made.
*   Write in detail and develop ideas in five mark and seven mark questions where development of ideas is credited.
*   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, diagrams 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.
*   Ensure that trends and patterns from graphs are qualified where required – for example, 'strong positive relationship' or 'high temperatures all year round'.
*   Be able to describe physical geography processes in a clear sequence, making appropriate use of key geographical vocabulary.
*   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. Both the syllabus document and each question identify the scale required for these.
*   Avoid writing a long introduction to any question, including unnecessary background material at the expense of addressing the main focus of it.
*   Ensure that an element of place specific detail, however, is included where required.
*   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. Continue answers on the specified continuation pages rather than elsewhere in the answer booklet.

General comments

The examination was considered to be appropriate for the age and ability range of candidates and it differentiated effectively between candidates of all ability levels. The strongest responses showed good performance across the paper and some excellent, well expressed Geography was seen. Most candidates were able to make a genuine attempt at their chosen questions. However a large proportion of weaker candidates found it difficult to interpret questions and write relevant answers. Some found the case study questions challenging and some did not attempt them at all. Candidates did seem to have sufficient time to complete the paper, however there were significant omissions from many candidates.

Most candidates followed the rubric by selecting a question from each section as required. Some rubric errors were seen and a reminder to candidates before the examination to answer one question from each section would be helpful. Some weaker candidates attempted any parts of questions that they could answer from all six questions rather than selecting one question from each section whilst some answered three questions but did not select one from each section as instructed in the rubric.

The presentation of answers from candidates was variable, though almost all were legible.

Question 1 was the most popular question in *Section A* and **Question 4** was more popular than **Question 3** in *Section B* and **Question 5** was most popular in *Section C*. There were some good answers seen to all questions, including those requiring extended writing, particularly the case studies on international migration, strategies used to reduce traffic congestion and the impacts of tourism. Stronger answers in these case studies were characterised by developed ideas with some appropriate place detail. Weaker responses tended to be generic development of ideas with little place detail to support them, whilst others just used simple, brief statements. In some cases, a significant amount of detail included by candidates was not relevant to the question being asked, especially where long introductions occupied much of the answer space. This particularly applied to **Question 4** where over long introductions focused on characteristics of deserts and their ecosystems rather than explaining why their climates are hot and dry.

Case studies require place specific information to allow access to the highest level. This requirement can vary between questions – a country (**Question 1**), a desert (**Question 4**) or an urban area (**Question 2**). 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, (such as in **Question 5**) choosing a country usually tends to be unacceptable as this is likely to be at too large a scale. An exception to this was **Question 3** where the choice of the Sahara desert, for example, was appropriate even though it is crosses several country boundaries.

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

This was a very popular question and attempted by the vast majority of candidates.

(a) (i) Responses to this question were mostly correct. However, if a candidate did answer this incorrectly, it was usually by using countries which were not in the list provided.

(ii) Many candidates were not able to describe a difference in the distribution of the population, however most were able to compare the density of the two islands.

(iii) This was generally well answered although weaker responses tended to not use direction with confidence. Most did, however, recognise the uneven nature of the distribution with most people living relatively close to the coast.

(iv) Responses to this question were very variable. Some good responses suggested valid ideas using map evidence, such as the fact that Mongolia is landlocked. Others used their knowledge of the factors affecting population density by suggesting that natural resources may be lacking resulting in little employment, or that the area may be mountainous or arid. Weaker responses were vague, many for example suggesting that people had 'migrated to China' without explaining why, whilst other incorrect responses focused wrongly on birth and death rates.

(b)(i) This differentiated well, with perceptive candidates recognising the positive relationship and identifying the anomaly. A few gained all available credit by accurately using statistics to support the points they were making.

(ii) This question differentiated effectively and there were some excellent, detailed answers seen with ideas relating to pressure on employment, health care, education, traffic management and housing being most common, some being effectively developed for further credit. In contrast significant numbers of candidates wrote vague ideas about crime, quality of life and services or did little more than state that large numbers would be 'difficult to manage' or similar.

(c) There was the full range of responses seen to this question. The majority of responses were Mexico to USA, however there were other examples taken largely from within South and Central America, such as Venezuela to Columbia, along with a few from Middle Eastern countries such as Syria to countries in Europe. Stronger answers were seen to many different case studies, however there were also large numbers of candidates who did not get beyond level 1 (3 marks) as they did not develop their ideas and/or wrote about a limited number of push and pull factors in reverse (i.e. few jobs/more jobs). Stronger responses referred to several ideas, used figures to support their answer and developed their ideas.

Question 2

Relatively few candidates answered this question and in some cases it was characterised by weaker responses or rubric error candidates – many of the stronger responses were seen for **Question 1**.

(a)(i) Many candidates answered this correctly though some reversed the order.

(ii) Most candidates correctly drew the bar for 'London' but fewer candidates successfully drew the bar for 'Lagos' for the second mark.

(iii) There were some good responses seen but these were relatively few. Most responses were vague and tended to describe urban problems in general and did not take account of the 'inequality' element of the question.

(iv) As in the previous question candidates tended to focus on general urban problems, particularly poverty, without any reference to the fact that there is a vast range of wealth and opportunity in many urban areas, thus inequality. Relevant answers tended largely to refer to skills/education and employment opportunities.

(b)(i) This was generally well-answered, especially when candidates used compass directions.

(ii) Overall this was not a well answered question. Few candidates recognised that all the ideas would have little overall impact on inequality, though they may offer solutions to some urban problems. Improving security, for example, will mainly protect rich people and property, and building housing will only help people who can afford houses, unless they are low cost or at subsidised rents. The people experiencing poverty are unlikely to have the skills to work in high technology industry so that will not help much, apart from low skill jobs such as cleaning, building or security guards. Free use of public transport may help by enabling people to travel to work but many of the really poor will not have jobs anyway. Appropriate and relevant development of ideas was not common and many candidates did little more than refer in a generic way to 'job creation'.

(c) There were a few excellent responses seen to this question where candidates knew a very good case study, often one which was local to them, enabling them to give a range of developed ideas, along with appropriate place detail. In contrast many candidates relied on a limited number of strategies, which were frequently not developed and lacked place specific information.

Question 3

This was less popular than **Question 4**.

(a)(i) Most candidates identified the correct height from Fig. 5.

(ii) The best responses used compass directions to clearly state where coral reefs and mangrove swamps were found.

(iii) This question was generally poorly answered and there were lots of vague ideas about roots, creatures and mud. Candidates need to be specific and use geographical terminology wherever possible, for example by referring to saline water (halophytes), between high and low water mark, prop, aerial and salt filtering roots, salt excreting leaves etc. General references to lots of plants and high biodiversity could be referring to many different ecosystems.

(iv) Many candidates scored well on this question and were able to identify a range of specific ideas, relating for example to depth, water clarity, sea temperature and wave action. This question demonstrated good knowledge recall by candidates, though others did little more than guess or wrote with insufficient clarity.

(b)(i) The best responses gave three specific examples of natural features from the diagram, explaining how each could help prevent erosion (e.g. mangroves reduce wave heights). Weaker responses did little more than suggest that the 'natural features' reduce erosion identifying them or explaining how.

(ii) This question differentiated well with high scoring responses showing good knowledge of a range of methods, naming each one they chose and describing it. Sea walls and groynes were popular answers, though reference to many other techniques was seen. Many weaker responses were unable to name methods and significant numbers of candidates referred to reducing pollution despite the reference to coastal erosion in the question.

(c) This question also differentiated well. Stronger responses described and explained the formation of a bay and headland coastline clearly with appropriate use of key terms, such as differential erosion, and made good use of a diagram to support their ideas. However, weaker responses made simple statements describing bays and headlands or indeed not attempting the question. A common misconception was that headlands are formed by longshore drift and that bay and headland coastlines are entirely the result of deposition.

Question 4

This question was more popular and, on the whole, was answered better than **Question 3**.

(a)(i) This was generally correctly answered.

(ii) There were mixed responses to this question. Candidates who understood that they had to identify how the climate was 'typical' of an equatorial climate generally scored well by references, for example, to hot temperatures and high rainfall throughout the year. Many weaker responses referred to temperature and rainfall without reference to 'all year', indeed some referred to seasonal differences which were not relevant (e.g. it is cooler and drier in July).

(iii) There were mixed responses to this question. Most candidates gained credit for reference to hot temperatures and stronger responses gave good explanations of the sequence of processes leading to convectional rainfall. Poor expression, simplistic answers and a lack of knowledge of key terms however limited many answers here.

(b)(i) This was generally well answered though some candidates referred to ideas which were not in the diagram, despite the clear instruction to 'use Fig. 8 only'. Other candidates identified impacts on the natural environment rather than on people.

(ii) This differentiated well and there were a number of very good responses. Generally candidates used the diagram well to make points relating to soil erosion and surface run-off. Stronger responses explained well how the basin hydrological cycle is impacted when trees are removed, resulting in flooding, however a significant number copied wording from Fig. 8 such as 'groundwater reduced by rapid surface run off' into their response without linking it to the question or showing any understanding.

(iii) Candidates showed some good knowledge of the reasons for deforestation. Common responses related to logging, settlement, agriculture and mining. There was also valid development of ideas from some candidates. Weaker responses tended to focus on a limited number of ideas or express them in a less specific way – for example, forests are cleared for 'wood'. There were some incorrect references to the forests being cleared for medicines.

(c)   A small number of candidates answered this well, developing ideas which explained why the climate is both hot and dry. Many however gave simplistic responses referring only to high temperature or low rainfall or did not read the question carefully and wrote instead about the characteristics of deserts or the adaptations of plants and/or animals.

Question 5

This was a popular question.

(a) (i)   This was usually correctly answered by candidates.

(ii)   Most candidates gained full credit.

(iii)   This was generally well answered with some clear examples of urban tourist attractions. Significant numbers of candidates, however, referred to generic tourist attractions, including scenery, whilst others wrote about how cities benefit from tourism.

(b) (i)   This was answered well, with many candidates identifying appropriate evidence from the photographs. Answers such as 'scenery', 'vegetation' and 'culture' needed to be more specific and climatic ideas were not relevant as there was no evidence in the photographs to support them.

(ii)   This question differentiated well with good understanding being shown in many answers. A range of valid references were made, some candidates developing them effectively. Common correct responses referred to loss of vegetation and habitat, with the resultant negative effect on ecosystems and loss of biodiversity. In contrast large numbers of candidates did little more than refer to 'litter' and 'pollution' without any attempt to elaborate in terms of impacts on the natural environment.

(iii)   Even weaker responses showed an understanding of the idea of 'management' and expressed some simple ideas about how litter could be reduced or areas protected, though references to 'fines' and 'educating' tourists needed a little more elaboration for credit to be awarded. Others were able to further develop their ideas by more detailed reference to strategies such as limiting tourist numbers, ensuring that tourists are accompanied by guides and developing the principles of ecotourism.

(c)   Many good case studies were used, especially within the Americas but also elsewhere in the World. Many candidates were clearly familiar with the example chosen, particularly in the case of local examples, and were thus able to include good place specific details. The question asked for an 'area' and candidates who simply named a country (unless it was very small) were unable to access full marks as a result. The most successful responses developed their ideas and attempted to provide a balance of positive and negative impacts on local people. Common positive impacts related to employment and the improvement of the infrastructure in various ways whilst negatives referred commonly to the impacts of noise and other types of disturbance on people and their cultures. As always weaker responses were simplistic (e.g. 'crime') and lacked balance, and a minority referred to the impacts on the environment rather than people.

Question 6

This was less popular than **Question 5**.

(a) (i)   This was answered correctly by almost all candidates.

(ii)   Many candidates gained full credit for correctly suggesting why their chosen activity leads to a loss of biodiversity.

(iii)   Many candidates answered this well, referring typically to the burning of fossil fuels, greenhouses gases and trapping of heat. There was however some confusion between global warming and ozone depletion.

(iv) This question differentiated well. Some candidates were familiar with the impacts of global warming on the natural environment. Some others referred to people rather than the natural environment or were not specific enough in their answers – for example referring to generic 'flooding' rather than 'flooding of low lying coasts'.

(b)(i) Many candidates found this a challenging question. The photograph showed clear evidence of soil erosion such as bare soil, gulleys and the lack of vegetation yet many candidates referred to other features such as roads which were not relevant to the question.

(ii) Some candidates successfully referred to overgrazing and/or overcultivation and the removal of vegetation covers which enables soil to be eroded by wind and rain. However many wrote about other economic activities, such as transport and extractive industry which did not enable them to show any real understanding of the causes of soil erosion. Others did realise that the wind and rain (or lack of it) were significant but did not elaborate sufficiently for credit.

(c) This case study differentiated well. Weaker responses gained credit by referring to the types of energy used within a country. Stronger responses included a range of energy types with clear detail on how the energy was provided including place specific detail. Some candidates wrote about one power station or method of supply which does limit marks as it would be unusual for all but the smallest country to gain their energy from just one source. Whilst the reference to valid statistics is appropriate, it should not be over relied on as a means of development.

GEOGRAPHY

Paper 0460/12
Paper 12

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 three questions, one from each section.
* Select the three questions with care. Read all of the questions through carefully and study the resources provided with them before making a choice.
* Answer all parts of the three chosen questions and ensure that sub questions are not missed. This particularly applies to the last part of each question that carries seven marks.
* 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 'define', 'describe', 'explain' and 'compare'.
* Identify the correct focus specified in the question stem, e.g. causes or impacts, solutions to problems or how successful they are, features of an ecosystem or conditions required for its development.
* 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 (e.g. employment structure, hierarchy of settlement). When defining words or phrases, candidates should not simply repeat a word or words as part of their definition.
* Understand how to use comparative language, with statistics to support their answers, when a question requires it.
* 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 clear points that need to be made.
* Write in detail and develop ideas in five mark and seven mark questions where development of ideas is credited.
* 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, diagrams 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.
* Ensure that trends and patterns from graphs are qualified where required – for example, 'rapid decline' or 'fluctuating amounts'.
* Be able to describe physical geography processes in a clear sequence, making appropriate use of key geographical vocabulary.
* 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. Both the syllabus document and each question identify the scale required for these.
* Avoid writing a long introduction to any question, including unnecessary background material at the expense of addressing the main focus of it.
* Ensure that an element of place specific detail, however, is included where required.
* 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. Continue answers on the specified continuation pages rather than elsewhere in the answer booklet.

General comments

The examination was considered to be appropriate for the age and ability range of candidates and it differentiated effectively between candidates of all ability levels. The most able and well prepared candidates performed well across the paper and some excellent, well expressed Geography was seen. Most candidates were able to make a genuine attempt at their chosen questions. However, a large proportion of weaker candidates found it difficult to interpret questions and write relevant answers. Some found the case study questions challenging and some did not attempt them at all. Candidates did seem to have sufficient time to complete the paper, however there were significant omissions from some candidates.

Most candidates followed the rubric by selecting a question from each section as required. However, some rubric errors were seen and a reminder to candidates before the examination to answer one question from each section would be helpful. Some weaker candidates attempted any parts of questions that they could answer from all six questions rather than selecting one question from each section whilst some answered three questions but did not select one from each section as instructed in the rubric.

The presentation of answers from candidates was variable, though almost all were legible.

Questions 1, **3** and **6** were the most popular questions on the paper however there were some good answers seen to all questions, including those requiring extended writing. This particularly applies to the case studies on population policy, hazards created by a volcano, why people live in a coastal area and the impacts of a transnational corporation. Stronger responses in these case studies were characterised by developed ideas with some appropriate place detail. Weaker responses tended to be generic development of ideas with little place detail to support them, while others just used simple, brief statements. In some cases, a significant amount of detail included by candidates was not relevant to the question being asked, especially where long introductions occupied much of the answer space. This particularly applied to **Question 6** where over long introductions focused on general information about the chosen agricultural area rather than explaining how the land use is influenced by natural factors.

Case studies require place specific information to allow access to the highest level. This requirement can vary between questions –a country (**Question 1**), a volcano (**Question 3**) or a town or city (**Question 2**). Some candidates do not carefully consider their choice, limiting the credit their response can be awarded through inappropriate choices, for example, choosing a country rather than an urban area or vice versa, or naming a country rather than a volcano. Where an 'area' is required, (such as in **Question 4** and **Question 6**) choosing a country usually tends to be unacceptable as this is likely to be at 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

This was a popular question and attempted by many candidates.

(a) (i) Most candidates defined the term using a variety of acceptable ways.

(ii) Nearly all candidates correctly calculated the natural population growth rate correctly.

(iii) Most correct answers included ideas such as low birth rates, contraception, education about and availability of family planning, working women and attitudes to family size. A common misconception was to attribute population decline to reasons which cause high death rates in LEDCs. The Hungary birth and death rates in Fig. 1 clearly indicate that is not the case.

(b) (i) Most candidates recognised the more rapid fall in infant mortality rates in Bangladesh and many referred to the fact that Bangladesh had the higher rates before 1991 and Pakistan after 1991. Many accurately used statistics to show comparison though some listed statistics with little or no interpretation. Candidates should be aware that some degree of precision is required in response so statements such as 'Pakistan was just below 60 in 2015' are not applicable. The use of descriptive terms such as 'the infant mortality rate of Pakistan was halved between 1980 and 2015' is acceptable as it is regarded as interpretation.

(ii) There were many good answers which included four ideas and gained full credit. Some responses did not show an understanding of the word 'mortality' and wrote about the reasons for high birth rates.

(iii) This question differentiated effectively and there were some excellent, detailed answers seen with ideas relating to families having many children to replace those who die, for children to work on the farm or earn money in some other way, and take care of their parents in old age. A common error was for candidates to focus on other reasons for high birth rates, such as lack of contraception, missing the significance of 'high infant mortality' in the question.

(c) There was the full range of responses seen to this question. The majority of responses were about China, however, there were other examples such as Singapore, France and Russia. Good answers were seen to all chosen case studies, however there were also large numbers of candidates who did not get beyond level 1 as they did not develop their ideas and/or wrote about a limited number of ideas. Stronger responses referred to several ideas (e.g. incentives/rewards, punishments/threats and exceptions as appropriate) and developed their ideas. Some candidates described the consequences of the policy which was not required, indeed some focussed entirely on an evaluation rather than including any description and gained little or no credit.

Question 2

Relatively few candidates answered this question and in some cases it was answered by weaker candidates or rubric error candidates – many of the well prepared candidates opted for **Question 1**.

(a) (i) The majority of responses to this question were weak. The most common answers referring to a village or small population rather than defining the word 'rural' by reference to the countryside.

(ii) While there were some valid observations many simply gave value judgements about the settlement rather than describing the characteristics of the houses. The most common correct observations were that the houses shown were small or single storey.

(iii) A few candidates referred to the base of the pyramid, however few other valid ideas were seen and it would appear that many of the candidates were not familiar with the concept of a settlement hierarchy

(iv) This question was answered strongly by the majority of candidates. Some candidates did repeat rural push and urban pull factors – for example, lack of jobs in the rural area and more jobs in the urban area. Some candidates made quite vague reference to ideas such as quality of life, standard of living, services, and opportunities without giving more specific detail about these ideas – for example, better education or more access to healthcare.

(b) (i) Most candidates correctly identified the settlement patterns.

(ii) This differentiated well with most candidates at least recognising the influences on settlement shown in the maps whilst more perceptive candidates were able to fully explain the reasons for the settlement patterns.

(c) There were a few excellent responses seen to this question where responses focused on a good case study, often one which was local to them, enabling them to give a range of developed ideas, along with appropriate place detail. In contrast many candidates wrote simply about migration into the city and included little detail, other than reference to employment.

Question 3

This was much more popular and, generally, was answered better than **Question 4**.

(a) (i) There were a number of accurate definitions however some candidates did not include the idea of the focus being 'below the surface/underground' thus not making clear the difference between the focus and the epicentre.

(ii) While most answers were correct, there was a variety of incorrect responses for both depth and strength, suggesting perhaps that candidates were not able to use the latitude and longitude coordinates. A few candidates gave single figure answers rather than the range shown by the key.

(iii)   This was generally answered well with responses contrasting the number of earthquakes and depth of foci, often through statistics. Also, many recognised the similarity in strength, again often in data form.

(iv)   Many candidates correctly referred to the importance of New Zealand's location at the plate boundary and the relative movements of the plates. Fewer candidates elaborated to gain further marks by referring to the sequence of processes which result in earthquakes.

(b)(i)   Most candidates made the decision that to some extent the statement was true, many also recognised the fluctuating pattern or described increases and decreases over time. However, many candidates did not differentiate between the 6–6.9 and the 7.0+ categories and so could not gain credit for statistics.

(ii)   This question differentiated well with high scoring responses showing good knowledge of a familiar topic. Many referred to ideas about soil fertility, jobs in tourism, family, emotional ties, extractive industry and geothermal power. Some weaker responses did not develop ideas of 'minerals' and 'tourism' sufficiently to gain credit.

(c)   This question also differentiated well and some high quality responses were seen. Many different volcanoes were chosen as the case study with Mount St. Helens, Etna and Pinatubo being particularly popular choices. Some candidates went into detail about a single hazard rather than a range of hazards, however, the most effective answers developed their ideas by linking the stated hazards to their specific effects. A few candidates incorrectly focussed on an earthquake but gained level one credit for common effects. Others limited their mark by naming a country rather than a volcano as required.

Question 4

This question was far less popular than **Question 3**.

(a)(i)   This was generally correctly answered.

(ii)   Candidates who interpreted the map well typically gained credit for describing the distribution as 'near the coast' and in the 'south of the country'. Weaker responses struggled to make any valid descriptive points and very few used the latitude or longitude lines effectively in their descriptions.

(iii)   Responses to this question were generally weak and there were lots of vague ideas about roots, creatures and mud. Candidates need to be specific and use geographical terminology wherever possible, for example by referring to saline water (halophytes), between high and low water mark, prop, aerial and salt filtering roots, salt excreting leaves, etc. General references to lots of plants and high biodiversity could be referring to many different ecosystems.

(iv)   Many candidates scored well on this question and were able to identify a range of specific ideas, relating for example to depth, water clarity, sea temperature and wave action. This question demonstrated good knowledge recall by well-prepared candidates, though others did little more than guess or wrote with insufficient clarity.

(b)(i)   Answers varied in quality and accuracy. The main correct ideas seen were soft rock, slumping, the lack of protection against waves and a lack of vegetation to consolidate the cliff. A common misconception was that wind erosion was an important factor.

(ii)   This was another good discriminating question. While all options were selected Option C was the most common choice, and candidates typically explained that it would be strong and resistant to erosion, and therefore long-lasting. The highest quality answers also justified their choice by explaining why they had rejected the other two options, considering the disadvantages of each of them.

(c)   Candidates chose many different examples, some being local ones which enabled them to include place detail with confidence. While there were some excellent wide ranging responses weaker candidates simply focussed their answer on tourism with little development of ideas such as industry, port or fishing. As in **Question 3(c)** some limited their mark by naming an entire country rather than an area of coastline.

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Question 5

This was not as popular as **Question 6**.

(a) (i) Many candidates plotted the employment structure correctly though some made the error of plotting three separate points on the three axes. There were also a significant number who omitted the question.

(ii) Although most answers were correct a significant number mixed up photographs D and F.

(iii) While there were some high quality responses many candidates did not answer this comparison question well. Many made statements or gave statistics which were not by themselves comparable and left it to the examiner to draw them together and make the necessary comparison. Many candidates just used statistics in their answer rather than using comparative terms, such as 'more' or 'less'. This approach was acceptable if the statistics were comparable and within the relevant tolerance, however many candidates were not sufficiently accurate, e.g. 'secondary and tertiary in LEDCs about 10 per cent'.

(iv) Most candidates suggested one or two reasons, typically relating to education and mechanisation. More perceptive candidates referred to other ideas, such as the availability of resources and demand for services, whilst some weaker candidates did little more than describe the difference in employment structure or give examples of jobs within different sectors in LEDCs and MEDCs.

(b) (i) Many candidates gained one mark for the idea of worldwide spread of factories, sales offices or raw materials. Some candidates also realised that the headquarters are in Europe, but many just named the country. Most candidates gave a list of countries providing raw materials thus not demonstrating an understanding that they are obtained from LEDCs while the headquarters are in an MEDC.

(ii) This question differentiated well and some excellent, sophisticated responses were seen with developed ideas. Many focussed on just one or two reasons such as to gain new markets, improved transport and advances in information technology. Some candidates continued to focus on Ferrero, or wrote about the effects of globalisation rather than why it has occurred.

(c) Many candidates gave an appropriate example, most commonly Nike or Toyota, though many other examples were seen. There were some very high quality, balanced answers. The most common ideas related to jobs and exploitation. Weaker answers lacked detail of the benefits or disadvantages and focussed on one or the other. Some responses focussed incorrectly on the benefits and disadvantages caused by the product being manufactured or sold.

Question 6

This was more popular than **Question 5**.

(a) (i) Most candidates defined the term correctly using a variety of acceptable ways.

(ii) Most answers were correct.

(iii) Many candidates answered this well, recognising three raw materials (e.g. shrimps, cattle, sugar cane) and the appropriate processing industries which were located nearby. However, there many irrelevant references to power generation and shipbuilding.

(iv) This question differentiated well. Many candidates suggested valid factors, with access to the market, labour supplies and land availability being most common. Transport and water were suggested by many candidates but these were sometimes too vague to earn credit. Some candidates put an incorrect focus on factors which are likely to affect farming in Panama, rather than industrial location.

(b) (i) Many candidates stated three correct ideas, however, some gave examples of specific raw materials or 'human, physical and economic inputs' rather than 'types' of input.

(ii) This question enabled good discrimination, most candidates at least were able to name an output of a manufacturing industry but many others showed good knowledge of a sequence of processes within their chosen industry. Many of the best answers focussed on car assembly, food production and iron and steel though many other types of manufacturing were used successfully. Some candidates started their answer by naming 'agriculture' rather than a type of manufacturing industry. Some continued with this theme and gained no marks, but others developed their answer into processing the farm products to gain some credit.

(c) This case study differentiated well. Many areas were named but a lot of the examples were of countries which limited the maximum mark which could be scored. Many better answers focussed on a clear example of a specific agricultural land use, such as rice farming alongside the Ganges, and referred to natural factors such as aspects of the monsoon climate, silt deposition and gentle relief which encourage that land use. Weaker answers were generally vague and lacking in detail. Many referred to relevant ideas, such as rainfall, temperatures and soil fertility, but did not link these factors to a specific crop or type of livestock. Some candidates described farm processes but did not link them to the natural factors, whilst others wrote about how natural hazards influence farmers.

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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 three questions, one from each section.
* Select the three questions with care. Read all of the questions through carefully and study the resources provided with them before making a choice.
* Answer all parts of the three chosen questions and ensure that sub questions are not missed. This particularly applies to the last part of each question that carries seven marks.
* 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 'identify', 'describe', 'explain' and 'compare'.
* Identify the correct focus specified in the question stem – e.g. causes or consequences, problems or how they are being managed.
* 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 how to use comparative language, with statistics to support their answers, when a question requires it.
* 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 clear points that need to be made.
* Write in detail and develop ideas in 5 mark and 7 mark questions where development of ideas is credited.
* 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, diagrams 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.
* Ensure that trends from graphs are qualified where required – for example, 'rapid increase' or 'slow growth'.
* Be able to describe physical geography processes in a clear sequence, making appropriate use of key geographical vocabulary.
* 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. Both the syllabus document and each question identify the scale required for these.
* Avoid writing a long introduction to any question, including unnecessary background material at the expense of addressing the main focus of it.
* Ensure that an element of place specific detail, however, is included where required.
* 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. Continue answers on the specified continuation pages rather than elsewhere in the answer booklet.

General Comments

The examination was considered to be appropriate for the age and ability range of candidates and it differentiated effectively between candidates of all ability levels. The strongest responses showed good performance across the paper and some excellent, well expressed and detailed Geography was seen. Most candidates were able to make a genuine attempt at their chosen questions. However, weaker candidates found it difficult to interpret questions and write relevant answers. Some found the case study questions challenging and some did not attempt them at all. Candidates seemed to have sufficient time to complete the paper.

Most candidates followed the rubric by selecting a question from each section as required. A few rubric errors were still seen and a reminder to candidates before the examination to answer one question from each section would be helpful. Some weaker candidates attempted any parts of questions that they could answer from all six questions rather than selecting one question from each section whilst a few answered three questions but did not select one from each section as instructed in the rubric.

Question 1 was the most popular question in *Section A* and very few candidates attempted **Question 2**. **Question 4** seemed more popular than **Question 3** in *Section B*. There seemed to be more of a balance in the questions answered in *Section C*. There were good answers seen to all questions, including those requiring extended writing, particularly the case studies on over-population, characteristics of a desert ecosystem and energy in a country. High quality answers in these case studies were characterised by developed ideas with some appropriate place detail. Weaker responses tended to be generic development of ideas with little place detail to support them, whilst others just used simple, brief statements. In some cases, a significant amount of detail included by candidates was not relevant to the question being asked, especially where long introductions occupied much of the answer space. This particularly applied to **Question 6** where over long introductions focused on problems caused by rather than management of the chosen economic activity.

Case studies require place specific information to allow access to the highest level. This requirement can vary between questions – a country (**Question 1**), a desert (**Question 4**) or an area (**Question 6**). Careful consideration needs to be given to this, as an inappropriate choice could limit the credit given, for example, choosing a country rather than an area or vice versa. Where an 'area' is required, (such as in **Question 6**) choosing a country usually tends to be unacceptable as this is likely to be at 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

This was a very popular question and attempted by the vast majority of candidates.

(a) (i)   This was mostly correct. However, if a candidate did answer this incorrectly, it was usually by giving the first or third option.

(ii)   This was generally well answered and most candidates were able to score at least half of the available credit. The focus of the question was about the population structure – common incorrect approaches were to write about the shape of the pyramid or birth and/or death rates.

(iii)   This was well answered with many accessing several of the mark scheme points. The most common answers were clearly explained references to contraception; modern attitudes to family size, the role of women and careers.

(iv)   Responses to this question were very variable. The question required candidates to make comparison between MEDCs and LEDCs and this was not always evident in responses. Sometimes, candidates did compare but did so within a country rather than between countries. There were incorrect references to shape, birth and death rates as well as a focus on explanation rather than description. Where candidates did compare effectively, most gained credit by references to young dependents, economically active and old dependents.

(b)(i) The majority of candidates answered this well. Many gained maximum credit and there were accurate descriptions of trends and appropriate use of statistics. Where candidates lost credit, it was usually for the fact that 'increase' was not qualified.

(ii) This question was generally well answered and there were some excellent, well detailed responses seen. Most candidates focused on the problems of increased old dependents rather than the implications of a reduced young dependent population. Occasionally, some answers focused incorrectly on the implications of a rising young dependent population, where candidates had either misunderstood the question or the patterns on the graph.

(c) There was the full range of responses seen to this question. There were some very good responses seen here with clear development of the consequences of over-population including clear place specific detail. Weaker candidates tended to make simple, generic points usually relating to problems such as a lack of jobs, shortage of housing and poverty. Some candidates focused on China and the measures taken to control population rather than the issues that faced China before the One Child Policy was introduced.

Question 2

Very few candidates answered this question. In many cases it tended to be characterised by weaker responses or rubric error candidates.

(a)(i) Almost all candidates answered this correctly.

(ii) Most candidates correctly identified 'Brazil' for the first answer but fewer candidates successfully identified 'Angola'.

(iii) Most responses tended to describe urban areas in general and did not take account of the 'high order' element of the question. Answers would have also been improved by the use of relevant terms such as high order, comparison goods, specialist goods, sphere of influence etc.

(iv) This question was answered very well with some excellent responses seen. Some candidates did repeat rural push and urban pull factors – for example, lack of jobs in the rural area and more jobs in the urban area. Some candidates made quite vague reference ideas such as quality of life, standard of living, services, and opportunities without giving more specific detail about these ideas – for example, better education or more access to healthcare.

(b)(i) This question was not well answered and it seemed that there was confusion about the meaning of the key terms in this question.

(ii) This was not well answered. The most common points made related to frequency of use or the order of the goods/services provided. Whilst a range of mark scheme answers were seen, it was common for most responses to just focus on one or two ideas. Appropriate development of ideas was not common.

(c) There were a few excellent responses seen to this question where candidates clearly understood the concept of a hierarchy and gave a detailed description of a range of settlements and their services within a country or area. These answers also included appropriate place specific detail, often making use of the candidate's own country. However, these were not common. As many weaker responses were seen to **Question 2** there were also some far less detailed responses seen where the focus was just on one city rather than a range of settlements within a country or area. An understanding of the concept of hierarchy was not seen in many responses and this limited the amount of credit gained. Often, the link between the size of the settlement and the services provided was not made clear.

Question 3

This was less popular than **Question 4**.

(a)(i) Answers were very variable. There were some accurate definitions seen in the strongest responses.

(ii)   Responses to this question were very mixed. The strongest candidates were able to correctly identify and name the features from the diagram. However, a significant number of candidates were not able to accurately name the features or use key terms correctly – for example, using 'boundary' rather than 'watershed'.

(iii) This question was poorly answered. There seemed to be confusion about the Torreon Wash and Lower Rio Puerco, often without realisation that the Lower Rio Puerco drained the entire river basin. More careful use of the source material provided would improve the accuracy of responses. Correct ideas from the mark scheme were seen, as were answers that made comparison as required, but these were not typical.

(iv)   Candidates generally scored well on this question and were able to identify a range of strategies to reduce river flooding. This question demonstrated good knowledge recall by most candidates.

(b)(i) This question differentiated well. There were some very good answers which made clear use of the photograph. Weaker responses tended to miss the link to the features being typical of a river 'near its source' and described what they saw irrespective of the relevance of their ideas. Some candidates lost credit by making reference to the speed of flow which cannot be judged from a photograph.

(ii)   This was generally not well answered. Many answers tended to concentrate on changes to the river channel itself rather than the long profile or cross section as the question required. There were some good answers seen that related to the cross section of the valley but changes in the long profile of the river were less well known by candidates of all abilities.

(c)   This question differentiated well. Stronger responses described and explained the formation of a delta clearly with appropriate use of key terms and made good use of a diagram to support their ideas. However, weaker responses found this question more challenging, either making simple statements describing the delta, not scoring at all or indeed not attempting the question.

Question 4

This question was more popular and, on the whole, was answered better than **Question 3**.

(a)(i) This was generally well answered by most candidates.

(ii)   There were mixed responses to this question. Candidates who understood they key term correctly calculated the annual temperature range and gained full credit. However, some candidates were confused and calculated an average (mean) temperature for the year rather than working out the range.

(iii) There were mixed responses to this question. Most candidates gained credit for a reference to being at the Equator. Poor expression, simplistic answers and a lack of knowledge of key terms often limited answers here.

(iv)   This was better answered than the previous question with several responses being awarded full credit. The best answers linked the stages of the water cycle well to high temperatures to explain the causes of convectional rainfall and made appropriate use of key terms.

(b)(i) This was generally well answered. Many candidates used the diagram well to make points relating to loss of species, lack of food and loss of habitat. Weaker responses sometimes used the word 'affects' without being specific about how it affects the ecosystem and therefore lost marks. There were some references to ideas not on the diagram where candidates had not followed the instruction 'using Figure 6 only'.

(ii)   Candidates showed some good knowledge of the reasons for deforestation. Common responses related to logging, settlement, agriculture and mining. There was also valid development of ideas from some candidates. Weaker responses tended to focus on a limited number of ideas or express them in a less specific way – for example, forests are cleared for 'wood'. There were some incorrect references to the forests being cleared for medicines.

(c)   There were some excellent answers here that showed very good knowledge of the characteristics of a named desert ecosystem. The Sahara Desert was the most commonly used example,

however there were sometimes incorrect references to The Sahel as an example. Place specific detail was sometimes included and many responses reached Level 2. Most answers tended to focus on vegetation and there were some very good explanations of adaptations seen. Answers could be improved by ensuring that candidates focus on more than one element of the ecosystem – for example, climate and wildlife as well as vegetation. This was probably the best answered of the case study questions.

Question 5

(a) (i)   This was usually correctly answered by candidates.

(ii)   Most candidates gained full credit on this question.

(iii)   This was generally well answered with some clear examples of how to increase supplies of clean drinking water. Most candidates gained credit for ideas relating to purifying water or ways of increasing storage such as dams/reservoirs.

(iv)   There were some very good responses seen here that made reference to the full range of mark scheme ideas. Most candidates were able to achieve some success on this question by reference to preventing disease, improving life expectancy and water being essential for survival. There were some answers that did not focus on 'drinking water' and therefore made irrelevant reference to ideas such as irrigating crops.

(b) (i)   Most candidates scored well on this question. However, answers could be improved by ensuring that candidates compare and that supporting statistics given are accurate.

(ii)   This question differentiated well. Weaker responses showed an understanding that agriculture and industry varied in importance between the two countries and this was reflected in their water use. Others were able to further develop these ideas by reference to the use of water for irrigation or for manufacturing processes. The very best answers then went on to explain the differences in domestic use and link this either to supply or to the affluence by a reference to appliances used within the home.

(c)   This question was generally well answered. Weaker candidates were able to gain credit by referring to the types of energy used within a country. The better answers included a range of energy types with clear detail on how the energy was provided including place specific detail. Some candidates just wrote about one power station or method of supply which does limit marks as it would be unusual for all but the smallest country to gain their energy from just one source. Whilst the reference to valid statistics is appropriate, it should not be over relied on as a means of development.

Question 6

(a) (i)   This was answered correctly by almost all candidates.

(ii)   Most candidates gained credit for correctly identifying one or two causes of pollution from Figure 9.

(iii)   Most candidates answered this well and many were awarded full credit. Good use was made of the source material provided.

(iv)   Responses to this question were variable. Most candidates scored credit for ideas relating to the employment created by the gold industry and the cost of solutions. All mark scheme points were seen across the full range of answers with the strongest responses also making reference to ideas such as corruption.

(b) (i)   This was generally well answered showing good understanding of the diagram.

(ii)   This question was well answered with some good development of ideas seen. Candidates seemed well prepared for this question and were familiar with the impacts of global warming on the natural environment. Some answers could be improved by candidates being more specific in their answers – for example, 'flooding of low lying coasts' rather than just a reference to generic flooding.

(c)   Generally this was not as well answered as the other case study questions. Often there were over long introduction about the nature of the economic activity and the impact that it has had rather than a focus on the strategies being used to manage the activity. There were, however, some very good answers seen with use of an appropriate case study – for example, the management of tourism and deforestation.

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Paper 21
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Key messages

*   Generally, candidates made good use of the data resources provided and studied them carefully before responding.
*   The best answers were usually focused on the questions asked and were concise.
*   Where only one or two lines are provided for an answer, candidates should respond briefly and to the point. Long answers rewording the question should be avoided.
*   Candidates should avoid copying out figures or information from the resources in their answers as these rarely score marks without interpretation.

General comments

Most candidates answered the questions within the spaces provided and avoided the use of additional sheets. Questions which required a longer response were generally well written. Almost all candidates were able to complete the paper in the allotted time.

Comments on specific questions

Question 1

(a)   Most candidates scored high marks in this section and made careful reference to the map key. In part **(iv)**, some candidates failed to include the units (metres) in their answers. Almost all attempted part **(vii)** but only a few recognised the feature as a delta.

(b)   Candidates offered the full range of possible answers. In a question such as this, greatest accuracy was usually achieved by comparing the distance with the scale line rather than performing a mathematical calculation.

(c)   Many candidates noted that the railway *followed the lake side* and *crossed the lake on a bridge*. Few identified the *tunnel* close to Bulken or that the railway *stayed on low or flat land*.

(d)   Many candidates understood the meaning of *relief* and made a good attempt at this question, although a few extended their answers to include drainage and land use which did not gain credit. Many referred to the *mountainous* and *steep* land reaching *1103 m* and some recognised the '*double summit*'. Only a few spotted the *V-shaped valley* and the *spur*.

(e)   Candidates found this section more difficult and some did not appreciate that the question referred to the whole map extract. The best answers made general comments backed up with evidence from the map, noting, for example, that the cultivation was on *low* and *gentle* land, mainly *in the south*, *near the lake* and *below 400 m*. Forest was on *high*, *steep* land and *below 800 m*, *avoiding the summits*. As the command word was *describe*, no explanation was necessary.

Question 2

(a)   Most candidates were familiar with population pyramids and gained full credit.

(b)   In part **(i)** many candidates recognised that the proportion of those aged 0–14 was higher in Angola. Some candidates compared the actual numbers rather than the proportions and gave an

incorrect answer. In part **(ii)** almost all candidates recognised the higher proportion of those aged 65+ in Japan.

(c)   In part **(i)** there were some very good responses with many candidates recognising the contrast between the ageing population and the shrinking young and middle age groups. In part **(ii)** there were some valid suggestions made, especially focusing on the reduction of the workforce and increasing costs of pensions, care and medical costs. Answers which did not gain credit were often too vague or were a statement of a change rather than an actual problem of the change. Some suggested solutions to problems, which could not be credited.

Question 3

(a)   Most candidates showed a clear understanding of plate tectonics and selected most of the correct answers in this section.

(b)   Most candidates made good use of Fig. 6 although the majority received credit only for reference to the colliding plates or destructive margin. Few responses included mention of pressure, friction or faulting.

(c)   Candidates recognised the relationship between the intensity of damage and the location of the epicentre but few offered any further suggestions. Of these, the majority correctly related the severity of intensity in Kathmandu to the greater number of buildings and/or higher population density.

Question 4

(a)   Some candidates had good knowledge of weather instruments and scored well although in contrast there were many candidates who left parts of this question unanswered. There was a range of different answers in part **(i)** where *Stevenson screen* was required. In part **(iv)**, the *anemometer* was frequently misspelt, although a range of spellings were credited. There was some confusion about its use in part **(v)** but the majority correctly identified wind speed rather than direction.

(b)   In part **(i)** the best answers focussed on the automatic nature of data collection, with signals being sent to a computer elsewhere. Some candidates discussed the use of wind measuring devices, but without reference to the digital nature of the weather station, they did not score. In part **(ii)** amidst many vague answers which did not score**,** some candidates made the connection between the presence of the building or tree causing shade or shelter and thus affecting the results.

Question 5

(a)   Many candidates struggled with this section and were unable to complete all the pairings correctly. Most recognised mining as a primary activity.

(b)   By contrast, responses to the changing employment graph (Fig. 8) were generally excellent if occasionally too long and repetitive. Candidates, however, often tried to explain the changes as well but this was not required and did not gain further credit.

(c)   Almost all candidates recognised that Country **X** was Stage 2 and Country **Y** was Stage 1.

Question 6

(a)   In part **(i)** almost all candidates recognised that the numbers of under-nourished people had reduced. Many interpreted the information given in Table 1 well and backed up their answer with relevant statistics, such as that the reduction was 204 million in the LEDCs and 5 million in the MEDCs. Most candidates found part **(ii)** difficult. The stronger responses concentrated on identifying the general patterns identified in the table, including the contrast between the greater food shortages in the LEDCs compared with the MEDCs as well as the more specific points, such as that Asia had the most food shortages but is improving whilst the problem continues to worsen in Africa. Some candidates quoted data from the table without interpreting the meaning of it, gaining little credit.

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(b)   In part **(i)** a full range of answers was given with only a few recognising both *arable* and *intensive* as the correct responses. In part **(ii)** most candidates made reference to Photograph **C** and identified that cultivation could be extended to areas including the hills and woodland areas**.** Many further relevant suggestions were made including introducing pastoral farming, diversifying crops, increasing intensity and using irrigation, fertilisers, pesticides and new crop varieties. There were many good responses given which gained full credit.

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Key messages

- Section 2.5 of the syllabus requires candidates to be able to explain the characteristics of the hot desert and equatorial climates. Candidates could often describe these climates but were unable to give reasons for the characteristics
- Some candidates were unable to describe distributions shown by isoline maps. This is commented on further in **Question 6** below
- When giving figures in answers (e.g. altitudes, distances, temperatures) candidates should always quote the correct units. This was not always evident in **Questions 1** and **Question 6**
- Since 2016 candidates have been expected to be able to complete cross sections from contour maps. Many candidates found this skill difficult in **Question 1**

General comments

Candidates generally performed very well on **Questions 1** and **2**. The photograph question proved to be difficult to many candidates. Candidates found **Questions 4**, **5** and **6** difficult and comments on these questions are given later in this report.

Comments on specific questions

Question 1

(a) Candidates generally identified feature **A** as a *marked footpath* and river **B** as the *Tomasgrovi*. The height above sea level at spot height **C** was usually described as *916 m* but many candidates found it more difficult to give the height above sea level of the contour at **D**. The correct answer was *600 m*, although some candidates answered *009 m*.

(b) Many candidates gained full credit on this part of the question. There was no particular pattern to the incorrect answers.

(c) Most candidates correctly identified the river at **A** as the *Roesgrovi* but many found the other parts of the question more difficult. Feature **B** was a *road* and the type of land use at **C** was *cultivation*. Only a minority of candidates were able to complete the cross section correctly. Examiners accepted answers where the valley had been completed more steeply than the rest of the slopes but not dropping down below 200 m. Some candidates simply joined the two parts of the cross section with a straight line while others showed the land rising between the two parts instead of falling.

(d) Most candidates gave the correct compass direction as either *south east* or *east-south east*. Measuring the distance proved more difficult and examiners accepted answers between *1550 m* and *1750 m* or the equivalent in kilometres. Some candidates failed to give any units for the distance. The better candidates were able to give the correct height difference of *568 m*.

(e) Most candidates were able to give some relevant description of the distribution of farms and houses and the stronger responses were awarded full credit. There was a tendency for candidates to concentrate on the human aspect of the distribution, noting points such as the houses and farms on cultivated land and in a linear pattern along roads. Candidates also noted the concentration in the north and in the centre of the map. Fewer candidates referred to the physical features of the distribution such as the concentration in valleys, on gentle slopes or on the lower ground.

Question 2

(a)   This was generally well answered with candidates showing good skills in extracting the correct information from Fig. 4.

(b)   When comparing the eastern urban areas with western urban areas, almost all candidates understood that San Francisco-Oakland-Hayward and Denver-Aurora-Lakewood were in the west and that Chicago-Naperville-Elgin and New York-Newark-Jersey City were in the east. Many were able to see that, through internal migration, the west had gained population and the east had lost population. This showed a good understanding of positive and negative migration. Examiners also gave credit to those candidates who said that there was more migration in the east than in the west. Some candidates confused this point, thinking that –534 737 in the east and +110 408 in the west indicated more migration in the west.

(c)   Many candidates noted that Chicago-Naperville-Elgin had lost population due to *internal* migration but that there had been an overall gain in population because of *international* migration.

Question 3

Many candidates found it difficult to describe the river valleys shown in the photograph. Rather than describing what they could see in the photograph, it was common for candidates to give the descriptions of upper, middle and lower course valleys that they had learned in class, which could not gain credit. It was also common for candidates to describe features of the river rather than the valleys.

Examiners credited a wide range of possible points. Those most commonly given included *steep slopes*, *V-shaped valleys*, *meandering valleys*, *grass* or *scrub*, *bare rock* or *rocks* and *interlocking spurs*. Less commonly, candidates referred to *ridges*, *narrow valleys* or *gorges*, *steep long profile*, *many valleys*, *tributary valleys*, *dendritic pattern*, *cliffs*, and the *upper course*.

Question 4

(a)   Reading the January temperature of 13 °C on **Fig. 5** proved difficult for some candidates. Subtracting this from the July temperature of 36 °C to get an annual range of 23 °C proved equally difficult. Examiners carried forward errors in part **(i)** to mark part **(ii)**, therefore avoiding the possibility of a double penalty for getting part **(i)** wrong.

(b)   The annual rainfall shown on **Fig. 5** was 17 mm. A minority of answers were correct, possibly because candidates used the temperature scale rather than the rainfall scale.

(c)   **Fig. 5** showed a desert climate, one of the two climates listed in the syllabus. The temperature graph indicated a place in the northern hemisphere which was intended to indicate that this must be location **X** on **Fig. 6**. There were many incorrect answers.

(d)   The reasons why any place is hotter in summer than in winter relate to the height of the sun in the sky and the length of day and night but few candidates realised this. Some said that the sun would be overhead in summer at the equator.

(e)   The reasons for the low rainfall of the hot desert climate shown in **Fig. 5** could have included factors such as *high pressure*, *descending air*, *offshore winds*, and *distance from the sea*. Very few marks were scored. A common misconception was that the lake of rainfall was caused by the dry landscape and lack of vegetation.

Question 5

(a)   Very few candidates were able to give definitions of drainage basin and watershed.

        Candidates generally recognised that the Ural, Ili and Syrdarya rivers had their sources outside Kazakhstan and their mouths within Kazakhstan, and that the Nura River was entirely within Kazakhstan.

(b)   In giving evidence which suggested that the Irtysh River might provide the most reliable water supply for Kazakhstan, many candidates gained credit marks for noting that it had the highest overall discharge of any of the rivers and that it had the largest flow in dry years. Fewer candidates

noted that Irtysh was less reliant on flow from other countries and that it had a lake or reservoir for water storage. Occasionally candidates gave statistics from **Fig. 8** without any interpretation and failed to gain marks.

Question 6

(a)   For the description of the distribution of solar radiation in South Africa, examiners accepted points such as it was *high* or *higher in the north west*, *low* or *lower in the south east* and *lower at the coast*. Credit was also give to a statistic (with units) to illustrate this. Many candidates gained full credit. However, there were some who clearly had a poor understanding of isoline maps and said that there were areas with no solar radiation.

(b)   Most candidates noted that South Africa received more solar radiation than Germany but failed to score credit for further detail such as the greater range of values in South Africa, or that South Africa's lowest value was higher than Germany's highest. Listing a series of statistics without any comment did not gain any credit.

(c)   Candidates general concluded that South Africa had more potential for using solar power because of its higher solar radiation values. Further marks were sometimes scored by those candidates who compared **Figs. 9** and **11** and noted that many cities were located in areas of relatively high radiation. Other candidates noted that there were also cities where radiation values were relatively low and that there were no cities in the area of highest radiation. Some candidates also discussed transmission costs over large distances and were given credit for this.

There were also those candidates who thought that there were areas of both countries with no solar radiation and others who thought that the maps showed actual solar energy generation.

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Key messages

- Often survey map keys list more than one feature on the same line. Candidates need to select the relevant feature and not copy the whole line.
- When measuring distances on maps candidates are recommended to use the method described in the syllabus and avoid calculations.
- When giving figures in answers (e.g. altitudes, distances, temperatures) candidates should always quote the correct units. This was not always evident in **Questions 1** and **5**.

General comments

Candidates found **Question 2** relatively easy. Each of the other questions contained a mix of easier and harder sections, enabling most candidates to score some marks on each question. The parts that candidates found most difficult were **Question 1(c)**, **Question 1(d)**, **Question 3(b)(ii)**, **Question 4(b)**, **Question 5(b)** and **Question 6(a)(ii)**.

Most candidates had plenty of time to complete the paper, as shown by extensive answers to **Question 6**, extending onto the additional pages. Some of this time could have been used to do a careful check of their work.

Comments on specific questions

Question 1

(a)   Candidates were given Fig. 1 to guide them to the right part of the map and were asked to identify the features shown. **A** was a *footpath*, **B** a *ski lift*, at **C** land at was *626 m* above sea level, **D** was *forest*, **E** *cultivation* and **F** a *trigonometric point*. Most candidates gave correct answers for **A** and **B**, although some had written the name of the ski centre rather than using the key to identify the symbol. Some candidates failed to give the correct units (metres) for **C**. A few had looked in square 9675, where the spot height was 603 m. A common error in **D** was to write out the full line from the key, rather than selecting forest. Farming or agriculture were not precise enough for the mark for **E**. Most candidates scored at least half of the available marks in this section.

(b)   When listing list three services that were found at the settlement of Mesnali, most candidates selected *grocery*, *hotel/lodging* and *nursing home*. Other options included *illuminated ski trail*, *church*, *electricity line*, *council offices* and *swimming*, although not *swimming pool*, as this was represented by a different symbol. The most common error was to write out a whole line of the key instead of selecting the relevant feature.

(c)   When describing how Mesnali differed from Nattrudstilen, most candidates gained some of the available credit. Those who were most successful compared the building types individually, e.g. *Mesnali had farms and Nattrudstilen had no farms*. Other valid points included that *Mesnali covered a smaller area, was on lower ground, contained a higher density of either buildings or population* and *was a town, while Nattrudstilen was a resort*. *Mesnali was a built-up area, with dominant buildings, houses and farms on the edge, while Nattrudstilen consisted entirely of cabins*. Those candidates who tried to incorporate ideas about settlement pattern were not successful.

(d) When describing the relief in grid squares 9581 and 9681 most candidates noted the *hill or mountain, reaching up to 995 m*, although some missed the unit of metres on the height. Other valid points included mention of the *elongated shape of the mountain*, the *ridge*, *concave slopes*, and that the land was *steep in the north* and *gentle in the east*.

(e) Candidates were generally successful in measuring the distance along the power line from the junction to the southern edge of the map. Answers between *6800 m* and *7200 m* were accepted. Some candidates had made calculations that were incorrect by factors of 10, indicating calculation errors. The accepted range of the bearing of the power line, from the junction to the southern edge of the map, was *111°* to *114°*. The majority of candidates aligned their protractor correctly and from the correct end of the power line, but not always to the necessary degree of accuracy.

(f) Most candidates correctly stated that the direction of flow of the river Fjellelva was to the south, or towards Sjusjoen. For the evidence, candidates often quoted the lake elevations shown the map, showing that Kroksjoen was higher than Sjusjoen. Others quoted spot heights to prove that the land in the north was higher than the land in the south. In each case use of the correct units was necessary. A small number of candidates gave evidence from the contour shapes and the angle of the tributaries joining the main river.

Question 2

(a) Photographs **A** and **B** showed areas important for tourism and candidates were asked to describe the tourist attractions in each photograph. High marks were common. Most frequently, it was noted that Photograph **A** was a *snow-covered mountain*, there was a *train or tram* in the foreground, and a *signpost* indicated a *trail* or *footpath*. A mark was also available for a comment about the scenery or view. In Photograph **B**, most candidates mentioned the *boats* and the *historical buildings*. Less commonly candidates referred to the *old bridge*, *waterside walk*, *outside seating* and the *market*. Some candidates made speculations about possible attractions other than those that could be seen in the photographs.

(b) Candidates were then asked to suggest two tourist activities for the area shown in Photograph **A**. Most candidates stuck closely to the photograph and gained credit for a *snow related activity* along with either *climbing* or *walking*, or a *train ride*. Other possibilities included *photography* or *painting* and *sightseeing*.

Question 3

(a) When identifying the four volcanic features, most candidates scored some credit but full credit were rare. **N** was a *crater*, **M** was a parasitic cone, **O** was the *vent* and **P** was the *magma chamber*. Additionally, *crater* was also a valid alternative for **M**. Crater and magma chamber were the best known. Candidates were then asked to compare the slopes of the two volcanoes. Many candidates compared the gradients successfully, while relatively few noted the differences in shape, e.g. the shield volcano had straight or convex sides while the stratovolcano was concave.

(b) For the measurement of the angle of slope **X** – **Y**, answers between *23°* and *30°* were accepted. To get the most common error of 117° or 118°, candidates appear to have aligned their protractor vertically to measure the slope. Few candidates gave correct evidence that the volcano had erupted many times, such as the layering visible in the photograph, or that the structure had grown from the sea bed to above sea level.

Question 4

(a) Many candidates gained full credit for completing the pie chart in Fig. 4 to show that 70 per cent of the people living there in 2014 were immigrants. One mark was for dividing the chart and one for completing the key so that it matched the chart correctly. Most candidates were able to complete a divided bar graph to show that 94 per cent of workers in Qatar were immigrants, with only 6 per cent born in Qatar. Some candidates did not complete the scale and others drew two separate bars as a horizontal bar chart, instead of a single divided bar.

(b) Most candidates noted the male dominated population of Qatar and some went on to suggest that the immigrants were middle aged, and commented on the relatively low amounts of both young and old dependents. Those who referred to single age groups, or simply quoted data, or offering reasons for the shape of the graph gained little credit.

Question 5

(a)   Most candidates scored full marks. The area of highest atmospheric pressure was bounded by the *1016 mb* isobar, Quito had *4 oktas* of cloud, Manaus had a *north east* or *east-north east* wind at a speed of *8–12 knots*. With a temperature of *25°C*, Georgetown was *hot*, with a *clear* sky, and *calm* conditions. A few candidates failed to score the temperature point as they quoted the figure but omitted the units.

(b)   Candidates were then asked to give a reason for the low annual temperature range in equatorial areas. It was hoped that candidates would point out that the sun was at a high angle or overhead all year round, or that length of day and night remained almost constant all year. A common misconception was that the Earth was closer to the sun at the equator. Others thought the reason was due to the rainfall or the natural vegetation.

Question 6

(a)   Most candidates gave at least one creditworthy point in responses and many gave more than two valid points. The most common points given credit were that people were *too poor to purchase land*, *increasing population*, *poor quality land* or *land being used for cash crops* or for *urban areas*.

When explaining the undernourishment of 15 per cent of the world's people, given that enough food is being produced to feed everybody, candidates often wrote about the *uneven distribution of food* and the fact that the *poor can't afford to buy food*, the *inaccessibility* of some areas. Some had a slightly different approach and focussed on the idea of people being undernourished, due to a *limited diet* with insufficient nutrition. There were some good answers with many candidates scoring at least two marks.

(b)   Many candidates scored full marks, often by referring to *droughts* and *floods*. Other points given credit included *volcanic deposits covering farmland*, *earthquakes disrupting transport*, *soil erosion* and *soil exhaustion*, outbreaks of *disease* and *pest attacks on crops*. Many candidates wrote at length, continuing on to the additional page which followed.

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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 answer 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 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 use a dark-coloured pencil or pen as scripts are scanned for marking and light colours do not always show up. Always shade bar graphs and pie charts accurately.
- When you think 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 specially to questions where you are asked to complete tables, diagrams, graphs or maps.

General comments

Most candidates found this examination enabled them to demonstrate what they knew, understood and could do. The overall range of marks was 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. Responses to Question were stronger than those to Question 2.

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 2(b)(iv) where some candidates suggested why middle order services should not be included in the study. As

in some previous papers Question 1(f) required candidates to describe a suitable investigation to extend their fieldwork, and Question 1(e)(i) needed them to suggest how a technique could be improved. These types of question are frequently included on this paper and are areas 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 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 is used and appropriate fieldwork techniques even if they have only limited opportunity for fieldwork within the centre. For example, Questions 1(a), Question 1(b)(ii), Question 1(e)(v), Question2(a)(i), Question 2(a)(ii) and Question 2(a)(iii) 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 school site or in the local area.

Comments on specific questions

Question 1

(a)   The quality of response varied in this first question. Candidates most commonly referred to depth and width of the river and speed of flow. Weaker responses incorrectly wrote about pollution or animals, or made vague references to safety.

(b)(i)   Most candidates correctly identified the two pieces of equipment used to measure the width of a river. Weaker responses chose clinometer or quadrat showing no understanding of what they are.

(ii)   Many candidates described the task in sufficient detail. Most described the position of the ranging poles on the bank or side of the river, although some candidates incorrectly referred to the 'ends' of the river. A few candidates confused the task with measuring velocity and attempted to measure the width by using a floating object.

(c)(i)   The omission rate (percentage of candidates not attempting the question) was particularly high at 6%. Those who did attempt the question generally scored well. There were some errors in plotting the points and some did not shade the river channel or mistakenly shaded the area below the channel.

(ii)   Most candidates used comparative terms such as 'wider' or 'deeper' to describe the differences. Some candidates used statistics along with 'only' to make the comparison. Candidates who gave statistics alone did not gain credit. A number of candidates used weak expressions in their description, for example 'longer distance across the cross section' rather than wider cross section.

(d)(i)   Nearly all candidates identified the correct calculation to work out area.

(ii)   Most candidates did agree that the hypothesis was true. The use of data varied in accuracy. The best candidates identified two sites and gave an appropriate area size for each. Weaker responses failed to identify the sites which the data referred to.

(e)(i)   The question proved to be a good discriminator. Candidates made valid suggestions to solve each problem with the most successful being solutions to the problems of group members awarding different points, and river conditions changing over time. The third problem was most difficult to solve as some candidates suggested re-writing the survey sheet or wrote in vague terms about needing advice. Few candidates made the suggestion of doing a practice or pilot survey.

(ii)   Most candidates plotted the pollution score accurately. A few misread the distance scale and put their plot in the wrong place. An omission rate of 8% again shows that many candidates did not attempt the question.

(iii)   The question was a good discriminator. Stronger responses noted that the hypothesis was not true or was partly correct and described the trend well using supporting data. They recognised the change in water quality at site 4 or halfway down the river course. Weaker responses were confused between the increase in pollution scores and the decrease in water quality and confused the two ideas in their explanation. Some candidates gave unnecessary explanations about why water quality varied.

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(iv)   Most candidates recognised that change in land use was the key factor affecting water quality. Whilst good answers contained details of these differences, weaker responses did not give examples of types of land use and how they produce water pollution.

(v)   Candidates found the question difficult. Some did suggest measuring the pH or checking for different creatures in the river. However, many candidates just suggested 'taking a water sample to the laboratory' or 'checking the water sample' without explaining what they were looking for.

(f)   This question gave candidates the opportunity to describe a common piece of fieldwork. However, 10% of candidates did not attempt it. Most candidates chose the method which involved timing a floating object over a measured stretch of river. The question differentiated well with good candidates giving clear descriptions of measuring the fixed distance and timing the float. Their diagrams were detailed and illustrated their methodology well. Weaker responses lacked detail about the necessary procedures. Fewer candidates chose the flowmeter method. Answers were generally lower scoring as they contained less detail about positioning the flow meter and getting the reading.

Question 2

(a) (i)   Many candidates did not know the correct definition of threshold population. A significant proportion thought that it was either the maximum number needed to support a service, or the distance people travelled to get a service.

(ii)   As in the previous question most responses did not show an understanding of the term sphere of influence. Many candidates referred to the number using the service, or the distance travelled to obtain a service. Some candidates did refer to 'area' but did not follow this by reference to 'served by a settlement or service'.

(iii)   Again, there was much confusion shown by candidates' answers. Many candidates reversed the meaning of high and low order and stated that high order goods were cheap and frequently bought. Other candidates equated the terms to quality of goods or services. The most common correct comparisons referred to high order goods being more expensive and less frequently bought.

(b) (i)   Most candidates correctly shaded the two buildings. Although those who confused high and low order shops and services in Question 2(a)(iii) sometimes shaded them wrongly by identifying the hairdresser as a high order service and the furniture shop as selling low order goods.

(ii)   Nearly all candidates attempted to complete the pie graph and there was a small omission rate for a graph completion question. Whilst most candidates completed the graph accurately there were a number of errors made. Some candidates plotted the segments in the wrong order by starting at the top and plotting the segments anti-clockwise. Candidates should plot the segments clockwise in the order of the key. Other candidates failed to shade the segments correctly because they did not match the segments to the key or because shading was careless, and lines were not drawn horizontally in the 'shops selling low order goods' segment.

(iii)   Most candidates identified hypothesis one as being correct. The use of statistics to support their conclusion varied in detail. Many candidates made an overall comparison between high and low order goods and services. Fewer candidates compared goods and services separately.

(iv)   The question proved difficult for many candidates. Better responses stated that it was wrong to classify middle order as either low or high order. Candidates most often gained credit for suggesting that results would be more reliable or valid if middle order shops and services were included. Weaker responses misread the question and tried to explain why it was not a good idea to refer to middle order.

(c) (i)   Some candidates did not appreciate that the age groups must not overlap. A few candidates completed the whole questionnaire which was not needed.

(ii)   This question had the highest omission rate of 17%. Many candidates could not name a sampling method and referred incorrectly to a questionnaire or interview. The most common methods named were systematic and random, but some candidates mixed up the named method and an explanation of how it would be used. Weaker responses made the error of using 'random' or

'randomly' in explaining the method, consequently just repeating the name of the method. Few candidates focussed on stratified sampling.

(iii) Many candidates suggested advice such as being polite, working in groups and choosing an appropriate location to use the questionnaire. There were a number of common mistakes such as telling people the purpose of the questionnaire which is included in the introduction. Also, some candidates focussed on how the sample should be selected, and suggested alternative questions which should be asked. Neither of these approaches were accepted.

(d) (i) Most candidates who completed the flow lines were accurate within tolerance. Once again 7% of candidates did not attempt the question. There were more inaccuracies in plotting the smaller line from Sao Jorge. This was more difficult to measure than the wider line of 10 cm from Sumidouro.

(ii) Whilst most candidates agreed that the sphere of influence was not equal in all directions, many only referred to the number of people travelling from different settlements. The most popular correct answer was that 'most people came from the north'. Candidates should have continued their answer in that way by referring to areas they came from and distances travelled.

(iii) Nearly all candidates plotted the bars accurately. Inaccuracies were usually due to missing the appropriate lines.

(iv) Stronger responses were from those who studied the map carefully made valid points about how the distribution of settlements, upland and transport routes influenced the shape of the sphere of influence. Few candidates suggested that Rio de Janeiro might restrict the influence of Nova Friburgo to the south. Weaker responses were typified by generic statements which did not specifically refer to the map, for example 'it is hard to travel through uplands' and 'people use cars and buses on the roads'

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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. If you agree with the hypothesis, do not just repeat the wording of the hypothesis; you need to make a decision about it and state it too.
- 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. It is also important to indicate which statistics relate to which sites if appropriate e.g. if comparing infiltration rates with distance from a river, you should state the site number that goes with each statistic rather than just write 'when' or 'where'. This was particularly relevant to **Question 1(b)(v)** and **Question 1(d)(iii)**.
- Check you are using the resources that a question refers you to for evidence or data e.g. Fig.11 and Table 4. Remember some resources will be in the insert not on the examination paper. If you are referred to a map or graph and a table, use statistics from the table rather than try and judge them from the map or graph.
- 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)(ii)**, **1(b)(iv)**, **1(d)(ii)**, **2(b)(iii)**, **2(d)(i)**, **2(d)(iii)**, and **2(e)(i)**.
- Sometimes graphs have two vertical axes as in **Question 1(d)(ii)**. Make sure that the data provided is being plotted against the correct axis.
- Take into account the marks awarded. Examiners do not expect you to be writing outside the lines provided so do not write a paragraph when only two lines are given – this wastes time.
- As all scripts are now scanned for marking, it would be preferable for candidates to write in black, using a sharp pencil, and make sure any plotting and shading of graphs stands out clearly.
- If you have to write more than the lines allow there are additional lined pages at the back of the examination paper to use. Indicate this with a phrase such as (*continued on page 17*). 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. There should be no need for you to request additional booklets.

General comments

Most candidates found this examination enabled them to demonstrate what they knew, understood and could do. Weaker responses gained credit on the practical questions, such as drawing graphs, and stronger responses 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 disappointingly high percentages of *No Response*. 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 can be used and how fieldwork methodology, demonstrated in the *Route to Geographical Enquiry* in the syllabus, is implemented even if they have only limited opportunities within the Centre.

Question 1 required candidates to know about, or have some experience of, carrying out fieldwork involving the causes of changes in infiltration rates and soil moisture content with distance from a river. As this is not a common fieldwork topic, candidates were informed in the insert about the methodology and the equipment needed i.e. how to use a water container, measuring tube, and stopwatch and two different methods of carrying out transects away from the river. As well as plotting scatter graphs and a vertical bar graph, they also needed to show that they understood how to calculate the infiltration rate. As usual they had to make decisions on two hypotheses that needed support from provided resources. They also had to consider how heavy rain and the effects of people walking in the area might affect infiltration rates and soil moisture content. This question was quite well done with most candidates attempting all sub-sections. The areas of concern were **Question 1(a)** – where many did not choose the rope as equipment to create a transect, **Question 1(c)(ii)** – where few gave detailed analysis of the influences of different soils, vegetation and steepness from the insert map, and **Question 1(f)** – many focused on tourism issues such as litter instead of focusing on the impact of walking on soil. **Question 1(d)(ii)** and **Question 1(f)** were the sub-sections with the highest *No Response*.

Question 2 required candidates to have knowledge or experience of carrying out fieldwork into the comparative quality of urban environments. Tasks included carrying out a bi-polar analysis and survey themselves and then doing interviews involving access to shopping and services by residents. Candidates had to show that they understood terms such as 'bi-polar graph', 'access', 'services' 'household convenience score' 'random sampling' as well as how to carry out a traffic survey in an urban area. The planning and plotting of bi-polar graphs, located bar graphs, table completions and located pie graphs were also included. Candidates were required to make two hypothesis decisions – one 'Partly true' and one 'False' and had to provide evidence from graphs and tables to support these decisions. One area of concern was **Question 2(a)(ii)** where many responses focused on carrying out questionnaires instead of describing how to organise an environmental survey using a bi-polar survey sheet themselves. **Questions 2(b)(ii)**, **2(e)(i)** and **1(f)** were questions with high *No Response*.

Candidates found **Questions 1** and **2** equally accessible and there was a 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 type of equipment used in basic fieldwork methodology which would include identifying distances or areas to measure usually with regard to rivers or beaches or carrying out urban transects of land-use. Creating two transects in a river valley involves laying a rope in two directions away from the river. Many candidates incorrectly chose callipers, a quadrat or a ruler for this. A number of candidates ticked more than one choice despite the question asking 'Which **one**…?.'

(b)(i) There were three key requirements of the process for measuring the infiltration rate; that water was retained in a water container, that a fixed amount of water was poured into the measuring tube and that they used a stopwatch to measure the time taken every minute for the water to fall in the measuring tube. Most candidates could use the information in the insert to identify three processes

or steps and gained full credit. A few thought that the water was poured into the soil rather than into the tube and some ignored the names on the diagram e.g. referring to a chronometer instead of a stopwatch. Some placed the measuring tube on the ground instead of into it as shown on the diagram and others thought the timing applied to all the water entering the soil rather than the level every minute. One or two referred to an infiltrometer which is a different instrument and works in a different way to the method outlined in the insert diagram which candidates were referred to.

(ii)   Most candidates plotted the three points accurately did this well with just a few plotting two of the points on lines instead of between them.

(iii)   Almost every candidate that attempted this question gave a correct answer of 24/10 often using the dotted horizontal line as the dividing line which was acceptable. One or two gave the full equation which was also acceptable. However, a similar number of candidates as in **(ii)** did not attempt the question at all.

(iv)   This question had a lower omission rate than other such questions, however many failed to look closely enough at the vertical axis to realise that the 2.4 plot was needed above 140 m at just one line above the 2 mm per min line. There were quite a few plotted at 2.8 instead of 2.4.

(v)   This was well done with candidates agreeing that the hypothesis was correct and then quoting two sites with correct data that supported the fact that the infiltration rate decreased with distance from the river. The graph clearly showed that there was a decrease in every site between Site 1 and 7 and Examiners were looking for that recognition for full credit. A small number of candidates just repeated the hypothesis which may signal their agreement but was not credited as a decision; candidates must state if they agree or disagree with the hypothesis. In these cases evidence was credited assuming agreement but the reserved hypothesis mark was not given. A few misread the distances e.g. they used 120 m as the 2.4 infiltration rate or 0 m as the 15 mm rate.

(c) (i)   Many candidates did recognise that Transect A demonstrated a negative correlation and Transect B had no correlation. Other terms were accepted such as constant trend, inverse relationship, regular pattern for A and scattered, random or no relationship for B. Some candidates tried to compare actual results using data; a few just copied the hypothesis given in **Question (b)(v)** for Transect A.

(ii)   Candidates were directed to the map in the insert which illustrated the different land-uses around the river along which the two transects were made. There were three main differences that would help explain the different rates; these were soil types, vegetation, and gradient. Candidates could describe the differences between these three influences and suggest, for a fourth mark, any impact of a difference on infiltration e.g. higher on sandy soil. The stronger responses contrasted in detail the type of soil e.g. sandy and clay in A but mixed in B, a steeper gradient in A than B. Many responses, however, did not provide details of differences and just suggested different soils, different vegetation, and different contours. Other weaker answers included comparing heights, which were not different enough to affect infiltration, and the transects going north and south which could only be an impact if explained in terms of aspect and evaporation but this was never seen. A small number referred to Transect B having bare ground but Fig.1 clearly shows that the bare or cleared ground was in Sites 5–7 of Transect A. Overall this sub-section was the least well done part of **Question 1**. There were very few references to how these differences would affect infiltration rates.

(d) (i)   Most candidates gained two credit for referring to Method 3 being easier/quicker and by suggesting it was more accurate. Other valid responses suggested less equipment needed, results are instant and there is no need for calculations. It is important in questions like this for candidates to focus on the advantages of Method 2 as asked in the question and not on the disadvantages of Method 1 although there is inevitably a degree of comparison involved. Answers such as the digital instrument being cheaper or being less tiring to use for the students were not credited.

(ii)   Many candidates did not attempt this simple plot and bar graph. Candidates must check the tasks required on pages where graphs appear to be complete, in this case at the top of Page 7, which refers to the data that needed plotting being in the Insert. These are straightforward graphs which the majority did well. However some plotted the bar where the plot should be and vice-versa; a common error was to mark the plot using the left-hand axis instead of the right-hand axis. Some found the 13.2 plot at Site 3 hard but it was on a line if the candidates took the time to work out that

each square on the vertical axis represented 0.4 i.e. exactly 3 squares above the line numbered 12.

(iii) The majority of candidates correctly chose Group A as having the results that agreed with the hypothesis. Most then gave the correct data from Table 3 that proved the hypothesis matched Group A's work. One issue here though was that many candidates gave two sets of data for infiltration rate and soil moisture content but did not say which sites they were from or where along the river the data was taken e.g. a distance. Instead they used terms like 'when' or 'where' the infiltration rate was x the soil moisture content was y. It was important here to identify clearly which sites were being compared. It was also important to support the choice with evidence from Group A; not by explaining why Group B's results did not agree with the hypothesis which is what a small number of candidates chose to do.

(e) This was done well by most candidates; they recognised that heavy rain would fill or saturate the spaces in the soil so that any infiltration would be reduced or not take place creating pools of water or waterlogging at the surface. Some tried to link their answer to the two different Transects A and B which was not required or appropriate.

(f) The reference in this question to the area being 'a popular tourist area' seemed to trigger many inappropriate responses often involving the effect of litter, pouring water on the ground and driving cars over the soil. Some suggested that the people walking would spoil the students' experiments. The question asked about the effect of people walking in the area and the majority of candidates correctly referred to compaction or compression, air spaces being reduced, thereby reducing infiltration in the soil.

Question 2

(a) (i) Candidates were expected to recognise the bi-polar system used in creating the environmental recording sheet and be able to describe how it could be used by students carrying out their survey. Most stated that a student would work alone, or in a group, and write in the name of the area, observe or look at the environment being surveyed, make a judgement and tick the correct number on the sheet. A few however suggested that students would ask residents to complete the sheet which was not credited. A small number did not attempt this question.

(ii) Instead of focusing on how the students would organise an environmental survey that ensured results would be reliable, many candidates decided to carry out questionnaires and interviews with residents and use their answers rather than focus on how they would organise their own survey without asking questions. The survey required groups of students to decide which site they were going to survey, how they would come up with reliable grading on the survey sheet (e.g. take an average score), how they would ensure comparability (e.g. do surveys at the same time on the same day) and how they could be reliable (e.g. carry out more surveys in different seasons at the same time). The stronger responses did make these suggestions but this sub-section proved to be the one candidates found hardest on this paper. A few candidates did not attempt either of the questions on page 9.

(b) (i) To test the candidates' understanding of the results of a bi-polar survey, they were asked to look at the results in Table 4 and identify differences between two named areas. Most candidates did interpret what the scores meant and stated, for example, that there was less vandalism in Tettenhall or more open land in Low Hill. Weaker responses just stated the scores without any interpretation or comparison. Interpreting such data is an area which candidates generally struggled with.

(ii) This was question done well by most candidates. The two plots needed to be joined correctly to get the available mark. A few plotted the points correctly but did not give a line or joined them up by bizarre routes. As with previous graphs and diagrams a number did not attempt it.

(iii) As –5 was a clear distance marked and named in the key (25 mm) there was no room for tolerance in plotting this bar and a high percentage of candidates plotted it well. They did not need to shade it correctly for the mark which was of benefit to some. A small number plotted the bar at +5; a significant minority however did not attempt the question at all despite the instructions being emboldened at the top of Page 11.

(iv) Many candidates chose the correct 'Partly true' conclusion and then supported it by quoting areas that made the hypothesis true but also recognising Tettenhall as being a clear anomaly. Candidates should have used more comparative statistics in proving it true between named areas close to the city centre and further away. Few responses gave a general statement e.g. most areas close to the centre had low scores while most areas away from the centre had higher scores. They tended to focus on specific sites that suited their argument.

(c) Random sampling techniques vary and it was often difficult to identify which type the candidate was referring to. There is the more organised random sampling method using random number tables or generating numbers from a computer and there is the much 'looser' method of picking numbers out of a hat or just asking anyone. Credit was given to either technique though, if unidentifiable, the advantage was credited e.g. faster, everyone gets a chance to be asked. The majority of candidates referred to 'asking anyone' as their description. Some responses mentioned asking people 'randomly but did not describe what random means. A few confused random with systematic.

(d)(i) The circling exercise proved to be the easiest question on the paper with almost every candidate that attempted it correctly circling the two correct time ranges although one or two circled on the wrong horizontal service line.

(ii) This was reasonably well done although a few candidates did not attempt it. Those that did, made the correct point that people did not know their walking times and would guess, and that people walk at different speeds, may use a vehicle or stop on the way to the service, maybe taking an alternative route to the quickest one.

(iii) A large percentage of candidates correctly worked out the score of 4 for the local store and then correctly added the total to 24.

(e)(i) Most candidates drew the line correctly at 162 degrees or within the 1% tolerance allowed. To gain credit however they needed to shade the pie graph in the correct type of shading used on the other completed graphs. A number failed to do this. While shading is not always part of the marking, candidates should be taught to assume it is and make sure they shade correctly where appropriate.

(ii) Many candidates thought that the hypothesis was 'partly true'; the correct answer was 'false'. With the three areas closest to the centre having a high percentage score and the two furthest areas having lower scores, overall the hypothesis was proved by five of the six sites with Tettenhall, located neither close nor far away from the centre, having the least access score of all five so not contributing enough to either argument to make the hypothesis 'partly true.'

(f) Carrying out traffic surveys has been a common question in previous papers and is a common fieldwork exercise carried out by many Centres especially those in urban areas. There was a clear division here between candidates who had carried out traffic surveys or had been taught how to do this and other candidates who made inappropriate suggestions such as interviewing drivers stuck in queues or at traffic lights or carrying out a survey of residents' thoughts on traffic jams. Pedestrian and pollution surveys were also suggested as were systematic sampling (count every tenth vehicle) and working out averages instead of totals. The strongest responses suggested working in groups on both sides of a main road and counting vehicles (not just cars) coming in and out of the centre in a fixed period of time several times in a day e.g. rush hours. They would use a counter, clicker or tally sheet to record the numbers to total. This question was the one that the highest percentage of candidates failed to attempt which may suggest some time issues as it is a popular and usually successful topic to examine.

GEOGRAPHY

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 answer 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. *Explain your conclusion. Include evidence from Figs. 5 and 6.*
- 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 use a dark-coloured pencil or pen as scripts are scanned for marking and light colours do not always show up. Always shade bar graphs and pie charts accurately.
- When you think 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 specially to questions where you are asked to complete tables, diagrams, graphs or maps.

General comments

Most candidates found this examination enabled them to demonstrate what they knew, understood and could do. The overall range was similar to previous years – with weaker responses scoring on the practical questions, such as drawing and interpreting graphs and tables, and stronger responses scoring well on the more challenging sections requiring explanation and judgement especially regarding hypotheses. There was no 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 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 2(b)(iv) where some candidates wrote an answer about migration in general rather than the pattern shown on the map of India. As in some previous papers question 1f required candidates to describe a suitable investigation methodology to extend their fieldwork, and Question 1(d)(iii) needed them to describe how a technique could be improved. Such questions are frequently included on this paper and are areas 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 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 is used and know appropriate fieldwork techniques even if they have only limited opportunity for fieldwork within the centre. For example, Questions 1(c)(i), 1(e)(i) and 2(a)(i) 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 school site or in the local area.

Comments on specific questions

Question 1

(a)   Most candidates identified the correct description of a spit. Some candidates could not identify the spit, even though it is a named feature in the syllabus.

(b)   Candidates showed general awareness of safety precautions and many suggestions were appropriate. However, there were a significant number of inappropriate suggestions such as wearing life jackets and high visibility clothing, or keeping well away from the sea. Candidates should consider which safety measures should be taken without making the fieldwork impossible to do.

(c) (i)   The question discriminated well. Most candidates understood a method which could be used to measure wave frequency, but answers varied in quality and detail. Weaker responses merely referred to 'counting waves' without identifying the time at which they would be counted, such as the time they break or hit a particular object. Other candidates did not refer to repeating the count a number of times in order to obtain the average number.

(ii)   Almost all candidates correctly calculated the average result and gave an answer to one decimal place, as required.

(d) (i)   Most candidates identified the correct statement about longshore drift. The most commonly chosen distractors were the statements which referred to swash and backwash.

(ii)   Although many candidates realised that the cork might disappear many did not explain why, such as it might float out to sea. Better responses referred to the possible effect of wind blowing the cork because it is light, or that a cork has different properties to sand or pebbles and therefore might be affected differently.

(iii)   Many candidates did not make an appropriate suggestion to improve method two. Although many candidates suggested measuring more than once this was to vague to gain credit. Multiple measurements need averaging or to be used as confirmation of a correct measurement. Some candidates suggested measuring at different groynes or using a tape measure rather than a ruler, but these suggestions would not improve the original method which was described.

(iv) Most candidates plotted the average distance correctly. An error made by some candidates was misreading the vertical scale and plotting the bar at the first horizontal line above 14 (at 14.04) rather than half way between 14.0 and 14.2. As often happens in questions requiring completion of a graph there was a significant number of candidates who did not attempt the question.

(v) The omission rate (percentage of candidates not attempting the question) was particularly high at 15%. Although the plotting task was more difficult than in the previous question there is no reason for candidates not to attempt it. It was necessary to read the scale from the top down in order to put the top of the bar at the correct height. A small number of candidates plotted the bar correctly but then did not shade it appropriately to show which section was beach.

(vi) The question requiring candidates to make a conclusion about hypothesis one was a good discriminator. Better candidates made the correct conclusion that the hypothesis was correct and gave a variety of evidence to support their conclusion. This evidence included distance and direction moved by the cork and a higher beach on the east side showing accumulation of material by longshore drift. Only the stronger responses showed a full understanding of the significance of the height of the beach material on different sides of the groyne.

(vii) Most candidates made reasonable suggestions about why groynes had been built on the beach. They recognised the need for protection of features such as the sand dunes or village against erosion. Other valid suggestions focussed on the need to slow down longshore drift in order to prevent the spit from extending across the inlet. Weaker responses made vague suggestions to 'stop erosion', or 'prevent flooding' which was incorrect.

(e)(i) Nearly all candidates who attempted the question correctly completed the tally chart. However, 5% of candidates did not attempt the question.

(ii) Many candidates scored both marks by giving appropriate locational details, most frequently referring to the paths on the spit and the sand dunes. Weaker answers were not credited because of the use of 'near' which was too vague.

(iii) Most candidates agreed that hypothesis two was true. They supported their conclusion by evidence from the map and gave an explanation how this would help to preserve the environment. Fewer candidates suggested that the features which they identified would make tourism sustainable by attracting visitors to the area.

(f) The extension task proved to be another good discriminating question. Many candidates seemed to be familiar with the technique and described it clearly and scored full marks. Weaker responses were vague in explaining how to use the clinometer and measure the distance between the ranging poles. A common error was to describe a method of placing one pole at the start of the beach and another pole at the cliff rather than measuring at regular intervals or at breaks of slope. 7% of candidates did not attempt to describe the fieldwork task.

Question 2

(a)(i) Most candidates correctly named a method of sampling and many were able to describe the method and gave a simple explanation of their choice. Weaker responses named one method but described a different one. Systematic and random sampling were the most popular choices. Weaker responses made the error of using 'random' or 'randomly' in describing the method, consequently just repeating the name of the method. Few candidates focussed on stratified sampling.

(ii) This question proved to be quite difficult. Better candidates realised that a 10% sample would have the advantage of not taking too much time. Also, that it would produce reliable results representative of the larger population. However, some candidates explained that a sample would be more appropriate than asking all residents which was not what the question asked.

(b)(i) Most candidates who completed the choropleth shading did so correctly. Some candidates did not gain the mark because of careless use of the key. The correct shading was horizontal dashed lines not continuous lines or diagonal lines. As in previous similar questions 12% of candidates left Gujurat unshaded.

(ii) Few candidates suggested another suitable method to display the results. Better responses correctly identified or described flow lines. Whilst many candidates suggested a bar graph few explained that the bars would need to be located in the different states of India.

(iii) Most candidates correctly agreed with the hypothesis, but many were vague in their supporting evidence. The most common piece of evidence identified was that most people came to Jaipur from Rajasthan, or candidates used statistics to prove this. Some candidates were vague in their use of evidence from other states. They frequently gave statistics from the key but did not identify which states their statistics referred to.

(iv) Weaker responses did not recognise that the question referred to the pattern of migration shown on the map rather than migration overall. Consequently, their answers focussed incorrectly on generic push and pull factors. Better answers included ideas which referred to closeness to Jaipur and the relatively cheaper cost of transport. A minority of candidates also realised that other cities would be a greater attraction to migrants in more distant states.

(c)(i) Nearly all candidates attempted to complete the pie graph and there was a small omission rate for a graph completion question. Whilst most candidates completed the graph accurately there were a number of errors made. Some candidates plotted the segments in the wrong order by starting at the top and plotting the segments anti-clockwise or in a random order. Candidates should plot the segments clockwise in the order of the key. Other candidates failed to shade the segments correctly because they did not match the segments to the key or because shading was careless, and lines were not drawn horizontally in the 'no lighting' segment.

(ii) Most candidates correctly identified the percentage of residents with no lighting in their homes. A small number of candidates calculated the figure to one or two decimal points rather than reading it off the pie graph. This method produced the correct answer but must have taken valuable time. Weaker responses gave an incorrect answer which frequently corresponded to the percentage of residents who use kerosene lamps.

(iii) Almost all candidates correctly plotted the bar on the horizontal bar graph.

(iv) The question discriminated well as candidates attempted to explain why hypothesis two was true. Weaker responses did little more than put the percentage figures from the data into sentences. This approach only scored one mark. When candidates interpreted the data, and made judgements their answers were much more impressive. They used comparative words such as 'most' and 'many' to explain how quality of life is poor.

(d)(i) Correct completion of the divided bar graph was achieved by most candidates but, as in the pie graph, some mistakes were commonly made. Some candidates reversed the order of the segments and did not plot them in the order they came in the data table. Other candidates did not label the segments which was necessary to show the main jobs.

(ii) Many candidates gave appropriate reasons and referred to low wages, manual labour and lack of skills or education. The best responses also referred to wages being unreliable and the jobs informal.

(e) The final question differentiated well. Many candidates showed a good understanding of the difference between the two possible solutions. As well as referring to quality of accommodation they mentioned other issues such as solution B would cause social unrest and provide no permanent solution. Weaker responses focussed on the information given and frequently just copied it, for which they gained no credit. They gained limited credit for realising that solution A provided a home whereas solution B did not do this.