

GEOGRAPHY

Paper 0976/12
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 them all through and study the resources provided with them before making a choice
- answer all parts of the three chosen questions and ensure that sub-sections are not missed
- read the questions carefully. If it helps to do so, underline command words and words which indicate the context of the question
- have the correct equipment for the examination, including a ruler and a calculator
- respond in the correct way to command words used in questions – for example, ‘describe’; ‘suggest reasons’; ‘explain’
- identify the correct focus specified in the question stem – for example, causes or impacts; problems or strategies; local, national or global; environmental or social
- 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
- 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 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 population pyramids, graphs, data tables, photographs, text, 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 evidence is given where required to support an answer and that best use is made of the information provided, such as the compass, scale and key on maps. Practise the skill of describing the features or characteristics from a photograph
- if the rubric of a question instructs candidates to base their answer only on the information in a given figure, then answers that do not relate to that resource should not be included as they will not gain credit
- 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. The syllabus identifies the scale required for each case study
- avoid writing a long introduction to any question (e.g. to provide locational information) at the expense of answering it in detail
- develop points and link ideas wherever possible in case studies and include place detail
- ensure that comparative language and phrases are used where a question requires a candidate to compare
- ensure knowledge of physical processes and an ability to explain a process, using key terms and clearly sequenced ideas
- write in detail and develop ideas in five mark questions where development marks are available
- 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. Candidates should continue answers on the specified continuation pages rather than inside the answer booklet or on extra sheets of paper

General comments

The examination was considered appropriate for the age and ability range of candidates and it differentiated effectively between candidates of all ability levels. The stronger candidates performed well across the paper and a number of excellent scripts were seen. Weaker responses were characterised by not interpreting questions correctly and write relevant answers. Candidates seemed to have sufficient time to complete the paper, however the final parts of the later questions were not always completed. The omission of other sections earlier in the paper however, suggested that lack of time was not an issue.

Most candidates followed the rubric by selecting a question from each section as required. Occasional rubric errors were still seen and a reminder to candidates to answer one question from each section is always helpful. Where candidates answer every question, this compromises the time available for each question and disadvantages them.

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

Questions 1, 4 and 6 were the most popular questions. There were good answers seen to all questions, including those requiring extended writing. The case study questions that were answered the most successfully were about the problems of an increase in the dependent population and the characteristics of an area of tropical rainforest (**1(c)** and **4(c)**). High quality answers in these case studies were characterized by developed ideas, with some clear place detail. Weaker responses tended to be generic developments of ideas with little place detail to support them, whilst other weak responses were characterized by the use of simple, brief statements. In some cases a significant amount of detail included by candidates was not relevant to the question being asked, and sometimes long introductions occupied much of the answer space. An area for improvement for some candidates would be maximizing the marks scored on the part (**c**) questions.

Case studies usually require place specific information to allow candidates to access the highest level. This requirement can vary between questions – for example: a country (**Question 1**) or an urban area (**Question 2**), an area (**Question 4** and **Question 6**). Candidates should carefully consider their choice for each question ensuring that they select an appropriate example and also that they have included appropriate place specific detail.

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 far more popular than **Question 2** with the vast majority of candidates attempting this question.

- (a) (i) Some candidates did correctly interpret the graph, however many added numbers for male and female resulting in answers of 12 000+. There were also many who did not read the scale accurately enough, giving answers such as 6200 or answers using the wrong units such as 6.4, 6 or 0.64.
- (ii) Most candidates recognised that there were more young dependents in Bihar, although a small number ignored the scale and put this the wrong way round. Lots of candidates gave statistics and lots of candidates made references to differences between males and females, neither of which were required. Where candidates did try to make references to the contrast in the balance of the age groups of young dependents, they were not always precise enough for the second mark.
- (iii) Most candidates recognised the wide base for the first mark. Rural depopulation was less well interpreted and many candidates made reference to old dependents here. Some referred to the shape of the pyramid, but often these were vague references such as 'gets thin at the top'. Most candidates recognised that there were more males, though some clearly did not know the word 'imbalance'. Some candidates gave reasons for high birth rate, rural depopulation and the gender imbalance without making any reference to the evidence in the population pyramid.

(iv) Most candidates were able to achieve some success with this question and many answered it well, giving a wide range of reasons. The full range of marks was seen. The most common answers seen to explain the high birth rates were lack of contraception and/or education about it. Some candidates did not include sufficient detail – for example writing about ‘improved education’ rather than improved education for women or education about the disadvantages of larger families, or simply wrote words such as ‘tradition’ and ‘religion’ without any elaboration.

(b) (i) Dependency ratio is calculated by adding together young and old dependents, dividing that by the economically active, then multiplying by 100 so the ratio is expressed as the number of ‘dependents’ per 100 people.

This was a challenging question, although some candidates did correctly address the subject of dependency ratio and a few were able to make accurate calculations. However many candidates only made a simple comparison of numbers of young and old dependents, using statistics or words like ‘increase’ and ‘decrease’. Only one mark was available for this approach unless it addressed dependency ratio directly. In the case of Bihar the overall dependency is likely to fall by 2050 according to the data in Fig. 1.3.

(ii) This question differentiated well and there were some high scoring answers which accessed the full range of mark scheme points. There were also good examples of development seen and some candidates were clearly well prepared for this question. However, there were many weaker responses that did not show understanding. A significant number simply wrote about the current young and economically active populations growing older without any reasoning which could be credited.

(c) Responses to this cases study were good and indicate that it was one candidates found relatively straightforward.. There was a variety of case studies, but the most popular and successful examples used were Japan and Italy. The stronger responses were able to make three well developed points - usually relating to pensions, health care or the workforce – and added some place specific detail, often of a statistical nature. Weaker responses gave simple, undeveloped and often generic ideas and sometimes focused incorrectly on overpopulation rather than an increase in the dependent population. Some tried to adapt their China ‘one child policy’ case studies to this question, usually with limited success. Better candidates focussed on old or young dependents, usually old, and described the problems associated with catering for an increased proportion of them.

Question 2

Only a very small number of candidates answered this question and it was far less popular than **Question 1**.

(a) (i) Most candidates identified the correct features.

(ii) Most candidates correctly identified the two urban areas.

(iii) This question was well answered and most candidates identified Calgary, justifying their choice using information from Fig. 2.1. A few simply quoted statistics without the required interpretation, i.e. ‘lowest unemployment’.

(iv) Answers varied in quality. Common acceptable answers included lack of housing, traffic congestion and unemployment. Many weaker answers included reference to problems such as disease, food shortage and the growth of squatter settlements rather than problems resulting from the growth of an urban area in an MEDC, along with vague references to crime and living standards.

(b) (i) Responses to this question were mixed. Many candidates referred to accidents, angry drivers and lateness, however others relied on just one of these ideas.

(ii) This question was not well answered despite a wide range of ideas being possible. Candidates did not always pick up on the ‘public transport’ context. There were a few strong answers which tended to refer to developments in the bus and rail network, however most candidates who were able to interpret the question correctly did not give more than one or two mark scheme points, with few developing their ideas. Many candidates who missed the required focus on public transport wrote about ways to reduce traffic congestion, such as road improvements.

- (c) Whilst a small number of high quality answers were seen, in general the question was not well answered. There were few developed answers which contained place specific information even though many candidates chose cities familiar to them, perhaps where they lived or at least within their own country. Many candidates did not clearly describe a change in land use by referring to the land use before and after (e.g. the destruction of housing to build a factory, the demolition of a factory to build a shopping mall). In addition many answers were vague and included conflicts, or more likely problems, relating to the natural environment, especially in rural areas rather than within an urban area.

Question 3

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

- (a) (i) There were mixed responses to this question. Whilst 'spit' was the most common response given, a large number of candidates did not answer this correctly, a significant number choosing both distracters. There is a need for candidates to learn the names of landform types and be able to recognise them on maps and in photographs.
- (ii) Again, responses to this question were mixed. Some candidates full marks both marks because they were able to give accurate distances and directions, others were not able to demonstrate these simple skills.
- (iii) There seemed to be some confusion here and few candidates were able to give a clear sequence, with appropriate key terms, to gain full credit. Many responses focussed on erosion and failed to score. Candidates should be taught to explain processes, such as longshore drift, in a clear, step by step sequence with accurate use of key terms.
- (iv) The question differentiated well. Good answers gave logical explanations of the stages in dune formation with weaker responses being vague, referring only in very brief terms to the build-up of sand. Significant numbers of candidates confused wind and wave action and wrote about swash and backwash.
- (b) (i) Most candidates used the images well to identify three different opportunities, though some focussed on one idea only, particularly tourism.
- (ii) This question differentiated well. Stronger responses described problems under appropriate headings without repetition, most candidates gaining credit for one or more ideas based on injury or death, destruction of houses or businesses, and loss of farming land or its impact on farmers. Weak answers tended to be vague or repetitive, however there was also some good development seen from the strongest candidates.
- (c) Whilst a small number of excellent answers were seen the process was not well explained by many candidates. It was rare to see an answer which included explanation of erosional processes and a logical sequence of processes leading to the formation of the wave-cut platform. Many candidates focussed only on cliff collapse, often following the hard and soft rock sequence which was not wanted. Other answers provided the cave, arch and stack sequence but with no reference to cliff erosion or the resulting wave-cut platform, and some candidates wrote about rivers, waterfalls and plunge pools.

Most candidates included diagrams, but only a few were of good quality, helping to show understanding of the formation of the features

Question 4

This question was chosen by many candidates.

- (a) (i) Some candidates failed to answer this question however many did correctly shade the required area. A significant number of candidates confused the Tropic of Capricorn with the international boundary so only shaded up to the dashed line. Others missed the 0–50 mm area or the area above 200 mm in their shading.

- (ii) This question asked about the desert 'climate' however many candidates described other characteristics of a desert, such as its vegetation. Those who correctly interpreted the question typically scored marked for reference to the high daytime temperatures and low temperatures at night.
 - (iii) Responses to this question were characterised by a lack of understanding of how the factors explain the presence of a desert in Namibia. Some mentioned the Tropic of Capricorn or its significance, however many referred wrongly to the Equator or used inappropriate terminology such as 'below the Tropic of Capricorn'. Few responses showed an understanding of the significance of the wind direction (i.e. it blows overland to the deserts) and many did not appear to be familiar with the impact of a cold ocean current on climate.
 - (iv) There were some good answers which explained the rain shadow effect logically and fully, scoring maximum credit. However, most answers contained misconceptions such as the mountains 'block the rain', lack of vegetation prevents it, or strangely that a desert is the result of plate movement.
- (b) (i) Many candidates scored three marks by correctly identifying three links in the food web. Some candidates however only repeated the words 'depend on' and so gained no credit as they did not describe how they were dependent (eg for a food supply). Other candidates repeated the same idea three times using different animals.
- (ii) This differentiated well as many candidates referred to aspects of roots, leaves/cuticles and thorns. Some gave named examples and some gave explanations, neither of which were required as the command word was simply 'describe'. The stronger responses described a number of features, some of which they developed, however weaker answers tended to focus on one or two features, especially the leaves, and included irrelevant explanation.
- (c) Most candidates named the Amazon but there was little place detail to take them to level 3. Where candidates linked a characteristic with a simple explanation they scored well, typically for emergents, buttress roots and drip tips. Weaker responses described at length but did not give clear explanations of how the vegetation adapted to the climate. Some answers included irrelevant details about human effects on the tropical rainforest whilst others continued to write about the vegetation in deserts.

Question 5

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

- (a) (i) Most candidates identified a primary industry.
 - (ii) Generally answered correctly although some choices for manufacturing were incorrect or too vague, e.g. 'factory'.
 - (iii) This was generally answered well and a significant number of candidates scored full credit here. The main issue was that some answers did not compare or simply quoted statistics without any interpretation.
 - (iv) On the whole, this question was poorly understood and a significant number of candidates scored low marks. Where candidates did gain credit, it was typically for ideas relating to mechanization and/or improved skills/education. High quality answers were relatively few and they were characterized by reference to a range of different ideas in the mark scheme, some of which were developed.
- (b) (i) Generally this was not well answered as many candidates used the vague phrase 'near to' for each locating factor rather than using distance or direction correctly. When describing a location a mark can be gained for reference to each of the correct distance and direction from any named feature but not for words like 'near' or 'close'. Some candidates here gave reasons for the choice of location instead of just describing the location itself. Unfortunately, where candidates did give reasons in (i) some didn't then go on to give the same reasons where they would have been relevant in (ii).

- (ii) This was a challenging question but it discriminated well. Stronger responses linked the factor with a benefit or developed reason, with answers usually focussing on raw materials, transport of products and workforce. Weaker responses wrote in general terms about location factors rather than relating their answer to the named industries or the specific example shown.
- (c) Common case studies were Germany, Iceland, USA, and China. Many candidates seemed to struggle with the reference to 'importance' and included explanation at the expense of description. Many could list energy sources and give place specific references however this did not provide the development required to progress beyond level 1. Some were able to provide statistics, such as percentages of energy produced by different sources, the latter assisting them to describe their relative importance and raise the quality of their answers.

Question 6

This question was chosen by many candidates.

- (a) (i) There was lots of variation seen in the quality of definitions here – many were precise and accurate however others defined 'migrant' or omitted the 'leisure/vacation' element of visiting a location.
- (ii) Most candidates managed this well with only a few inaccurately plotted points or missing lines.
- (iii) Many candidates made good use of Fig. 6.1 to identify an increase in numbers, some elaborating by accurately quoting statistics and referring to the rapid rate of increase. Significant numbers referred to air travel or attempted to compare which was not required as the command word was 'describe'.
- (b) (i) Many candidates suggested jobs, whilst others included benefits such as increased sales or revenue from businesses (or examples), road improvements and cultural preservation. Significant numbers suggested foreign currency, development or benefits to the economy but did not say how this would benefit people. A common error was to give three examples of different jobs (or businesses from which earnings will increase) rather than considering different ways in which people will benefit as required by the question.
- (ii) This question allowed good discrimination. Problems for people were better answered than for the environment though many responses were vague (i.e. crime, drugs, overcrowding, shortage of resources) and did not elaborate sufficiently for any credit. Stronger responses typically referred to noise, traffic congestion and loss of living/farming space. A lot of candidates used the words 'natural environment' instead of stating exactly what aspect of it they were referring to (i.e. 'natural environment will be ruined'). Correct answers typically referred to deforestation and water pollution. Littering was frequently referenced in this section but no impact on the environment was suggested.
- (iii) This question was answered quite well by many candidates with many mark scheme ideas seen from candidates who made effective use of the various sources. Some lacked specific detail, including lots of value judgements instead, such as 'beautiful' 'amazing' 'idyllic' 'incredible' and 'breathtaking'. There were also many irrelevant references to transport features such as roads and airports, which are unlikely in themselves to attract visitors to the island.
- (c) Many different examples were seen and most of these were valid except those who named an entire country. Common locations which were suggested included the Great Barrier Reef and Victoria Falls. Despite the focus on management in the question many candidates focussed on the impacts of tourism and seemed to refer to management as an afterthought, usually simple ideas such as litter bins and fines for dropping litter at level 1. Stronger responses, included ideas about restricting access to areas, establishing nature reserves and educating tourists about how to conduct themselves, some attempting to develop them more fully.

GEOGRAPHY

Paper 0976/22
Paper 22

Key messages

- When answering questions on photographs, candidate should focus on what they can see in the photograph and avoid giving background information which is not required by the question. This was an issue in **Question 3**.
- Questions often use the geographical terms *relief* and *drainage*. These terms have precise meanings which candidates need to know to be able to answer the questions. This was an issue in **Question 1** where candidates often wrote irrelevant answers.
- 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 5**. This was also commented on in 2017.
- Paper 22 is a skills paper with only 6 out of 60 marks for knowledge. Candidates should be aware of this and note the need to answer using the information provided in the question. This is particularly so when candidates are given the brief to answer “Using information from Fig. Xx.....”

General comments

Many candidates performed very well on all of the questions. Only the final part of **Question 6** proved difficult for large numbers of candidates. Some candidates found the physical geography questions (**Question 4** and **Question 5**) difficult, which indicated a slightly weaker knowledge of the weather, and earthquakes and volcanoes sections of the syllabus. The vast majority of candidates completed the paper in the time available and few needed to use the additional pages 17 and 18.

Question 1

- (a) Candidates generally identified the land use at **A** as *forest* and the type of land at **B** as *marsh*. The height above sea level at spot height **C** was usually given as *1236 m* but many candidates found it more difficult to give the height above sea level of the contour at **D**. The correct answer was *1200 m*, however many candidates gave answers which were not round numbers and could not be contour heights. In part (v), most candidates correctly identified the flow direction of the Glitra river as *south west then south* and the distance along the river in part (vi) as *8½ kilometres*.
- (b) Many candidates gained full marks on this part of the question, choosing services shown in blue or red in the map key. There was no particular pattern to the incorrect answers.
- (c) Many candidates correctly identified the feature at **X** as a *marked ski trail* and the feature at **Y** as a *marked footpath*. There was a definite improvement in cross section completion compared with 2017. Examiners looked for a profile starting just below 1400 m and at a height of 1300 m 16 – 20 mm along from the left hand side of the cross section.
- (d) There were many irrelevant answers to both parts of the question. Not only was description of drainage included in the relief section and vice versa, but also answers contained much irrelevant information about roads, land use and settlement.

The relief was generally *steep*, although many candidates thought that it was gentle. Many commented on the *mountainous* nature of the relief and gave the height of the highest point as *1602 m*, although some candidates failed to give the units. Surprisingly few mentioned the *valley* which was a prominent feature of the area. Additional marks could have been gained by noting its *V-shape*, *straight path* and that the *east was steeper than the west*.

Answers on the drainage were generally better. Candidates often noted the main *store Ula* river *flowing south west*, its *tributaries*, the *marsh* and *small ponds*. It was encouraging to see that very few candidates described the tributaries as flowing out of the river which has been the case in the past.

Question 2

- (a) Most candidates identified the type of graph most suitable to show the data as a *bar graph*. There was no particular pattern to the incorrect answers.
- (b) Most candidates noted that *Greece* was expected to have a population decrease in 2030.
- (c) Many candidates noted that *France* had the smallest population decrease between 1970 and 2012.
- (d) The difference in life expectancy between the two groups of countries was generally identified as *9 years*.
- (e) This was generally well answered with most candidates noting that population growth rates were *lower in the north* and that growth rates were expected to *decrease* in both north and south. Occasionally candidates confused north and south, possible because of the order in which they appeared in Table 2.1.
- (f) Most candidates noted that birth rates were *lower in the north* and that they had *decreased* in both north and south.

Question 3

- (a) Those candidates who followed the instruction in the question to “Describe the residential area shown in Fig. 3.1” performed well. They mentioned such points as the *shanty* settlement, *small, single storey* houses, *few windows*, *flat roofs*, *rocks on roofs*, *metal sheets*, *plastic sheets*, *high density*, the *fence* and the *electricity poles or wires*. Details that could not be seen in the photograph were not given credit. These included the income level of the people, their employment status, their journeys to work or the incidence of disease.
- (b) This part of the question also required candidates to answer “Using evidence from the photographs.....”. Answers commonly given credit included: the *space to cultivate*, *space for cars*, *space for drying clothes*, *space for privacy*, *toilets*, *windows* and the *more substantial buildings*.

Question 4

- (a) Most candidates completed the graph accurately and used the key given in the question. Most knew that the date with the greatest range of temperature was the *3rd*, however there were many incorrect answers to the meaning of the units mb, with about half of the candidates correctly answering *millibars*.
- (b) Answers to this part of the question were often weaker, despite similar questions appearing on various past paper. Most candidates correctly stated the wet bulb temperature as *21 °C* and the dry bulb temperature as *28 °C*, however some candidates failed to give the units. The depression of the wet bulb was often incorrect and sometimes the units were given as % and not °C. In part (iii), Examiners awarded one mark for the correct figure (53) and one mark for the correct units (%).

Question 5

- (a) Most candidates correctly identified plate margin **A** as *constructive* or *divergent* and plate margin **B** as *destructive* or *convergent*.
- (b) This was also generally well answered, with those candidates who were unable to identify the plate margins in part (a), often able to give two correct pairs of answers in part (b). Some candidates failed to put arrows on one or both diagrams.
- (c) Candidates frequently explained why the Atlantic Ocean is getting wider by describing the processes happening at plate margin **A**. They said that the *divergence of the plates* would allow *magma to rise* from the magma chamber to fill the gap, *creating new plate* and leading to *sea floor*

spreading. Very few candidates mentioned the lack of destructive margins in much of the Atlantic as being a contributory factor.

- (d) Answers were very variable. Many candidates identified the process of *subduction* at **Y** but fewer identified *volcanoes* as the feature at **X**.

Question 6

- (a) Most candidates identified the two correct statements as increased carbon dioxide in the atmosphere will increase global warming, and global warming is a result of an increase in the greenhouse effect. There was a wide range of incorrect answers.
- (b) Most candidates plotted the graph accurately, in the correct space and used the key correctly to label it. In part (ii), the graph interpretation was good, with many candidates referring to a 60% decrease in maize yields and a 6% rise in soya bean yields. Most remembered to give the units (%).
- (c) Candidates found this the most demanding part of the whole paper and very few candidates scored full credit. The emphasis in the question was on the changes that farmers might implement as a result of global warming and this meant that those candidates who simply quoted predicted changes in yields from Fig. 6.2 failed to score any marks. The question also instructed candidates to answer "Using information from Fig. 6.2 only,...." therefore references to irrigation and other farming practices were not given credit.

Based on the information in Fig. 6.2, farmers in temperate areas might grow *more wheat if temperature increases were low* (1 °C/2 °C) but grow *more maize if temperature increases were high* (3 °C).

Farmers in tropical areas might generally grow more rice and less wheat and maize. However, if temperature increases were low (1 °C) they might grow more rice and wheat.

GEOGRAPHY

Paper 0976/42
Alternative to Coursework

Key messages

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. There is no credit for repeating the hypothesis as an answer.

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

Take care when adding plots to graphs and use the key provided. Also take care when joining lines up between plots as marks are often awarded for this in addition to the plots. Any numerical answers should be clear, e.g. a 4 often looks like a 9; a 2 like a 5, a 0 like a 6, a 1 like a 7.

Read questions carefully and identify the command word, e.g. *Describe*, *Explain...* and also the key words, for example if asked for *data* then statistics are required whereas being asked for *evidence* could involve description as well as statistics.

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 pebble size and velocity in a river you should state the site number that goes with each pebble size and velocity rather than just write 'when' or 'where'. This was particularly relevant to **Question 2(d)(iii)**.

Check you are using the resources that a question refers you to for evidence or data, e.g. Fig.2.4 and Table 2.1. 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(f)(i), 1(g)(i), 2(c)(i), 2(d)(ii) and 2(e)(i)**. Note that where there is a completion task the instructions are now **emboldened** to try and avoid you missing them out.

Use a protractor and a ruler to improve accuracy and presentation where required. This was particularly the case with the pie graph in **1(g)(i)**.

When answering questions candidates should take into account the marks awarded to it. The number of lines allocated to a question for responses is a useful guide to the required response length. A paragraph is not required when two lines are given for the response.

Ideally candidates should write in black, using a sharp pencil, and make sure any plotting and shading of graphs stands out clearly.

If you have to write more than the lines allowed, there are additional lined pages at the back of the examination paper to use. Indicate this with a phrase such as (*continued on page 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.

General comments

Most candidates found this examination enabled them to demonstrate what they knew, understood and could do. Weaker candidates scored 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. 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 within the time allowed. Particular questions where candidates do not score well often relate to them not taking time to thoroughly



read and understand the resources referred to. Such failings mean that some candidates do not obtain a mark in line with their geographical ability.

Apart from the ongoing issue of many candidates not attempting straightforward completion tasks on graphs and maps, this session was notable for the lack of knowledge displayed of the three sampling techniques – Random, Systematic and Stratified. All candidates should be confident in answering questions on any of these sampling methods. This is the most significant area for centres to work on.

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 to carry it out in and around the centre.

Question 1: This question was based in a rural area of Kenya and required skills in reading and completing a pie graph and a map, knowledge of sampling techniques, problems in carrying out a questionnaire in a farming area and some knowledge of solutions to water shortage problems for the farmers. As usual candidates had to make decisions on two hypotheses that needed support and evidence from provided resources. The areas of concern were questions related to carrying out a pilot study and sampling techniques i.e. **1(d)(i)** where candidates did not explain well why carrying out a pilot survey was a good fieldwork technique and **1(d)(iii)** where many either made no attempt or gave sampling techniques that were inappropriate or unknown; what was needed was a brief description of Systematic or Stratified sampling. **Questions 1(a)** and **1(b)(i)** were the best answered; **Question 1(f)(i)** was, by far, the sub-section with the highest *No Response* on the paper.

Question 2: This question was about investigating possible differences between a river meander and a straight section of a river. It required candidates to demonstrate their knowledge of erosional processes and the use of a flowmeter to measure velocity. Skills tested included completing scatter graphs, bar graphs and completing the shading of velocity on a cross-section. Candidates were provided with one hypothesis decision regarding the pattern of velocity across a meander compared to the straight section; they needed to provide evidence to prove it was correct however this did not stop many giving their own different decision and trying to justify that. They were required to make their own hypothesis decision on the second hypothesis related to pebble size and velocity. Finally there were sub-sections on the changing size of pebbles downstream and the causes of these changes. **Questions 2(c)(i)** and **2(e)(i)** were the best answered. Disappointing answers were seen in sub-sections **2(c)(ii)**, **2(d)(i)** and **2(e)(iii)**. **Questions 2(d)(i)** and **2(e)(i)** were questions with a high *No Response*.

Candidates found **Question 1** slightly more accessible than **Question 2** and there was a slight fall in the mean from 31.3 in 2017 to 29.4.

Comments on specific questions

Question 1

- (a) Almost all candidates made a good start by explaining the meaning of the terms 'Commercial farming' and 'Subsistence farming'. A small number gave the meaning in reverse and a very small minority made no attempt at the question. The most common answers involved 'selling' and 'for the family.'
- (b)(i) Again most candidates worked out the answer was 155 thousand tonnes. A few misread the vertical scale and gave 151. A small number gave figures for other crops than wheat.
- (ii) The answer required a statement describing the change in tea production and maize production between 2011 and 2014 which most candidates did well, i.e. tea production had increased and maize production had decreased. However quite a few candidates decided to describe every trend for each year including giving statistics even though the question stated '*Do not use statistics*'. Some candidates substituted wheat for maize in their description maybe following the use of wheat in (b)(i). The key to success here, as in other questions, was to read the question carefully before answering.

- (c) This question involved using map skills related to a distance scale and other locational clues such as where the village was in relation to the main road and the dry lowland area. The correct answer of Athi Kamunyuni (Athi or Kamunyuni were also accepted) was worked out by over three quarters of the candidates. Quite a few responses stated Darajani as the answer but that is less than 10 km from the main road.
- (d) (i) The best answers to this question referred to ideas such as testing the methodology, checking and amending the questions in the questionnaire and improving it, and doing the survey to save time when it came to the real fieldwork including how best to approach farmers who may not be keen to participate. Many thought the area being used was the actual fieldwork area so that it would be good to get used to it and while testing your equipment is a relevant answer in many pilot surveys, it was not credited here where the equipment consisted of a pencil and a questionnaire.
- (ii) Candidates did not always make clear which random sampling system they were referring to for the advantages and disadvantages to be judged by examiners. Most said that one advantage was that there was no bias but that sampling could lead to information being unrepresentative; others chose random sampling numbers which would have a disadvantage of taking time to organise but would be less biased than just picking anybody where students may then exercise bias. In teaching this there is a need to distinguish the difference between the 'pick the next person you meet' random system and the 'random numbers' technique as each has different advantages and disadvantages. Overall candidates were better at stating an advantage than a disadvantage of random sampling.
- (iii) Candidates should have studied random, systematic and stratified methods along with their advantages and disadvantages. Here one mark was given for stating Systematic or Stratified then two marks for describing that system in relation to choosing 'the farms.' Candidates needed to be aware that the question was specifically about applying the sampling method to the farms so, if they chose systematic - as most did - they could choose every fifth farmer or fifth farm they came across for example or they could put a grid over a map and choose a farm from every fifth square. What was not accepted, as quite a few suggested, was choosing a farm every five kilometres because, while this is a regular interval, it is an irrelevant technique as there just would not be a farm at such an even interval. Fewer candidates suggested Stratified sampling but then found it hard to describe it in the context of farming with references to equal male/females and a spread of age groups.
- (e) (i) Quite a few candidates referred to primary data as first-hand information or original data that was being collected for the first time by 'you' or 'yourselves'. Some were a little vague giving definitions that might have been equally true of secondary data, e.g. data collected by the student or collecting directly from a source. A few added to their vague statements that primary data was not collected from the internet or from books which indicated they knew what it was but could not easily define it.
- (ii) The question was about practical difficulties, not just difficulties, so candidates needed to think about the problems of carrying out the questionnaire in the countryside as opposed to urban areas where interviewees are ready to hand and the students can stand and wait. In this exercise the students would be interviewing the farmers, not dropping off questionnaires to be collected later, which is rarely successful in terms of returns plus the added burden of collecting them. Given this scenario, the difficulties could involve transport and access around the area to get to the farms, finding the farmers who may be busy away from the farm, finding cooperative farmers who would be willing to answer the questions and also give honest answers - candidates seemed to suspect that many farmers would lie or just not know the size of their farm for example. It was not accepted that farmers were illiterate or could not read or write as they were not filling in the questionnaire; language difficulties however could be possible and was accepted.
- (f) (i) While the vast majority of candidates did this well. The technique may be unusual but there were three diagrams completed for the other three villages and a grid was provided to place the 3 · 3 squares to shade in the 9 hectares of land use. Most did draw the 3 · 3 square grids and shaded any 4 hectares for crops and 5 hectares for animals (giving 9 squares) to gain full credit. Quite a number ignored the grid provided and drew their own, e.g. drawing 5 · 2 = 10 squares but then shading in 9 of the squares correctly. In these cases they did not get the grid mark but did get the mark for correct shading.

- (ii) Half of the candidates chose the correct answer in that the hypothesis was correct. Others claimed it was false because both north and south grew crops and animals so the land-use was similar. However they should have been looking for the degree to which the land-use was different to justify the hypothesis as there were clear differences between north and south. In the north a greater area was used for crops than in the south and also a greater area was used for animals than in the south. They could have also stated that the use of the area in the north for crops and animals was quite even compared to the south where the area for crops was much greater than the area for animals. Statistics to back these statements up needed to total the areas used in the two villages in each area, not to compare two separate village statistics. A few identified the more straightforward answer that more cattle were in the north and more goats in the south. The key to success in this answer was to make clear which answers related to the north and the south. Some just compared the size of farms between the north and south with no discussion of the land-use.
- (g) (i) One plot was needed at 80 per cent which involved no difficult judgements and the last two shadings in the key needed adding in correctly on a conventional pie chart that was plotted clockwise. While a high number of candidates did this well, there were still a large minority who did not attempt. Some of the 80 per cent plots were inaccurate; examiners expected an exact plot at 80 per cent here with no tolerance as it involved no judgement.
- (ii) Quite a few candidates did not seem to know what the word 'environmental' meant whereby they made the incorrect decision that the hypothesis was correct when the environmental factors totalled 45 per cent and were outweighed by the non-environmental factors at 55 per cent. Candidates needed to look at the six listed farming difficulties and decide which were environmental and which other factors were non-environmental, e.g. economic/financial. The first three were environmental factors adding to 45 per cent; the second three were non-environmental adding to 55 per cent making the hypothesis false. The best candidates disagreed with the hypothesis, identified the larger other difficulties as economic or financial referred to the 55/45 per cent statistics and noted that the two main highest difficulties were poor transport links (22 per cent) and lack of cheap loans (20 per cent). A few made the correct hypothesis decision but then allocated 'pests and diseases' to the non-environmental group so their statistical evidence was flawed.
- (h) Most candidates took the pragmatic view and suggested small-scale solutions to the problems of low rainfall such as creating boreholes or wells, creating an irrigation system and storing rainwater in tanks which were all credited. Many candidates however suggested large-scale schemes which the farmers themselves could not develop, e.g. dams, reservoirs, desalination, cloud seeding or lengthy pipelines to Nairobi or Mombasa. Some also suggested the farmers moved away to wetter areas which was a negative solution that was not credited. Only a few suggested transferring water from the wetter north area to the south; this was credited. A few suggested water-saving techniques such as taking showers rather than baths and using 'grey' water which were not credited in this question.

Question 2

- (a) (i) Just over half of the candidates correctly placed *Erosion* in the top box and *Deposition* in the bottom box.
- (ii) Although most candidates could name an 'oxbow lake' as the feature that may form if a meander was cut off by erosion, many gave other suggestions, e.g. waterfall, island, and cliff. Some just stated 'oxbow' which was credited.
- (b) (i) This was answered well despite a few candidates treating the flowmeter as a float and letting its speed be measured 10 metres down the river with a stopwatch. There were plenty of opportunities to gain credit here even if one aspect of the answer was incorrect, e.g. it was acceptable to put the flowmeter or propeller in the water but not the pole; it was correct if the propeller 'turned' 'rotated' or 'spun' but not if it was 'moved.' Most gained credit for stating the propeller was put in the water and the speed was read on the velocity display.

- (ii) The advantage of using a flowmeter was answered more correctly than the disadvantages in that most candidates recognised that it would be more accurate or faster than other methods yet it had disadvantages too. While many correctly stated that it could be affected by rocks or weeds which were credited, many thought that it was expensive or could malfunction, which were not credited. The latter was only accepted if it referred to the risk of batteries going flat. Some candidates focused on aspects of safety if using it in deep or fast flowing water which was not credited.
- (c) (i) This shading exercise was completed correctly by most candidates; it just required a cross-hatch shading of the 0.51–0.60 box to get the mark. Many candidates did not attempt this question despite this box being the only one not shaded on the page and the emboldened instruction '**Plot the result...**' there as a clear guide as to what to do.
- (ii) Very few candidates looked for and identified any distinctive overall pattern comparing the meander with the straight section, e.g. meander velocity increasing towards the far bank whereas in the straight section the speed is highest in the centre then fell again. Most candidates just compared individual sites and their different velocities and compared the highest speeds at two sites; there was no reference to any overall pattern of any kind. These answers rarely received credit.
- (iii) Partly because of difficulties with **Question 2(c)(ii)**, many candidates struggled to identify two different results although a few made perceptive observations about the current meander having higher velocities than the previous readings and a few did recognise that the current meander had a higher range of velocities than the previous one. Some just listed differences in velocities at specific individual distances which gave no overall view of the results or the main differences required.
- (iv) As mentioned above, the difficulty with **Question 2(c)(i)** gave a few knock-on effects with the rest of part (c) but this sub-section was answered more correctly than (ii) or (iii) previously. Most realised that two different methods were being used or that it was possible for student errors in either method. Some referred to the weather or rainfall making a difference but did not specify to which meander this might apply.
- (d) (i) Candidates found this a difficult question to answer. Candidates were expected to refer to how callipers or a pebbleometer would be used to measure pebble size here. They should have explained how a pebble would be clamped/placed between two jaws and then the length/long axis of the pebble could be measured using a ruler/tape or a scale. This unfortunately was not how most candidates read the question. Many described how they would sample pebbles from the river bed by using sampling techniques or even a quadrat and then added how they would measure the size or even weight by weighing them in a container. Very few gave any detail as to how the size or long axis/length of a pebble would be measured on the right instrument.
- (ii) Some candidates thought that the two graphs were complete and made no attempt to plot the two points required. These were two straightforward plots for those that attempted them but a small number used the 0.2 and 0.4 horizontal labels to plot from instead of the velocity and average length statistics they were referred to in Table 2.1. Although most plotted the two points correctly, a few thought one small vertical square equalled one centimetre of length and plotted 8 and 17 too low as two squares on the vertical scale equalled one centimetre length.
- (iii) Splitting the two decisions regarding the hypothesis for the meander and the straight section helped many candidates focus on a manageable answer rather than looking for one overall answer that applied to both. While many candidates gave the correct answers (Meander – true; straight section- false) they did not always back this up with data as clearly stated in the hypothesis and question. A significant minority did not attempt this question.
- (e) (i) Almost all candidates could plot the two bars at 21 and 8 although a few misread the vertical scale and plotted their bars at 20.5 and 6.5 instead. Again a small percentage of candidates did not attempt this question.
- (ii) Most candidates recognised, with detailed statistics, that the size of pebbles and numbers changed; that there were an increased number of pebbles downstream and a decreased number of larger pebbles. Those that just made general statements without any firm statistical evidence were not credited but many gave good answers such as the '*number of pebbles 16–20 mm decreased further downstream from 5 pebbles to 2 pebbles*'. Just to state that there were smaller pebbles downstream echoed the question with no evidence from the data provided.

- (iii) It was important that candidates described any processes of erosion rather than just listed the usual ones of abrasion, attrition and solution. In answering such questions use of correct vocabulary does not gain credit; responses should show an understanding of what the terms means what these mean, e.g. some candidates stated attrition then described abrasion. Some candidates referred to the time that pebbles had been in the river, i.e. the longer time equated to more erosion and the heavier pebbles were deposited earlier so the light ones that travelled further downstream caused a subsequent smaller bedload in the lower course. One misconception that many candidates have is that the average velocity decreases in the lower reaches so pebbles cannot be carried and are therefore deposited. While looking at the long profile of a river and the fact that the gradient gets less steep lower down would suggest that the river is moving more slowly, it is not true as the Bradshaw model mentioned at the start of (e) makes clear. The average velocity of a river actually increases in the lower reaches partly due to more water arriving from tributaries and the increased depth reducing friction at the river bed. This misunderstanding affected candidate choices in (f). A significant number did not attempt this basic test of understanding of the erosional processes taking place in a river.
- (f) The correct answer was rows 2 and 4, i.e. 'channel depth increases downstream' and 'discharge increases downstream.' The other distractors should have been considered but were incorrect. The most popular wrong pair of answers was row 1 and 3, i.e. 'average velocity decreases downstream' and 'channel width decreases downstream.' While it was easier to understand the former incorrect choice, it was strange that candidates thought the width of a river was less downstream.