

GEOGRAPHY

Paper 0460/11
Paper 11

Key messages

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

- ensure that the examination rubric is followed correctly, answering 3 questions, one from each section
- select the three questions with care. Read them all through and study the resources provided with them before making a choice
- answer all parts of the three chosen questions
- read the question carefully. If it helps underline command words and words which indicate the context of the question
- respond in the correct way to command words used in questions, in particular ‘describe’, ‘explain’ and ‘compare’
- identify the correct focus specified in the question stem – e.g. global or local effects, pull or push factors, problems and benefits
- ensure that they respond correctly to key words such as ‘sites’ (**Q2(b)(ii)**), ‘economies’ (**Q5(b)(ii)**), ‘managed’ (**Q5(c)**), and ‘relief’ (**Q6(a)(iv)**)
- learn the meanings of geographical words and phrases in order to be able to define and accurately use geographical terminology. When defining words or phrases candidates should not simply repeat a word or words as part of their definition
- understand the difference between describing a distribution from a map by referring to general patterns and describing the location of a feature or place by giving distances and directions from named places
- use the mark allocations and answer space provided in the question and answer booklet as a guide to the length of answer required
- write as clearly and precisely as possible avoiding vague, general statements
- write in full wherever possible, especially in the final two parts of each question, ensuring that ideas are developed with the correct focus
- perform basic skills using graphs, photographs and maps of various types, referring to them in an appropriate way to support ideas rather than directly lifting material from them without any interpretation
- express themselves as clearly as possible avoiding vague, general statements
- have a range of case studies so that appropriate ones can be chosen for the topics tested
- ensure that each case study used is at the correct scale, e.g. settlement, country or area. The syllabus identifies the scale required for each case study
- avoid writing a long introduction to any question at the expense of answering it in detail

- develop points and link ideas wherever possible in case studies and include place detail
- when using the extra pages at the back of the question and answer booklet indicate that the answer is continued and clearly show the number of the question on the extra page.
- do not use extra sheets of paper until the additional lined pages are full.

General comments

This was the first examination testing the revised syllabus. It differentiated effectively between the candidates of a wide range of ability. Increasing numbers in this cohort performed well across the paper and a range of excellent responses were seen to all questions. Most candidates were able to make a genuine attempt at their chosen questions, however, weaker candidates inevitably found it difficult to interpret questions, use resource materials and answer coherently.

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

Questions 1, 3 and 5 were the most popular questions within each section. There were good answers seen to all questions, including those requiring extended writing, particularly the case studies on under-population, volcanoes and food shortages. High quality answers in these case studies were characterised by a range of developed ideas and the inclusion of place detail which is required for full marks (level 3). Many weaker responses in the case studies tended to rely on generic ideas with little place detail to support them while others were characterised by the use of simple statements (level 1). It is an increasing trend to write long and unnecessary introductions with place detail and background information. This is not required, it gains no marks and time and space would be better used focussing on the actual question.

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

Comments on specific questions

Question 1

(a) (i)(ii) Most answers were correct.

(iii) This was generally well answered, with most candidates being able to recognise a range of difficulties experienced by migrants, such as finding appropriate work, being able to afford housing and experiencing discrimination. Some weaker candidates were not sufficiently specific, writing single word responses such as 'work' or 'housing', not making it clear exactly what the difficulties were.

(iv) Most candidates recognised that receiving international migrants is likely to benefit Mexico in a range of different ways and there were many answers which scored high marks. Typically answers referred to the labour force (e.g. it increases in size, potentially widens the skills base and provides people who will do jobs which locals will not do) or the increase in money circulation as a result of a larger market and potentially increased tax revenues stimulating development and economic growth. A small minority of candidates wrongly wrote about the benefits to the actual migrants, while others lost marks through lack of precision or vague comments, e.g. 'the country gets more money'.

(b) (i) This was a good discriminator. There were some excellent answers which concisely compared the pattern between the two periods with accurate statistics, while others simply referred to statistics, not always with sufficient accuracy, and without contextualising them.

- (ii) There were many good answers which identified a range of appropriate pull factors. Usually the emphasis was on employment, health care and education and many candidates developed their ideas well. Weak candidates made simple generalisations about quality of life, facilities, safety or wealth, all of which needed more precision for credit, while a few wrote about pushes rather than pulls.
- (c) There was a range of case studies and the focus of answers should have been on explaining the problems caused by under-population rather than writing about the reasons for it or the solutions, to which some candidates referred, often in lengthy introductions or conclusions. A small minority wrongly wrote about over-population or selected an over-populated country and wrote about under-population. While case studies on Australia and Canada tended to be the most popular and best examples there were other examples which were used to good effect. Some answers gave excellent details with developed ideas and place detail, however others were somewhat vague with simple references which were little more than generic references.

Question 2

- (a) (i) While some candidates correctly focussed on the critical coastal location of P and Q many did not do so and referred to urban areas, roads or the railway line. While clearly such factors would benefit a port, one would not develop if it did not have a location which enabled access to the sea.
- (ii) This discriminated well with those candidates who made effective use of the map evidence referring to the deeper water at Q and the large areas of mud which may cause problems for ships, especially at low tide.
- (iii) This was generally well answered with most candidates correctly referring to the proximity of the beach, along with road and rail access.
- (iv) Most candidates were able to identify relevant reasons such as the presence of roads, flat land and a water supply, with many being able to develop their ideas to explain them, e.g. 'there are main roads and railways so raw materials and finished products can be transported'.
- (b) (i) Most candidates correctly described the difference in shape of the settlements or used the correct terms, linear and nucleated. Fewer referred to differences in their size, though some impressively did use the scale to good effect. Some weaker responses ignored 'size and shape', writing about other features of the settlements, while others did not make a comparison as required.
- (ii) This was a good discriminator. The question was about site not growth and many valid factors were suggested by candidates. Better answers referred with precision to a number of relevant factors (e.g. relief, water supply, fertile land, etc.), in some cases developing their ideas for further credit while weaker ones wrote in vague terms, for example about issues such as 'resources', 'transport' or the 'weather'.
- (c) Most candidates chose a valid example, many examples of large cities were seen but smaller settlements worked equally well. The best case studies described and explained the service provision, with the more impressive of these responses including place detail and using appropriate terminology such as settlement order, threshold population and sphere of influence (level 3). Weaker candidates did little more than listing the services provided in their chosen settlement (level 1).

Question 3

- (a) (i) Most candidates used the information in the key and correctly stated that the Richter Scale measures the magnitude of an earthquake.
- (ii) Generally this was well answered and most candidates gained full credit. A number of candidates did not answer the question.
- (iii) Describing a distribution requires candidates to make generalisations and those who did so scored high marks for reference to ideas such as the uneven nature of the distribution and the fact that earthquakes have occurred in clusters, generally in the western part of the country. Weaker responses referred to specific earthquakes, including irrelevant detail about the magnitude, and some wrote about earthquakes which were not in Mongolia. A small but significant proportion mixed up east and west.
- (iv) This was generally well answered with many responses including reference to subduction, friction and the build-up and release of pressure. A significant minority however gave simplistic responses about plates 'colliding'.
- (b) (i) Many responses did not include good definitions of all three of these important terms and relied on Fig. 6 to create definitions, some of which were too vague (e.g. the focus is where plates meet', 'seismic waves come out of the focus').
- (ii) This was generally well answered, with many candidates describing different effect of earthquakes on people, both long term and short term. Responses that did not gain much credit tended to do so as a result of focussing on a narrow range of effects, such as injury and death, or writing vaguely about 'destruction' and 'damage'. Several candidates wrote about the impacts of tsunamis which were acceptable answers.
- (c) For this case study the name of an area was accepted or the name of a volcano. A country name was only acceptable if that country was small, e.g. Montserrat. The most popular examples were Mt St Helens and Hawaii. New Zealand, Iceland and Japan were used by many candidates, however the candidates needed to be precise in terms of the part of the country where the volcano is located on order to access full marks. A maximum of 5 marks are awarded if an inappropriate example is chosen and relevant generic ideas included.

Having chosen an appropriate example some wrote fluently and in detail about the opportunities provided by the specific volcano they had selected but many wrote simple accounts in general terms at level 1. Some candidates wrote about the problems caused by their chosen volcano rather than the opportunities as required, thereby gaining no marks.

Question 4

- (a) (i) Many candidates named an area of Equatorial climate such as the Amazon Basin or Kalimantan, however some named entire continents or countries, which were too broad for credit.
- (ii) Most candidates were able to gain credit by referring to the location on or near the Equator or between two relevant lines of latitude north and south of it. Common errors were in responses that referred to the entire area between the Tropics or name continents.
- (iii) Generally parts A and B were answered well, although in some responses there appeared to be some confusion between the meaning of the command words describe and explain, so confusing their responses or repeating themselves. While candidates who had read and responded to the question carefully wrote excellent responses referring to the position near the Equator and the consequent processes resulting in large amounts of heat and rainfall all year round, some candidates wrote about the properties of the rainforest flora and fauna rather than the climate.

- (b)(i)** Many candidates used the material in Fig. 8, linking ideas well to explain how deforestation affects local ecosystems. Weaker responses consisted of little more than copying out individual labels or writing about global impacts rather than local ones.
- (ii)** This was a good discriminator. Weaker responses did not focus on global impacts on the natural environment and wrote either about local impacts or impacts on people. Some did both and wrote about the impacts on local tribes in the Amazon rainforest for example. In contrast many good quality responses focussed on various impacts relating to the atmosphere, such as global warming and changes in the amount and distribution of precipitation, correctly focussing on how these have impacts on the natural environment.
- (c)** There were some excellent explanations of why a desert is hot and dry, with stronger responses developing their ideas, typically those which explained the lack of rainfall. In some cases place specific references were made to the chosen desert or relevant statistics quoted, however many explanations were generic. Nevertheless they showed a good and detailed understanding of the complex atmospheric processes involved. As expected weaker candidates showed little understanding of these processes, with largely descriptive, and in many cases irrelevant, answers.

Question 5

- (a)(i)** Most candidates correctly identified El Salvador.
- (ii)** Most candidates described the generally positive relationship and many illustrated it by using accurate statistics derived from Fig. 9. Statistics were only valid if two or more countries were used as statistics from one country alone were insufficient to show a relationship between the variables.
- (iii)** While most candidates were able to gain credit for stating three appropriate ways in which people obtain water in LEDCs some responses were not precise enough, referring generally to 'rocks', 'buying water', 'rain' or from overseas for example.
- (iv)** Good knowledge was shown here by many candidates, with reference particularly to preventing water borne diseases and the regular requirement of water to prevent dehydration. In addition there were many candidates who clearly explained the need for a reliable supply of water to produce and prepare food hygienically. Weaker responses tended to be vague with unspecified responses to 'disease' and 'cleanliness' and/or no real attempt to link this with increased life expectancy.
- (b)(i)** Some responses did not focus on the command in the question to 'describe three features'. Instead many focussed on the use and value of the dam and the nature of the vegetation surrounding it, or the transportation links to urban areas, rather than describing it.
- (ii)** This was generally well answered with well-informed candidates discussing a range of valid ideas. Some candidates lost marks by not expanding on where the water was being used (e.g. industry, farming) and why this was economically valuable. Others included irrelevant details about the human or environmental values of dams.
- (c)** Examples were accepted at any scale thus an area such as Amazonia was acceptable as was the immediate vicinity of a factory. Any economic activity was acceptable, however, most good examples referred to lumbering (or any activity involving deforestation) and the tourist industry. Sadly, however, for many candidates this was their lowest scoring case study. While many candidates chose an appropriate example of an economic activity they focussed largely on how the natural environment was being threatened rather than explaining how the threats were being managed. The question only asked candidates to 'state' how the activity threatens the natural environment, thus a sentence or two would have been sufficient. Management strategies seemed to have been considered by candidates merely as an afterthought.

Question 6

- (a) (i) Many candidates knew what processes were but did not relate their answers to an 'agricultural system'. A simple reference to 'things which are done *on a farm* to convert inputs into outputs' was all that was required.
- (ii) Many candidates gained full credit here as they were familiar with the difference between 'arable' and 'pastoral' although a small minority reversed their answers.
- (iii) This was a good discriminator. Good responses used the ideas in Fig. 10 well to suggest that mixed farmers can benefit from using animal and crop waste as inputs, as well as having a variety of items to sell so that if one type of product failed another one may succeed. Weaker candidates simply referred to farmers having 'more to sell' or 'making more money'.
- (iv) There were many good answers with a range of valid ideas which showed a good understanding of this issue. The question was interpreted well by the majority of candidates, with only a few not knowing the meaning of 'relief' and discussing other factors which affect agricultural land use.
- (b) (i) Most candidates managed to make at least one valid comparative point, however a small number mixed up east and west.
- (iii) This was another good discriminator. Most candidates understood what was required and scored something, typically for reference to wealth and land availability. Higher scoring responses referred to a range of ideas, including access to a market and tradition/culture, developing them as appropriate.
- (c) Many different case studies were used at a variety of scales, however the Sahel and Swaziland were popular choices. Almost all candidates wrote about the effects, though many included much unnecessary introductory locational information and irrelevant detail about the causes of food shortages. Such candidates then added little which was valid, other than a reference to people starving. Better candidates developed ideas about one the effects, with reference to the impacts of lack of food on the body, on health and on the ability to work. Some developed their ideas further to explain how this had led to much poverty and outward migration. Many good answers at level 2 were unable to achieve level 3 as they did not contain place detail.

GEOGRAPHY

Paper 0460/12
Paper 12

Key messages

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- ensure that the examination rubric is followed correctly, answering 3 questions, one from each section
- select the three questions with care. Read them all through and study the resources provided with them before making a choice
- answer all parts of the three chosen questions
- read the question carefully. If it helps underline command words and words which indicate the context of the question
- respond in the correct way to command words used in questions, in particular 'describe', 'explain', 'identify' and 'justify'
- identify the correct focus specified in the question stem, e.g. death rates or birth rates, dispersed or nucleated settlements, positive and negative impacts
- ensure that they respond correctly to key words such as 'similarities' (Q2aii), 'hierarchy' (Q2c), 'manage' (Q3c), 'natural vegetation' (Q4c) and 'conserve' (Q6bi)
- learn the meanings of geographical words and phrases in order to be able to define and accurately use geographical terminology. When defining words or phrases candidates should not simply repeat a word or words as part of their definition
- understand the difference between describing a distribution from a map by referring to general patterns and describing the location of a feature or place by giving distances and directions from named places
- use the mark allocations and answer space provided in the question and answer booklet as a guide to the length of answer required
- write as clearly and precisely as possible avoiding vague, general statements
- write in full wherever possible, especially in the final two parts of each question, ensuring that ideas are developed with the correct focus
- perform basic skills using graphs, photographs and maps of various types, referring to them in an appropriate way to support ideas rather than directly lifting material from them without any interpretation
- express themselves as clearly as possible avoiding vague, general statements
- have a range of case studies so that appropriate ones can be chosen for the topics tested
- ensure that each case study used is at the correct scale, e.g. country or area. The syllabus identifies the scale required for each case study

- avoid writing a long introduction and/or conclusion to any question at the expense of answering it in detail
- develop points and link ideas wherever possible in case studies and include place detail
- when using the extra pages at the back of the question and answer booklet indicate that the answer is continued and clearly show the number of the question on the extra page
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The change in the rubric caused relatively few problems and most candidates selected a question from each section as required. There were a few who penalised themselves by answering both questions from within a section, in which case they were awarded the mark for the higher scoring question. As in previous years there were some candidates who ignored the rubric altogether by answering four or more questions, however it was rare to encounter papers where all questions had been attempted. Typically if all questions had been answered they were all very weak and/or parts had been omitted from each.

Question 1 was the most popular question, while the two questions in each of Sections B and C were roughly of equal popularity. There were good answers seen to all questions, including those requiring extended writing, particularly the case studies on over-population, management of coastal erosion, desert vegetation and the impacts of a transnational corporation. High quality answers in these case studies were characterised by a range of developed ideas and the inclusion of place detail which is required for full marks (level 3). Many weaker responses in the case studies tended to rely on generic ideas with little place detail to support them while others were characterised by the use of simple statements (level 1). It is an increasing trend to write long and unnecessary introductions with place detail and background information. This is not required, it gains no marks and time and space would be better used focussing on the actual question.

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

Comments on specific questions

Question 1

- (a) (i) Many candidates showed an understanding of death rate, where candidates did not score the mark it was usually because they did not include reference to 'per year'.
- (ii) This was very well answered though a few candidates gave figures rather than the country name.
- (iii) This was generally well answered, with most answers referring to disease, healthcare, water supply and food supply as reasons for variation in death rates. Some candidates were not sufficiently specific, (e.g. better climate, natural disasters, crime or standard of living) or they referred to ideas which are unlikely to have a significant effect on a country's death rate (e.g. volcanic eruptions, road accidents).
- (b) (i) This was a good discriminator. There were some excellent answers which carefully described the graph in four sections and included years and data, while in contrast many weaker candidates did not consider changes in the rate of decline over the time period. Common errors were inaccurate reading of figures from the graph, and inaccurate use of descriptive terms such as 'steep', 'gradual' and 'steady'. Despite the question only asking for description some candidates tried to explain the trends by suggesting reasons for the decline.

- (ii) There were many good answers which discussed the reasons covered in the passage (e.g. two child limit, campaigns for abortion or contraception). Some candidates referred to penalties but did not say what they were, while others did not say what the penalties were for. Other factors were included by some candidates and credited (e.g. later marriage, increased pension provision, mechanisation of farming.)
- (iii) Again some very good answers were seen and the question differentiated well. Better answers referred with precision to a number of relevant problems such as ageing population, less money being raised by taxes, lack of armed forces, decline in the economy and shortage of workers, in some cases developing their ideas for further credit, while weaker ones wrote in vague or simplistic terms. Some candidates examined the problems for the younger generations, such as closure of schools, which were acceptable. Some candidates made the error of focussing on why birth rates were low, repeating points they had made in (ii), perhaps not understanding the reference in the question to governments being 'concerned'.
- (c) There was a range of case studies and the focus of answers should have been on explaining the problems caused by over-population rather than writing about the reasons for it or the solutions, to which some candidates referred, often in lengthy introductions or conclusions. While case studies on Nigeria, China, Bangladesh and India tended to be the most popular and best examples there were other examples which were used to good effect. Some answers gave excellent details with developed ideas and place detail or appropriate statistics (level 3), however others were somewhat vague with simple ideas which were little more than generic references (level 1).

Inevitably some candidates who selected China drifted into the one child policy in their answer while there was some confusion in the answers of some candidates between over-population and rapid population growth.

Question 2

- (a) (i) While some candidates could define the term 'rural' settlement by referring to the countryside or similar others struggled to do so. Some defined 'urban' while others simply gave examples of rural settlements. Some answer referred to rural settlements being lacking in development, which may of course be true in some countries, however such answers did not define the term as required.
- (ii) This discriminated well with those candidates who made effective use of the map evidence referring to the linear nature of both settlements, the north-south orientation or the fact that both are surrounded by fields.
- (iii) Many candidates were able to comment on the scattered buildings, separated by large areas of countryside, fields or farmland. Despite the assistance provided by the map weaker candidates were unable to display any understanding of the term 'dispersed rural settlement'.
- (iv) Few candidates understood the fundamental reasons behind the growth of a nucleated settlement, many simply referring to the growth of settlements generally. The common relevant idea mentioned was the growth around a crossroads, however many answers focussed on provision of services, migration into the settlement and suggestions as to why a settlement grew up rather than why it grew up in a nucleated pattern.
- (b) (i) This question was well answered with three clear points being made by many candidates who used the map to identify changes such as the growth of high class residential areas, changes in industrial structure and developments in the transport network.
- (ii) This was a good discriminator. The question was about the industrial function of Llanelli and many valid factors were suggested by candidates using evidence from the map. Better answers referred with precision to a number of relevant factors (e.g. the port, transport, workforce, availability of fuel and power, etc.), in some cases developing their ideas for further credit while weaker ones wrote in vague terms, for example about issues such as 'resources' or 'transport'.

- (c) There were relatively few high quality responses which contained developed ideas and place specific information and for many candidates this was their weakest case study. Where candidates did achieve the highest level they focussed on an area, naming cities, towns and villages in the area, and linked shops and services provided to the different sized settlements in the chosen area. However many candidates focussed on a city rather than an area which made it more difficult to show the hierarchy of services. Indeed many did not seem to understand the concept of a hierarchy of service provision as they simply described different services and how they created jobs.

Question 3

- (a) (i) Many candidates repeated the words 'deposition' or 'depositing' and/or 'coast'. Creditable answers used 'dropped' or 'left behind' as suitable alternatives to show that they understood what was meant by 'deposition' and 'beach' or 'by the sea' to show their understanding of 'coastal'.
- (ii) Generally this was well answered and most candidates gained some credit. A small number of responses confused constructive and destructive waves..
- (iii) This discriminated well and some excellent answers were seen. However, many other candidates were not totally clear in their explanation of the sequential process. Many candidates referred to the prevailing wind, swash and backwash, however, some did not refer clearly to the angles of swash and backwash which are critical in the longshore drift process. Some candidates drew diagrams but few were really helpful as they were either not labelled or simply repeated information from their written answers.
- (iv) Many candidates explained how a spit was formed rather than describing its main features as required. The most common correct responses were for the curved end, the spit being composed of sand and shingle and the marsh which frequently develops behind it.
- (b) (i) Many candidates used the evidence in the photograph well and gained full marks for this question, referring to features such as cliffs, headlands and bays, notches and caves. Reference to pebbles/loose rocks was not accepted as evidence of coastal erosion, unless candidates referred to this being at the base of the cliff or similar.
- (ii) This was another good discriminator. There was a range of answers, many well prepared candidates including and developing valid ideas about the impact of rock type, waves, wind, vegetation and management schemes. Excellent development was seen, with some candidates exploring the variation in erosional processes in areas where specific named rock types (eg chalk and clay) outcrop. Weaker responses typically referred in very simple terms to little more than the waves and winds.
- (c) There were many excellent answers, most focussing on regions of the UK, especially Holderness, and such answers tended to include valid place detail. The most popular management techniques were groynes and sea walls, with good answers explaining how these defences worked, while weaker answers just identified the management techniques. Some candidates included unnecessary detail in introductions about why the area of coastline was being eroded, while others evaluated the techniques, which was also not what the question required. Candidates were not penalised for doing this, however they wasted time, which could be used to add further relevant description of the measures or explanation of how they provide protection.

Question 4

- (a) (i) Most candidates correctly identified 'rainfall' as showing the greatest difference.
- (ii) Most candidates were able to score at least one mark by correctly naming one or both of the instruments. There were some wild guesses while others struggled to properly name the wet and dry bulb thermometer. Hygrometer was of course accepted as an alternative but not hydrometer.
- (iii) Generally this question was well answered. Many good answers named the rain gauge, referred to a specific time period between measurements being taken and a location factor such as 'in an open area'. Weaker answers tended to only mention the rain gauge or focussed on the location of it rather than how it is used to measure the rainfall.

- (iv) There were many good answers which referred typically to the white colour, the slats for ventilation and the box being off the floor, explaining how these characteristics ensure accuracy. As in the previous question some candidates made the mistake of describing siting factors rather than features, while others described the characteristics without explaining why they ensure information collected is accurate. Some candidates focussed wrongly on the instruments themselves rather than the Stevenson screen.
- (b) (i) This question discriminated well and descriptions varied in quality and accuracy. Weaker candidates did not read the graph accurately, and some mixed up the temperature and rainfall scales. Some candidates described the climate features month by month. More perceptive candidates recognised and gave the general description of 'hot and dry' and referred to features such as the range of temperature and rainfall with appropriate months and accurate statistics.
- (ii) There were some excellent explanations of why there are desert climates close to the tropics, with stronger candidates developing their ideas, typically those which explained the lack of rainfall such as descending air, high pressure, the continental locations, wind directions, rain shadow effect and distance from water bodies. Such answers showed a good and detailed understanding of the complex atmospheric processes involved, however many candidates showed little understanding of these processes, with largely descriptive, and in many cases irrelevant, answers, for example about the vegetation. Common mistakes were to concentrate the explanation on processes occurring at the equator, or to simplistic ideas such as 'it doesn't rain therefore it is dry', 'there are no clouds' and 'it gets lots of sun therefore it's hot'.
- (c) This was one of the best answered case studies and the Sahara desert was the most popular choice of example. Well prepared candidates wrote about deep or widespread roots, spikes and waxy leaves for example with clear links between the characteristics and adaptations, referring to specific plants (e.g. cactus) to illustrate their points. Some candidates who did not read the question carefully (or did not know the meaning of vegetation) wrote about animals or people, or generally about the desert landscape, while others described the characteristics of desert vegetation with little or no attempt to explain.

Question 5

- (a) (i) Most candidates correctly ranked the four countries.
- (ii) Most candidates scored one mark, usually by simply describing the HDI level in countries each continent in turn rather than interpreting the data and describing 'differences' observed. The map clearly shows that in North America HDI is generally higher and less varied than in South America, which would have been sufficient to score full marks.
- (iii) Some excellent responses were seen with candidates referring to the variety of factors taken into account to derive the HDI figure rather than using just one indicator which measures income alone. Such candidates also referred to the index produced being usually to compare countries, though it was rarely mentioned that change over time can also be observed by it. Weaker responses showed little understanding of the requirements of the question and many wrongly focussed on how developed some countries were compared to others.
- (iv) A good knowledge was shown here by many candidates, with reference particularly to raw materials, access to ports, government corruption, education level and war.
- Weaker responses tended to be vague with unspecified responses to 'poverty', 'natural disasters' and 'disease' and a focus on how the differences in levels of development manifest themselves rather than an explanation of them.
- (b) (i) This was generally well answered and most candidates scored the three marks.
- (ii) Most candidates identified a correct country (Egypt or South Africa), although some named Kenya which was not acceptable. Many answers included appropriate evidence from the data, with many candidates developing their ideas. Some candidates lost marks by simply quoting a statistic without interpretation or not stating that the value was the 'highest' or 'largest' when referring to the specific indicators.

- (c) Many, but not all, candidates were able to identify an appropriate TNC and country where it is located and it was encouraging to see that the majority of candidates at all ability levels gave both sides of the argument. The most popular choices were Coca Cola, Apple, Nike and Toyota, though many others were seen. Ideas were developed relating to employment, exploitation and environmental destruction though most focussed on the people living in the country rather than the environment. Incorrect responses considered positive and negative points for the company rather than the country in which it operates.

Question 6

- (a) (i) Many candidates gave an acceptable definition which showed an understanding that visual pollution 'can be seen' or is an 'eyesore'. Answers which scored no mark gave examples or repeated 'visual', while others referred to the eyes being damaged by pollutants, particularly gases and chemicals.
- (ii) The most common ways mentioned were deforestation, overgrazing and monoculture, although not all candidates used those terms. Incorrect ideas included the overuse of fertilisers, ploughing and irrigation.
- (iii) Most candidates identified three different economic activities from Fig. 9 and were able to score at least one mark, usually for reference to the disposal of waste in water courses by manufacturing industry. There were some precise references to the water pollution caused by the use of fertilizers and pesticides in agriculture and acid rain was used by some candidates to show how transport, industry or power stations pollutes water. Some candidates repeated ideas for different economic activities (e.g. acid rain) – double credit is rarely awarded for the repetition of ideas. Power stations was the least well done as many candidates referred simply to the 'disposal of waste'. Radioactive waste or heated water was accepted as a specific example here but power stations rarely dispose of general 'waste' in water courses in the same way as some industries do.
- (iv) As in previous years there was a large variation in the knowledge and understanding of the process of global warming. Only the best candidates gave a detailed explanation of the sequence from identifying the pollutants to the increase of the temperatures. Many candidates wrote vaguely about 'fumes' or 'gases' and there is still much confusion between the process of global warming and the destruction of the ozone layer. The introduction of the ozone layer into any answer about global warming only serves to confuse, not clarify understanding.
- (b) (i) Many candidates scored 1 or 2 marks, however scoring full credit was not common. Some weaker responses defined the three terms accurately but that was not what the question required. The most common relevant answers explained about using fewer resources by not making new products, but this idea was often repeated.
- (ii) This broad question allowed good discrimination. The most popular correct answers referred to finite resources, habitat protection, extinction of species and global warming, many strong responses including perceptive development. Some weak answers were either simplistic, too extreme in terms of destruction of the universe or their use of language and geographical terms was too vague to gain credit. Alternatively they just focussed in one issue, frequently global warning, which was unfortunate for those candidates who continued to confuse it with ozone depletion.
- (c) Almost all candidates chose an appropriate country, though a few named a region or settlement instead. Popular countries which were identified, included Iceland, France, Germany and the U.K., though any country was acceptable, including LEDCs. Some good LEDC answers were seen about fuel wood. Weaker candidates were usually able to achieve level 1 by referring to at least one type of energy used in that county (or simply listing several) however many found difficulty in developing their ideas and providing details which described how energy is supplied. Some candidates used statistical information to develop their ideas while others gave details of the methods of energy supply. However, some incorrectly developed their answer by explaining the advantages and disadvantages of the energy types, which were not relevant.

GEOGRAPHY

Paper 0460/13

Paper 13

Key messages

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

- ensure that the examination rubric is followed correctly, answering 3 questions, one from each section.
- select the three questions with care. Read them all through and study the resources provided with them before making a choice.
- answer all parts of the three chosen questions.
- read the question carefully. If it helps underline command words and words which indicate the context of the question.
- respond in the correct way to command words used in questions, in particular 'describe', 'explain' and 'compare'.
- identify the correct focus specified in the question stem – e.g. global or local effects, pull or push factors, problems and benefits.
- ensure that they respond correctly to key words such as 'rural' (**Question 1(a)(iii)**), 'economic' (**Question 1(a)(iv)**), 'characteristics' (**Question 4(a)(iv)**), and 'reasons' (**Question 6(a)(iv)**).
- learn the meanings of geographical words and phrases in order to be able to define and accurately use geographical terminology. When defining words or phrases candidates should not simply repeat a word or words as part of their definition.
- understand the difference between describing a distribution from a map by referring to general patterns and describing the location of a feature or place by giving distances and directions from named places.
- use the mark allocations and answer space provided in the question and answer booklet as a guide to the length of answer required.
- write as clearly and precisely as possible avoiding vague, general statements.
- write in full wherever possible, especially in the final two parts of each question, ensuring that ideas are developed with the correct focus.
- perform basic skills using graphs, photographs and maps of various types, referring to them in an appropriate way to support ideas rather than directly lifting material from them without any interpretation.
- express themselves as clearly as possible avoiding vague, general statements.
- have a range of case studies so that appropriate ones can be chosen for the topics tested.
- ensure that each case study used is at the correct scale, e.g. settlement, country or area. The syllabus identifies the scale required for each case study.
- avoid writing a long introduction to any question at the expense of answering it in detail.
- develop points and link ideas wherever possible in case studies and include place detail.
- when using the extra pages at the back of the question and answer booklet indicate that the answer is continued and clearly show the number of the question on the extra page.
- do not use extra sheets of paper until the additional lined pages are full.

General comments

This was the first examination testing the revised syllabus. It differentiated effectively between the candidates of a wide range of ability. This cohort performed well across the paper and a range of excellent responses were seen to all questions. Most candidates were able to make a genuine attempt at their chosen questions, however weaker candidates found it difficult to interpret questions, use resource materials and answer coherently.

The change in the rubric caused relatively few problems and most candidates selected a question from each section as required. There were a few who penalised themselves by answering both questions from within a section, in which case they were awarded the mark for the higher scoring question. As in previous years

there were some candidates who ignored the rubric altogether by answering four or more questions, however it was rare to encounter papers where all questions had been attempted. Typically, if all questions had been answered they were all very weak and/or parts had been omitted from each.

Questions 1, 4 and 6 were the most popular questions within each section. There were good answers seen to all questions, including those requiring extended writing, particularly the case studies on squatter settlements, flooding and food shortages. High quality answers in these case studies were characterized by a range of developed ideas and the inclusion of place detail which is required for full credit (Level 3). Many weaker responses in the case studies tended to rely on generic ideas with little place detail to support them whilst others were characterised by the use of simple statements (Level 1). It is an increasing trend to write long and unnecessary introductions with place detail and background information. This is not required, it gains no credit and time and space would be better used focussing on the actual question.

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

Comments on specific questions

Question 1

- (a) (i) The majority of candidates gained credit for correctly identifying the definition for migration but significant numbers omitted any reference to 'people moving' and therefore could not gain credit.
- (ii) The vast majority of candidates correctly matched the key term with the definition and also completed it neatly and clearly. There were some answers which only had one arrow which was insufficient to score even if correct.
- (iii) Most candidates gained credit for the 'loss of workers' idea but only the more able candidates developed their response by pointing to the reduction in food production and the split in families as the fathers left for the city. A few wrote wholly from the perspective of urban pull factors which failed to score any credit.
- (iv) Candidates mainly gained credit on the ideas of 'more jobs' which were 'more highly paid' and 'lower house prices'. Some referred to wider economic indicators such as a 'higher GDP per capita' but where availability of better services such as health care or education was mentioned it was rarely put in the context of a richer country being able to afford it so did not score any credit.
- (b) (i) Many candidates struggled to understand the term 'net migration' i.e. the overall difference between in and outflows of people. Instead candidates went into detail comparing at length each individual element e.g. 'Indonesia's emigration is larger than Singapore's'. Where candidates did use net migration calculations they often failed to express it in millions or omitted the minus sign to show Indonesia's net loss of people. However, some very good answers were seen and those candidates that understood what 'net migration' is and how it is calculated were able to score full credit.
- (ii) Most candidates scored well on the positive impacts of migration for the destination country such as 'a larger workforce, cheaper labour, more taxes paid to government' etc. Many wrote at least 3 creditable points here with many full mark answers also seen. However, there were some candidates who wrote about the negative outcomes such as racial tension or negative impacts on the losing country and so did not gain credit for this.
- (c) Where the candidate had identified a city (as many named countries such as USA as their example), they were usually able to give some detailed and developed ideas about the problems facing migrants living in squatter settlements, particularly those concerned with the lack of hygiene of the environment, water supply, lack of job opportunities and discrimination. Even where a candidate had identified the wrong example they were usually able to gain 5 credit for including some developed ideas.

Question 2

- (a) (i) Very few inaccurate answers were seen here and the vast majority of candidates were accurate within the 1% margin allowed between 14–16%.
- (ii) Most candidates were able to read off the percentage values correctly from the graph and use a comparative word to describe the difference thereby gaining the full 2 credit in most instances.
- (iii) Many answers were speculative about future sites for building which was not relevant. Where candidates understood the land is and will remain open space, there were appropriate land uses suggested such as 'parks, gardens or sports fields'. Although weaker candidates thought it could be farmland which is unlikely in an MEDC city.
- (b) (i) The vast majority of candidates could identify relevant urban land uses from the photographs provided. The most common land uses identified were 'housing, factories and car parks'.
- (ii) This was a good differentiator as a variety of responses were seen, some scored full credit and many scored just 1 or 2 marks. Weaker answers tended to explain what a port was rather than the factors which would allow one to establish and grow like proximity to the sea, deep water, etc.
- (iii) This question was also a good differentiator. Most candidates were able to identify some relevant features such as 'high land values leading to the building of skyscrapers' but only the most able could go on to gain full credit with a range of well-described characteristics. However, many candidates talked about housing development in the CBD which is not a characteristic of this zone. Vague responses were also seen referring to businesses and pollution which need further exemplification if they are to gain any credit.
- (c) Overall this question was generally not well-answered. Most candidates relied on the idea of there being more of the features they had described in the previous question without any place specific information. Answers about building a subway often lacked any explanation of why it had been done restricting the answer to Level 1. There were a few good answers seen about London's congestion charge. Some candidates referred to new housing which as for the previous question is inappropriate for the CBD zone. Many responses simply referred to a list of ideas such as 'more shops being built' which is just a simple Level 1 idea and therefore many candidates did not score beyond 3 marks.

Question 3

- (a) (i) Responses to this question were varied. Where the candidate had understood that the weather instrument shown was a barometer and therefore is used to measure 'air pressure' many omitted the word 'air' and so did not score the mark. There were a wide range of incorrect answers seen about humidity and rainfall.
- (ii) The vast majority of candidates scored the the full credit available here. But there were some who gave the extremes of the scale on the thermometers and others who gave the same figure for the max and min temperature with the range being given as zero. Other candidates added the figures together or divided them and clearly had no idea of what to do.
- (iii) Many candidates had learnt the names of the 3 instruments shown in Fig. 4 and scored full credit. Weaker candidates only gave one word like thermometer and some incorrectly thought the anemometer was a wind vane.
- (iv) This question was a good differentiator. Whilst most scored on the idea that the wind speed would not be affected by obstacles if placed on the roof. Only the strongest responses scored full credit for ideas about preventing heat absorption from the sun or the ground etc. Many candidates were able to gain 1 or 2 credit for those simple ideas. Some candidates merely described the characteristics of the Stevenson's screen which did not gain any credit.
- (b) (i) Many candidates were able to score at least 1 mark here and all mark scheme ideas were seen. However, few could accurately name both cloud types. Weaker answers made correct statements about one of the images only which was not comparative and so did not gain any credit.

- (ii) This question was a good differentiator as many candidates described the Hadley Cell in great but inappropriate detail and did not gain any credit. Others were able to respond in good detail describing the processes of 'high temperatures leading to evaporation, rising air, cooling and condensation' and gained full credit. The vast majority of weaker candidates often scored credit for 'evaporation and condensation'.
- (c) Very many candidates ignored the question and wrote in detail about why the rainforest climate was hot and wet. Good answers referred to the need to compete for light and grow tall, the evergreen nature of the forest and the drip tips on leaves which have developed due the climate characteristics. Few candidates however scored full credit because they omitted any place specific information such as an accurate annual rainfall figure or a named tree type, etc.

Question 4

- (a) (i) This question overall was very poorly answered. Many candidates simply did not know the key term and candidates who did often omitted reference to the tributaries which drain water into the main river. It was rare to see a full accurate definition. Candidates should be encouraged to learn full and accurate key terminology and definitions throughout their course.
- (ii) This question was better answered and the vast majority of candidates scored full credit here either for the vertical infiltration/percolation flows or the horizontal throughflow and groundwater flow. There were some who just gave the letters like A and B which was not relevant.
- (iii) The majority of candidates scored 1 mark only for the variation in tree cover. Many went far outside the question brief with statements about surface run-off and absorption by tree roots. Some good answers were seen which referred to the possible variation in rainfall but very few scored full credit.
- (iv) There were many good answers seen here referring to the increase in width, depth, discharge and steepness of the river but far too many believe that steepness controls the velocity of the river and said, wrongly, that A (with all the obstacles of large boulders) would be faster.
- (b) (i) Many answers seen here described the 'location' rather than the 'characteristics' of the delta. Good answers referred to the northerly direction of flow, the distributaries (many said 'tributaries') and some accurately measured the width or length of the delta using the scale well.
- (ii) This question was a good differentiator. Some excellent answers were seen which in some cases included a brief explanation of flocculation. However, some weaker answers were also seen including those using incorrect terms like 'tributaries' and even a number of candidates who thought a delta was formed by the river eroding new channels.
- (c) This question was also a good differentiator. Weaker answers gave the generalised factors which could lead to a flood anywhere such as 'high rainfall' but better answers seen gave actual rainfall figures or explained factors such as 'snow/glaciers melting in the Himalayas' etc. Some answers veered off the requirements of the question to write about coastal floods due to cyclones without reference to the storm surge pushing up the river to cause floods or wrote about global warming and sea level rise. Other candidates also answered on the impacts of flooding which was irrelevant.

Question 5

- (a) (i) The vast majority of candidates were able to accurately read off the figure from the graph and gain the mark..
- (ii) Again, this was generally well answered with the majority of candidates correctly identifying coal and renewables respectively. The most common incorrect response seen was 'nuclear' instead of 'renewables'.
- (iii) This question was also well answered by the majority. Most scored credit on the 'non-renewable, air pollution and global warming' impacts of fossil fuel burning.
- (iv) This question was a good differentiator. Weaker candidates tended to use short and often extreme or vague phrases like 'very dangerous' without reference to the specific circumstances such as a 'leak or reactor meltdown' that would release radiation. Also benefits were generally less understood than the problems. Many candidates wrongly believe that nuclear power is renewable.

Also many vague responses such as 'more energy can be produced' were seen without any reference to using small amounts of uranium. It was rare to see more than 2 credit awarded on this question.

- (b) (i)** Mixed responses were seen here. Where the candidates used geographically valid ways of expressing location such as compass directions or distances from other named features or places they scored well. Weaker answers lost credit by vaguely listing all the places the wind farm was near or next to. Candidates should be advised to use compass directions and distance from or to features when describing locations.
- (ii)** This question was generally well answered as candidates scored well with reference to opponents identifying visual pollution and the impacts of construction on the marine ecosystem, shipping or tourism or birds flying into them. Whilst supporters arguing that low cost electricity can be produced and it is a renewable form of energy. Some referred to the noise produced but at over 10 km distance from the islands this would not be a realistic issue and is likely a reason for siting them offshore (i.e. to reduce the impacts of noise). Overall, all mark scheme ideas were seen.
- (c)** This was generally well done with many candidates gaining Level 2 credit or higher. High tech areas like Silicon Valley or Science Parks in Asian countries tended to score well with place specific detail. There were also some excellent answers on individual plants like Toyota at Burnaston, Derby which had place specific reference to named roads and identified the importance of the UK being in the EU. There were some responses that just selected from the list but then did not go on to name an example – e.g. they chose 'manufacturing' but did not provide an example of a factory and therefore just gave generic ideas which were in many cases simplistic Level 1 answers.

Question 6

- (a) (i)** This was generally well answered with the vast majority of candidates correctly ranking USA, China and Brazil. However, some candidates transposed Brazil and China or referred to Canada or Mexico which were not specified. This is a case of candidates not reading the information in the question carefully enough.
- (ii)** This question was not particularly well answered as many candidates gave examples of water use rather than the locations implied by the terms e.g. 'for showing/drinking'. Where the need to do so was understood most gained credit for domestic being in the 'house/home' but many could not give an alternative word for industry such as 'factories or manufacturing' and just repeated the word 'industry/industrial'.
- (iii)** This was generally well answered as most candidates scored well on this simple task although many quoted all the figures for both places when a simple comparative list would score the credit e.g. 'Canada uses more water than Mexico in industry, domestic use and in total' which would provide full credit.
- (iv)** This question was generally poorly done in contrast to the previous question. Even the strongest responses just repeated the previous answer i.e. Canada has more industry, Mexico has more agriculture. Only rarely did answers explain why e.g. 'Canadians are richer and will have washing machines/dishwashers and will wash their cars and water gardens more often'.
- (b) (i)** This question was generally well answered. Where candidates understood that a source is where the actual water originates from this was answered well. However, too many named the two pipelines which are a means of transferring water rather than a source and so lost the third available mark in many cases.
- (ii)** This question was a good differentiator as where the candidate restricted their idea to the need for a good urban supply of water this was answered fairly well although few gained full credit. Many wrote about the use of water to grow crops but there were many valid answers referring to the increase in hygiene and reduction in disease or drought where there was sufficient water storage and treatment. All mark scheme ideas were seen.

- (c) This question was also a good differentiator with many excellent detailed answers seen but equally many weak vague responses seen too. Where a country or region such as Darfur/Sudan/Ethiopia was given rather than an inappropriate continent such as Africa then answers scored well. Many weaker answers focused on population growth/overpopulation despite the fact that historically there have been no countries with the sort of persistent food shortage and starvation that would entail. Most food shortages are temporary due to climatic variations such as droughts or disruption to farming processes from wars or pests/diseases, etc. Some had also learnt a case study about HIV/AIDS and chose to write on this rather than answer the question set.

GEOGRAPHY

Paper 0460/21
Paper 21

Key messages

- Good answers focused closely on the questions asked and were often very concise.
- Generally, candidates made good use of the data resources and photographs provided and studied them carefully.
- It would help candidates if greater care was taken with mapwork to ensure that responses are accurate and appropriate. Candidates might spend time studying the relevant areas of the map thoroughly.
- Where only one or two lines are provided for an answer, it would help candidates if they responded briefly and to the point. Long answers rewording the question should be avoided.

General comments

Most candidates answered the questions within the spaces provided and avoided the use of the additional pages. Almost all candidates were able to complete the paper in the allotted time. Because of the change to the syllabus, this was the first examination session that the survey mapwork was not based on a map extract from a tropical area. Candidates coped very well with the map from the United Kingdom.

Question 1

- (a) Some candidates scored good marks in this part but sometimes errors occurred with the use of the map key. Most candidates identified the *coniferous trees* correctly in **part (i)**. In **part (ii)**, however, many candidates did not notice the small cross shown on Fig.1 and incorrectly wrote *public telephone* where the correct answer was *place of worship*. Most candidates correctly identified the *main road* in **part (iii)**. In **part (iv)**, where the answer was *101 m* (as shown by the air survey height), a large number of candidates responded incorrectly with *100 m* from the nearest contour line. Candidates identified *Black How* in **part (v)** though a number incorrectly stated *buildings*.
- (b) The syllabus change introduced the ability to complete a cross section and this skill caused problems, with a large number of candidates who did not respond, either to all or most of this part. In **part (i)**, the features labelled **X** were *roads*, and in **part (ii)**, more candidates did correctly identify *Brayshaw*. In **part (iii)**, only a very few recognised the hill shape needed to complete the cross section correctly and these were mainly within the correct height range of 280–300 m.
- (c) Responses such as *the river Ehen provides a supply of water* or *roads meet and form a route centre* scored but simple statements such as *the River Ehen is nearby* or *there are many roads* did not. Very few identified the bridging point, or the castle or meander as a defensive location. The quarries, mine, industrial estate and factory as sources of jobs were ignored almost totally.
- (d) Many candidates scored well in this section, identifying hills, valleys, cliffs, a plateau, steep gradients and a highest point of 352 m, with some achieving full marks. Those candidates who did not understand the meaning of the term *relief* wrote incorrectly about the types of vegetation and lack of settlement.
- (e) There were mixed responses in this part. Whilst a great variety of answers were given in **part (i)** (the correct answer was 50 m or less), the majority agreed that the river was meandering in **part (ii)**. Answers to **part (iii)** were mainly split between the correct answer *to the south* and the incorrect answer *to the north*.
- (f) A whole variety of answers was offered in **part (i)** and candidates are encouraged to compare the distance with the scale line rather than embark on calculations. The correct answer was 2700

metres. In **part (ii)**, many candidates gave a figure within the acceptable range of 9–12°, but incorrect answers spanned the range to 360°.

Question 2

- (a) Most candidates gave an appropriate year within the 1920–24 range allowed in **part (i)**. There were some excellent concise answers such as *slow increase and then rapid increase* in **part (ii)**. Credit was given for quoting correct figures in this part, either the start and end points or the total increase in each case.
- (b) Again the strongest answers were often the briefest, such as *the growth in the MEDCs is much smaller than in the LEDCs*. As a comparison was required, credit was not given for merely stating the figures shown on the graph.
- (c) There were some good responses to this relatively complex part of this question. Generally candidates scored well and found relevant differences, quoting figures as evidence. Most candidates were able to identify the different continents shown.

Question 3

- (a) Most candidates correctly identified some or all of: **P** cliff, **Q** beach and **R** wave-cut platform but spit was frequently and incorrectly identified as an alternative for **R**.
- (b) Whilst most were able to recognise **X** as a bay in **part (ii)**, only some of the candidates correctly identified **Z** to be the headland in **part (i)**.
- (c) Many candidates found this part difficult and there was considerable confusion about tides. The best answers were those that looked carefully at the photograph and did just what the question asked. They found evidence that the beach and wave-cut platform are visible, that the shore appears dark or wet and that the waves don't reach the cliff. Those who scored poorly were often stating what might happen at high tide, not what they could see. The strongest answers were usually simple and concise.

Question 4

Generally answers to this question were relatively weak with many responses displaying limited knowledge and understanding of the weather instruments and how they work.

- (a) Many candidates could not identify these instruments and no credit was awarded for those who only described what the instruments could measure.
- (b) Most candidates correctly stated 25 °C in **part (i)** but only about half correctly stated 35 °C in **part (ii)** and 15 °C in **part (iii)**. One mark was lost if the units were not included at least once.
- (c) Most candidates correctly identified *north* or *north-west*.
- (d) Most candidates identified **C** but there was a surprising number of incorrect answers.

Question 5

This question contained a complex graph and statistics and responses were strong with many candidates scoring full or almost full marks.

- (a) Most candidates correctly plotted the data for Germany in **part (i)**. Some candidates omitted this part and a few misread the axes. In **parts (ii)** and **(iii)**, candidates almost always gave a correct answer, showing that they clearly understood the graph.
- (b) Most responses almost always gained the two marks in **part (i)** *Sub-Saharan Africa* and **part (ii)** *life expectancy*. In **part (iii)**, there were many valid attempts to explain this in slightly different ways. No marks were awarded when candidates merely reworded the question without any attempt at explanation.

- (c) There were many strong answers in this part and a good knowledge and understanding of the indicators of development was widely demonstrated. A few candidates repeated features which were included in the original resource (Table 1).

Question 6

- (a) Candidates often scored two marks in this part for the *steep* sides of the *mountains*. The strongest answers also included reference to the V-shaped valley, the cliffs, the gorge or canyon and occasionally, the stepped valley sides. Many candidates included details of vegetation and settlement, all of which were irrelevant here.
- (b) Many responses here were excellent. Many candidates achieved full credit and answers frequently included many more points than were needed, even up to eight or nine. It is clear that tourism is a topic that is well understood and candidates used the photographs carefully to find relevant evidence to respond to the question posed.

GEOGRAPHY

Paper 0460/22
Paper 22

Key messages

- In questions which ask for a description of relief and drainage, as in **Question 1(g)**, candidates should not waste time including irrelevant information, for example on land use and transport. The term *relief* is generally not well-understood as shown by many of the answers to **Question 6(b)**.
- Where questions ask for a description of features seen in a photograph, candidates should do just that and avoid explanation of the features.
- Paper 22 is a skills paper with emphasis on Assessment Objectives 2 and 3. Because of this, many questions involve description of the features shown on the resources in the question. It is therefore particularly important that candidates are familiar with the meanings of the command words describe, explain and give reasons for, and that they pay attention to these words in the questions.

General comments

Most candidates found the questions relatively straightforward, although Question 4 proved demanding for many candidates. Because of the change to the syllabus, this was the first examination session that the survey mapwork was not based on a map extract from a tropical area. Nevertheless, candidates coped very well with the unfamiliar map from the Republic of Ireland.

Question 1

- (a) Candidates generally identified feature **A** as a *regional road*, feature **B** as a *county boundary* (although credit was given to those who were unfamiliar with this term and answered *country boundary*), the land use at **C** as a *coniferous plantation* and the height of the spot height at **D** as *63 m*.
- (b) Many candidates failed to identify the dispersed settlement; with some possibly thinking the county boundary was a linear settlement.
- (c) The grid reference was answered very well with most candidates gaining credit for *366348*. Candidates who gave an incorrect answer but in the correct grid square were awarded one mark. The distance along the road was not well-answered. In some cases this was because candidates measured the distance in centimetres on the map and then attempted to convert this into metres. Many answers were for distances which were implausible given the scale of the map.
- (d) The reasons for the growth of the settlement at Fethard produced a mixed response. The points most commonly given credit were *route junction* and *river for water supply*. Some candidates did not express their ideas on this sufficiently clearly and referred to many roads or a river, which was not considered to be worthy of credit. Other candidates referred correctly to the gentle slopes but the defensive position of the bend in the river, the castle for defence, or the bridge point were not mentioned. Lists of services not linked to growth were not given credit.
- (e) Many candidates were able to identify the direction of flow of the Anner River as being to the south west. However north east and south east were common incorrect responses.
- (f) Good candidates had little problem in labelling the cross section. The Anner River proved to be the easiest point, while the other two points were more difficult. The position of the R692 road was often not sufficiently accurate to be given credit. The vast majority of candidates used the method of measurement as shown by the example of the third class road on Fig. 2.

- (g) Most candidates gained credit for the description of the relief and drainage but full marks were rare. The most common relief points given credit were: highland or mountain, steep slopes and the highest point of 721 metres. Here some candidates did not give the units and were not given credit. Less commonly, candidates referred to concave slopes, V-shaped valley, many valleys, spurs, lower land in the north west and the ridge. Two marks were reserved for drainage which proved more difficult for many candidates. Credit was given for small rivers, many rivers (or high drainage density), radial drainage, dendritic drainage if located correctly and the waterfall which many candidates spotted. There were also many irrelevant comments about coniferous plantation and roads.

Question 2

- (a) The expected responses were: input = capital, process = marketing and output = waste products. However, credit was given to candidates who gave capital as an output. The response was quite variable.
- (b) Generally candidates found it easier to give differences between the distributions shown on Figs. 5 and 6 than they did to give the similarities. Nevertheless, marks were generally high. A wide variety of responses were given credit. For similarities, these included: in many continents, mostly in the northern hemisphere, many in MEDCs, many in Europe, many in Asia, and few in Africa. Differences commonly given by candidates included: Toyota in Australia but not VW, VW more in Europe, VW more in South America, Toyota more in North America, Toyota more in Asia, VW more clustered and Toyota mainly Asia but VW mainly Europe.
- (c) Candidates suggested a wide variety of reasons for the locations outside of Germany and Japan. These included: the effect of tariffs and taxes, access to markets, cheaper labour, government incentives, site factors such as a cheap land and lower transport costs.

Question 3

- (a) Those candidates who followed the brief in the question to “Describe the vegetation seen in the photograph” scored well and full marks were common. Candidates referred to tall trees, thin trunks, emergents, branchless trunks, straight trunks, palms, banana, shrubs, broad leaves, red or yellow leaves, high density and creepers. Many candidates quoted textbook features of the rainforest which were not visible in the photograph such as buttress roots. Others discussed the fauna or gave reasons why the vegetation took this form. This was all outside the brief of the question and was not given credit.
- (b) Here candidates had to explain how features of the tropical rainforest are adapted to the equatorial climate. For channelled leaves with drip tips, credit was given for the simple idea of shedding water. For broad leaves candidates were expected to say that this is to maximise photosynthesis or transpiration. Perhaps surprisingly, **part (ii)** scored better than **part (i)**.

Question 4

- (a) Almost all candidates were able to correctly complete the bar chart for Ashanti.
- (b) Here candidates were expected to use Fig. 8 which gave information about net population migration of the regions of Ghana and Fig. 7 which showed the location of these regions and then describe the pattern of migration. Successful candidates were able to note patterns such as migration from the north and east and inland areas to the south and west with Greater Accra having the greatest gain. Other candidates simply gave a list of figures from Fig. 8 and did not attempt to relate them to the locations shown on Fig. 7.
- (c) Good candidates were able to relate the data on region of birth in Table 1 to the location of the regions in Fig. 7. They then noted that most migrants to Greater Accra came from neighbouring regions, and suggested easier or cheaper transport as being the reason. Weaker candidates failed to recognise that the data in Table 1 related to migration.
- (d) Most candidates realised that the age groups of migrants shown on Fig. 9 indicated migration for work or education.

Question 5

- (a) Most candidates were able to link the information in Tables 1 and 2 and conclude that these were all shallow focus earthquakes.
- (b) Credit was given to those candidates who noted the very large variation in the number of deaths, with a wide variety of expressions being given credit. Others misinterpreted the question and tried, unsuccessfully, to relate the number of deaths to the magnitude or depth of focus; magnitude and depth of focus were then given incorrectly as reasons in **part (ii)**, despite the evidence to the contrary in Table 2. Amongst the many reasons given credit were: differences in population density, some areas being better prepared, different building types, the time of day and that some earthquakes could have occurred beneath oceans.
- (c) Candidates generally scored better on giving reasons for the earthquakes than they did on describing the distribution. One mark was reserved for each part. For the reasons, destructive plate margins, subduction and build up and release of pressure were all commonly referred to. Descriptions of the distributions rarely got further than noting that most of the earthquakes were at the margins of the Eurasian, Pacific and Australian plates. Points such as that many were in Asia, many were in Japan, many were in Indonesia, one was in South America, one was in China and one was in the Pacific Ocean were rarely mentioned.

Question 6

- (a) Many candidates selected the two ways of increasing the area cultivated from: irrigation, deforestation, drainage, using areas of bush or natural vegetation and terracing. The two ways of making agriculture more intensive were chosen from: adding more fertiliser, improved crop varieties and improved methods of cultivation or harvesting. Mechanisation was allowed once under either heading.
- (b) Many candidates managed to score full marks on this section by noting that the steep valley sides were uncultivated bush and the gentle valley floor was cultivated. The land use of the valley sides proved the biggest difficulty. As in the past, there were many candidates who did not know the meaning of the term relief and who omitted this part.

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Paper 0460/23
Paper 23

Key messages

- When giving figures to support answers, candidates should always state the correct units, e.g. for altitude or population density.
- Candidates should be encouraged to measure grid references using the method described in the syllabus, rather than attempting to judge them by eye.
- Paper 23 is a skills paper with emphasis on Assessment Objectives 2 and 3. Because of this, many questions involve description of the features shown on the resources in the question. It is therefore particularly important that candidates are familiar with the meanings of the command words describe, explain and give reasons for, and that they pay attention to these words in the questions.

General comments

The questions proved to be of fairly equal difficulty. **Question 4** and **Question 5** were found slightly easier by the candidates and **Question 6** was found perhaps a little more difficult. Generally the candidates showed a good grasp of the basic techniques for successful interpretation and analysis of data. Most students seemed able to cope with handling the wide variety of ways in which data was presented to them.

Because of the change to the syllabus, this was the first examination session that the survey mapwork was not based on a map extract from a tropical area. Nevertheless, candidates coped very well with the map from the United Kingdom.

Question 1

- (a) Most candidates were able to identify feature A, a triangulation pillar; feature B, a mast; feature C, a youth hostel; D, Leam Hall; E, non-coniferous wood and F a primary route **Part (vi)** was the most difficult.
- (b) When labelling the cross-section, some candidates produced accurate answers, but most often there was at least one error. The most common correct answer was for the district boundary, which was in the bottom of a pronounced valley shape and therefore easy to locate on the section line, unlike the River Derwent, which flowed in a much wider valley. A few candidates had the features in the wrong order, reversing the section line.
- (c) Candidates were usually successful in selecting two tourist features at the village of Eyam. Possible answers were hall, museum, (or place of tourist interest instead of these), parking, youth hostel and telephone. A direct copy of the entire key line for parking or telephone invalidated a few answers. Some candidates selected their answers from areas away from the village of Eyam, while others chose items from the key which were not represented on the map.
- (d) Two artificial features, created to keep the railway as level as possible, were the tunnel and cuttings. Most candidates saw the tunnel, but some had confused cuttings and embankments.
- (e) For the distance along the B6465 road from the southern edge of the map to the junction at Wardlow Mires, a range of answers between 3700 m and 3800 m was accepted. Many candidates gave answers of around 3600 m, possibly due to measuring the straight line distance.

Candidates were more successful with the bearing, giving answers between 173° and 176°.

The six-figure grid reference of the junction at Wardlow Mires was 180755 or 180756. Most candidates had 181 for the eastings and this error was seen across the ability range.

- (f) Candidates who understood the terms *relief* and *drainage* usually performed very well, often scoring three marks for relief and one for drainage, for which there was less to comment on. They wrote about the high or hilly upland, rising to 395 m, with steep slopes and cliffs. A number also noticed the gently sloping plateau area, coinciding with the higher land in grid square 1973, while less frequently spurs, ridge and valley were noted. Candidates frequently noted that the whole area had little surface drainage, or low drainage density, which was often expressed as *only one river*.

Candidates who misunderstood the question often wrote about vegetation or human features. Some located the river in the *bottom left corner* rather than by using compass directions; others missed a mark for stating highest point as they omitted the units (metres).

Question 2

- (a) Candidates frequently noted that the bush had thorns to ward off browsing animals, small and few leaves to reduce water loss and many stems branching out from the base to shade to the root area and reduce evaporation from the soil. The question required candidates to focus on the features of the bush shown in the photograph so comments relating to roots, dormant seeds, etc. were not valid.
- (b) This was well answered with comments on the mobility of the dunes causing plants to become buried or left with their roots exposed. Candidates also wrote about the lack of nutrients and water in the sand. Comments about water needed to clearly relate to the sand, rather than the dry climate.

When describing the vegetation in the valley, most candidates gained credit for mention of trees and the fact that they were scattered, though credit could have been gained for recognition of the varied sizes of vegetation and mention of the smaller vegetation such as bushes or grass.

Question 3

- (a) Most candidates gave the compass direction of where most of Pakistan's population were located, in relation to the River Indus, as north east, although east and south east were also accepted.
- (b) Candidates were asked to describe the population densities and height of the land along the coast of the Arabian Sea. Those who were careful to do as asked in the question, usually gained full credit, for low land and low population density, except in the city of Karachi. Many used data rather than descriptive comments. This was also valid, though some didn't get the marks as they omitted the units. A common error seen in responses was to describe the population densities of the whole map.
- (c) Candidates then had to consider a general relationship between population density and height of land in Pakistan. Most candidates recognised that generally the lower population densities were found on higher land and vice versa, giving a negative or inverse relationship. Instead of low land, some candidates referred to flat land and were not given credit.

When using figures to support answers, many candidates lost marks through not stating the correct units.

- (d) Candidates found this part more difficult. Quetta region had high population density in an area of high land between 1000 m and 2999 m. Conversely Region X had a low population density in an area of low land below 300 m.

Question 4

- (a) This question proved to be relatively straightforward with many candidates gained full credit. The two oldest islands, of Espanola and San Cristobal, were both needed for the mark in **part (i)**. These were located to the south east or east of the other islands.

In **part (iii)** most candidates scored marks for noting Isabela's larger size and its greater number of volcanic cones, while some noted its much more irregular shape.

- (b) In this question, the oldest island was San Cristobal and the youngest was either Santiago or Fernandina. A few candidates got the sequence the wrong way round but most had San Cristobal correct. The youngest island was more difficult as there were more islands to the west to select from.

The direction of movement of the Nazca Plate was from north west to south east and a good number of candidates got this right. Not surprisingly, the most common mistake was to reverse the direction.

Part (iii) was found to be the most difficult part of this question. Candidates had to explain why the volcano on Espanola was extinct, but instead many explained what was meant by extinct or wrote weak comments such as *all of the magma has come out*. They needed to get across the idea that the island was no longer over the rising magma because the plate had moved. There were relatively few good answers.

Question 5

- (a) Most candidates gained credit for dividing the circle correctly. The other mark was for correct shading and here some candidates did not use the key carefully, in this case horizontal lines and dots.

- (b) Full marks were common for this section. For boat trips around the islands, popular employment suggestions included tour guide and boat driver, while those who had studied Fig. 9 had suggestions in relation to the on-board restaurants and sleeping accommodation. For services in the ports many suggested retail, of food or souvenirs, and again tour guides and restaurant staff.

- (c) Tourism can be harmful in a National Park and candidates were asked to explain why. Many wrote about problems of litter and noise. Soil erosion, water pollution from boat oil spillage and destruction of habitats, particularly to build tourist facilities, were also mentioned frequently. Many candidates were awarded full credit.

Candidates then had to explain how tourism is managed. A number mentioned limiting tourists to small groups and restricting access to certain areas. Many knew about ecotourism and often quoted specific examples that they had studied, along with relevant points such as employment of locals, renewable energy, use of local materials and waste management. Some were a little too vague, such as mentioning ecotourism without any further explanation or suggesting the introduction of regulations and laws, without specifying what these should be about.

Question 6

- (a) Candidates were first asked to explain why the land in the background of Photograph C was unsuitable for farming. Most pointed out the steep slopes, but relatively few referred to thin, rocky soils, soil erosion, rapid run off, inaccessibility, the difficulty of using machinery and the fact that the existing vegetation cover would have to be removed.

In **part (ii)**, candidates usually chose soil exhaustion being reduced by leaving land fallow, as shown by the bare soil. The other option was that soil erosion was being reduced by strip farming, leaving grass strips across the land, contour ploughing or terraces. Candidates found this question relatively difficult, with one valid point being the common outcome.

(b) Most candidates realised that the relevant problem was shortage of rainfall.

When describing how the machine would work, candidates usually recognised that water was being released to irrigate the land but fewer realised that the rotation of the whole machine took place.

Candidates did not always realise that the circles in the photograph showed areas irrigated by the machine.

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Paper 0460/03
Coursework

General comments

There was yet again an increased entry for the Coursework Paper in June 2016, with some of that coming from overseas Centres, but the larger part from UK Centres. The majority of new Centres had submitted a proposal in advance and had ensured that staff had undertaken some training in assessing and moderating work, and as a result, there were very few problems arising from these new Centres. Whilst there were few problems of any kind from the vast majority of the entry, some were encountered and inevitably, the focus of much of the report is on where things did not go as smoothly as they should. Where difficulties were encountered, it was usually because a proposal had not been submitted in advance, or staff had not undergone any training in assessing and moderating work, or in rare instances, both.

Centres that had entered candidates in previous sessions showed the benefit of experience in most instances, and were able to assess the work of their candidates well. Several showed improved performances from their candidates compared to earlier years, and in some instances, this was attributable to taking into account Moderator feedback from former sessions. There were still a very small number of Centres that have entered candidates previously that have still not submitted a proposal or do not have teachers trained in assessment. The majority of problems that were encountered in established Centres could largely be accounted for stemming from these reasons. CIE has not barred Centres from entering candidates for the Coursework Paper that have not submitted a proposal, or had teachers trained, but that is not to say that this will always be the case in future. Centres that have not yet submitted any proposals are encouraged to do so as the process of approving them is not a critical one. The main checks are that the work reflects the content of the syllabus and that what is intended is at an appropriate level of difficulty for IGCSE candidates. If that is satisfied, the proposal is almost always approved. Moderators have the experience of seeing the success or otherwise of work of a similar or comparable nature from other Centres in the past. They will provide advice about particularly successful approaches noted from other Centres. This does not have to be followed, but an opportunity to learn what has helped achieve high marks elsewhere will be offered wherever appropriate.

Moderators reported that they had to adjust marks submitted in a relatively small number of cases. And for those Centres, although adjustments were made, Moderators were satisfied that an accurate rank order of candidates had been identified by Centres in almost all cases. This is the most important element of internal assessment. If the candidates are in the correct rank order, then scaling the marks is easy to achieve, fair to all Centres, and does no injustice to any candidates. Adjustments made by Moderators were both upward and downward. Moderators saw work from a large number of Centres from many different parts of the world. It is not a criticism of a Centre if marks have been adjusted; it is done to ensure that the quality of work across all Centres is comparable for particular mark points that have been awarded throughout the whole entry. Moderators have reported back to Centres and identified areas where marks have been either harsh or lenient for particular criteria. It is hoped that from these comments, that internal moderation can be modified in future sessions. It is important to note that marks awarded for assessment criteria must reflect what is demonstrated in the work. It is possible to be aware that a candidate has ability, say in knowledge and understanding, which is evident in discussing the work with the candidate, but this must be shown in the report submitted in order for it to be credited. Marks awarded should fairly reflect the statements in the generic mark scheme. Moderators did report that some Centres had produced modified versions of the generic mark scheme where adaptations had been made to fit the nature of the work undertaken. This must not be done and only the generic mark scheme should be used. Modifications tend to produce deviations from the standard to be set across all Centres and may well lead to the need for an adjustment of the marks submitted.

Investigation marks tend to be the most sound and accurate, and is also not often that marks for conclusions and evaluations cause concern. Knowledge with understanding is sometimes given more credit than deserved. This is probably due to the reasons outlined in the previous paragraph, that is, knowing the

candidate's understanding rather than crediting that part of it appearing in the report. It is sometimes noted that high marks are awarded for presentation when only relatively simple techniques have been used. Computer generated pie and bar graphs appear neat and clear, but it is more than neatness of presentation that is required. Some degree of complexity is required to bring out trends and patterns that are not immediately apparent from raw data. Moderators have noted that rather high marks can be awarded for rather descriptive accounts in analysis. This section should describe trends and anomalies, but also try to give reasons for them, relate them back to initial expectations, and consider them in the light of geographical theory if it is applicable to the area under investigation. The quality of analysis sometimes depends on the knowledge and understanding that has been initially established for the investigation.

It is clear that most Centres take active steps to ensure that their candidates do not exceed the word limit, and Moderators would like to take the opportunity to thank staff for doing this. At present, CIE does not impose a penalty for exceeding the word limit, but this is under review, and there is no guarantee that a scheme of applying penalties may not be introduced in future sessions. Moderators identified this problem when it was encountered in some Centres, and have mentioned in the reports back to those Centres. Those Centres where a number of candidates have exceeded the word limit have been identified and noted. Moderators will be asked to check those Centres carefully in future sessions.

The Geography content of investigations was of a high standard, even if not all candidates were able to do full justice to all aspects of the work undertaken. For physical Geography topics, river and coastal studies still dominate the studies undertaken. This is to be commended as it does represent Geography that is both interesting and relevant. Such studies often relate well to flooding along rivers, and erosion along coasts, both of which are relevant to people in many areas throughout the world. Most of these have been very well planned and there are some excellent guides published which can be a useful source of ideas. Human Geography has been studied rather more than physical. As a result, the range of types of investigation has been greater. Urban studies of environmental quality, role of the CBD and spheres of influence of settlements have been presented frequently. The impact of tourism in a number of ways has proved popular. An increasing number of studies have investigated patterns of migration and motivation for moving, and have proved very fruitful. There are many others that are less easy to categorise, and are often quite original, that have stimulated interest amongst candidates. For both physical and human Geography, studies work best if there is some appreciation of geographical theory that is given as introductory background, and used to generate and justify specific testable hypotheses which then determine the data that needs to be collected.

Moderators have reported that there were fewer instances of errors in paperwork than in some previous sessions. But there were still some Centres that submitted marks to CIE that did not match marks on other documents. Sometimes the marks for either assessment criteria, or totals, or both, on individual candidate record cards did not match those on assessment summary forms. The most common error detected was where addition of assessment criteria marks was incorrect and was transferred to marks submitted. Moderators have corrected this whenever detected, but there is no guarantee that Moderators will discover all these, especially for candidates whose work has not been submitted. It is always worth having a double check system before marks are submitted.

The majority of studies prove to be enjoyable and informative documents to read and Moderators have reported positively on these.

GEOGRAPHY

Paper 0460/41
Alternative to Coursework

Key messages

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

- When answering hypothesis questions that ask whether you agree or not, always give your opinion first before any supporting evidence. This will usually be Yes, No or Partially/To some extent. If you are asked to support your decision with data then statistics must be used from the resources referred to. Data is quantitative; evidence can be qualitative or quantitative. If you make an incorrect conclusion to the hypothesis you will gain no credit for the answer.
- When giving figures in an answers always give the units if they are not stated for you.
- Read questions carefully and identify the command word, e.g. *Describe, Explain*.
- When asked to compare, make judgements, e.g. *higher, lower*, rather than just list comparative statistics.
- If comparing statistics it is important to use paired data rather than one set on its own.
- Check you are using the resources that a question refers you to, e.g. *Support your answer with data from Table 1 and Fig. 4*.
- Attempt all completion tasks on graphs, tables or diagrams – not all the answers are on lines and in writing. **Many candidates are missing out on relatively easy marks by not attempting these questions.**
- Take into account the marks awarded. Examiners do not expect 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. Candidates should try to 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 especially 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 of a similar range to previous years with weaker candidates scoring on the practical questions, such as drawing and interpreting graphs and tables, and candidates of higher ability scoring well on the more challenging sections requiring explanation and judgement especially regarding hypotheses. Most candidates answered Questions 2 more successfully than Question 1.

There is less general advice to be given for areas for improvement with this paper compared with others. As there are no choices to make, it is difficult to miss sections out, **although some candidates omit graph completion questions which are usually 'easier' to answer. This is an on-going problem from year to year.** Although there were no significant reports of time issues some candidates do write too much in some sub-sections. Candidates should be encouraged to answer more succinctly. 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 **1c (ii)** where some candidates suggested why velocity varies downstream in a river not across the river channel. As in some previous papers **2(e)** required candidates to suggest a suitable fieldwork investigation to test a different hypothesis and question **1b (ii)** required candidates to explain a suggested improvement to the investigation methodology. Such questions are frequently included on this paper and are an area which centres should practise with candidates. However, it is not good practice to develop a series of generic improvements which may apply to all fieldwork as such suggestions tend to be vague and not worth credit.

Centres 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 **1b (i)**, **1c (i)**, **1c (ii)** and **2b (i)** focussed on specific equipment and techniques commonly used in fieldwork. Centres are encouraged to carry out basic fieldwork with candidates, especially using simple techniques which can be done on the premises or in the local area.

Comments on specific questions

Question 1

- (a) Most candidates were familiar with a pilot study and the benefits of doing one. Many gained marks by referring to ideas such as to practice fieldwork techniques, identify and correct mistakes and understand how to use equipment. Some candidates suggested that the results of the pilot study could be compared with the actual fieldwork, but they missed the instruction that the pilot study was conducted on a local stream.
- (b) (i) This was a challenging question for many candidates but did produce a range of understanding in the answers. Although the candidates were provided with photographs of the equipment it was apparent that some candidates did not recognise them or know how they could be used in this particular task. The best answers gave a clear description of the sequence of actions required, including an explanation of how the clinometer would be used to read the angle of slope. At the other extreme some candidates described how to measure the speed of flow and the depth of water across the river.
- (ii) Many candidates gained credit for reference to calculating the average of the four measurements. Better responses included reference to making the results more reliable and avoiding an error by recognising an anomaly. Many candidates wrote about 'getting more results', although this was true it did not explain why it was important. Another common error was to suggest that more measurements would make the result more accurate, which by itself it would not.
- (iii) Most candidates identified that the hypothesis was false. They then went on to suggest why the relationship between gradient and distance downstream was not as stated in the hypothesis, i.e. that gradient becomes less steep or shows no pattern downstream. Many candidates supported their conclusion with paired data from two sites. A minority of candidates gave partial support to the hypothesis, even though the relationship did not exist overall.
- (c) (i) Candidates described this method with more success and confidence than the earlier question about measuring gradient. Most candidates appeared familiar with how to time the orange as it

moved downstream. Better candidates also described how the ranging poles and tape measure would be used, although many candidates did not suggest that a fixed or measured distance was needed. Weaker candidates did not always mention the equipment used, for example the tape measure to measure the distance between the two ranging poles. A few candidates were confused and suggested that measuring should be done across the river and the float should be released to travel for a certain time rather than a measured distance.

- (ii) More candidates could identify an advantage than a disadvantage of using a flowmeter to measure velocity. They referred to advantages such as it was quicker or more accurate or gave a more precise reading. The two main disadvantages suggested were that the instrument may break or that the battery may go flat. Weaker candidates gave ideas such as 'it would be easier to use' or 'it is expensive', which were not accepted.
 - (iii) Answers were generally relatively poor and showed little understanding of why velocity may vary across the river channel. Only stronger candidates referred to the possibility that the fieldwork was being done across a meander, or that variation could be caused by differences in depth across the channel or obstacles in the channel. Some candidates suggested why velocity varies along the river course.
 - (iv) Many candidates correctly calculated the average velocity value, although some lost credit because they did not include the middle part of the calculation (distance divided by average time). Even where candidates use a calculator they should still show the stages of calculation.
 - (v) Nearly all candidates who plotted the bar did so accurately. The error made by some candidates was to misread the scale and plot the value at 0.5. However, 18 per cent of candidates did not draw in the bar, which again highlights how some candidates miss out on potential marks on graph completion questions.
 - (vi) Most candidates recognised that the results did not support the hypothesis, although again some suggested partial agreement by selecting results from sites 2, 3, 5 and 7. However, this is not the correct approach to take as there are usually exceptions, but it is the overall trend which is required. Most candidates who disagreed with the hypothesis conclusion gained credit for identifying supporting data from two sites where the velocity at the downstream site was lower than the upstream site. Fewer candidates stated that the results were random or showed no pattern, having said that the hypothesis was false.
- (d) (i) This was another graph plotting exercise which was not attempted by 15 per cent of candidates. The candidates who plotted the result were usually accurate.
- (ii) Similarly 18 per cent of candidates did not draw a best-fit line onto the graph. Those who did complete the trend line were usually accurate.
 - (iii) The relationship between gradient and average velocity was recognised and correctly described by most candidates. Candidates needed to use paired data from two sites to illustrate the positive relationship (for example between sites 4 and 7), but some candidates failed to do this.

Question 2

- (a) (i) This was generally well answered. Most candidates were able to suggest at least one reason. The most common answers were to collect more data and to cover a wider area in a limited time. A few candidates suggested the idea of safety.
- (ii) Other than the 13 per cent of candidates who did not attempt the question, most candidates chose the correct categories, i.e. police station in the public land use category and garden in the open land category. A small minority of candidates incorrectly suggested that the garden was an example of tourism or unoccupied land.
- (iii) The question differentiated well. While some candidates just blamed the students' carelessness in counting, other more reasoned reasons were also common. These included comments about the subjective nature of land use classification, and that the two groups may have done their counting on sections of the road which varied slightly.

- (iv) Most candidates completed the pie graph accurately and very few did not attempt this question. Candidates who drew the segments in the wrong order need reminding to follow the order of the key and, in this case, the other completed pie graphs. Some candidates shaded the segments so poorly that they barely resembled the shading in the key. Candidates need to be aware that such carelessness may result in them not being credited for inaccurate shading patterns.
 - (v) Completion of the divided bar graph was not attempted by 8 per cent of candidates. Candidates who did attempt the question were usually accurate in plotting, although a few were careless in plotting the first dividing line at 85 per cent not 87 per cent. A small number of candidates did not understand the technique of plotting a divided bar and began to plot each category from the same percentage point (75 per cent).
 - (vi) This question which required students to make a conclusion about the first hypothesis differentiated well. A small number of candidates reached the wrong conclusion that the hypothesis was correct, at least to some extent. Having reached the correct conclusion only the better candidates went on to compare all three roads, which was needed to gain full credit. Other candidates compared two roads but this did not meet the wording of the hypothesis which referred to the pattern of land use along all three roads.
- (b) (i) Generally candidates showed good understanding of the problem of classifying the age of buildings. Many referred to subjectivity in deciding the age of buildings, and the lack of clarity in the age descriptors, particularly the difference between recent and new buildings. Some candidates also suggested the ideas that old buildings could have been renovated or new buildings could have been built in old fashioned style.
- (ii) Most candidates who plotted the two bars on the graph did so accurately. Again there was a high omission rate. The only significant error was where some candidates plotted 68 per cent of new buildings inaccurately, usually at 78 per cent or 58 per cent.
- (iii) Most candidates made the correct decision about the hypothesis for both building categories. While some candidates did not use comparative data from all three roads to support their conclusion, most did and so scored highly.
- (c) Many candidates suggested appropriate reasons for the growth of the city. They often suggested urban sprawl or expansion of the city, and an increase in the population of the city or migration to the city. Weaker candidates lacked precision in their answers and referred to 'more buildings', 'economic growth', or 'the area has developed'.
- (d) The final question was challenging and differentiated well. Candidates made good use of the bulleted list of guidance points to structure their answer. Some candidates had difficulty in suggesting how data about the height of buildings could be acquired, and gave inappropriate answers about using a measuring tape or asking the owner. However, most candidates were familiar with the technique of counting the number of storeys. Stronger candidates then went on to suggest that this should be done for a number of buildings and then the average calculated. Many candidates also gained credit for suggesting the use of data tables, bar graphs and making comparisons between results.

GEOGRAPHY

Paper 0460/42
Alternative to Coursework

Key messages

Below are a few key messages to pass on to candidates and to consider in their preparation. These have been suggested by examiners based on scripts they have marked.

- When answering Hypotheses questions that ask whether you agree or not, always give your opinion at the start of your answer before any supporting evidence. This will usually be *Yes*, *No* or *Partially/To some extent*. Do not just copy out the Hypothesis if you agree with it. It is important to make a decision and state it as well as provide the evidence for your choice. Be clear in your decision – expressions such as “*might be true*”, “*could be false*” are too vague.
- If you are provided with a decision about a Hypothesis, e.g. false in **Q2 (d)(iv)** – do not then disagree with it and try to justify your view. You need to support the decision made by the students with evidence.
- When giving figures in an answer always give the Units if they are not stated for you. It is also important that your numbers are clear, e.g. a 4 can look like a 9; a 7 can look like a 1, sometimes a 2 looks like a 5.
- When shading graphs, use the same style as that provided in the Question and make sure your pencil gives a good dark image. Check you understand the scales used and the importance of any plots already provided.
- When completing pie charts or divided bar graphs, complete these in the order of the data given and in the order of the key. Make sure your shading matches the key, e.g. if diagonal shading slopes to the right, do not draw yours sloping to the left.
- When you think you have finished, go back and check that all graphs have been completed; too many candidates lose easy marks by missing out graphs.
- Read questions carefully and identify the command word, e.g. *Describe...*, *Explain...* A question that asks ‘*Why?*’ requires a reason to be given not a description.
- Check you are using the Resources that a question refers you to, e.g. **Q 1b (vi)** Table 2 and Fig. 2.
- 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.
- Make sure you understand how the fieldwork is being carried out, e.g. in **Question 1 (c)(i)** many candidates did not gain marks because they wrote about measuring across the river instead of along it and introduced other equipment such as a clinometer despite being referred to photographs of the four pieces of equipment shown in the Insert.
- It is important that, when candidates write the remainder of their answer elsewhere, that they signal it by writing something like –“*continued on page 18*” to ensure it is seen. It needs also to be noted that too many candidates gave the wrong sub-section number by their extra work which made it more difficult to match to their earlier answer and credit correctly. This year, as in 2015, many candidates chose to write long answers and frequently wrote down the sides of the pages or were given 4–16-page booklets despite additional pages with lines being provided for this very purpose! As there are always spare pages at the back of the exam paper, Centres should not be issuing separate booklets for extra work.

General comments

Most candidates found this examination enabled them to demonstrate what they knew, understood and could do. It appeared to be a positive experience for most candidates with higher marks at the bottom and top ends. Weaker candidates scoring on the practical questions such as drawing graphs or diagrams, making calculations and making choices from tables, and those of higher ability scoring well on the more challenging sections requiring judgment and decision-making on Hypothesis choices with evidence and other written answers.

There is less general advice to be given for areas for improvement with this paper as with others. As there are no question choices to make, it is difficult to miss sections out – though candidates do (especially completion of graphs) – and there were no reports of time issues as the booklet format does not allow or encourage over-writing of sub-sections.

Most points for teachers to consider, when preparing candidates for future Paper 42 questions, relate to misunderstanding or ignoring command words, the use of equipment in fieldwork and the importance of experiencing fieldwork – even if is only in the school grounds or simulated in the classroom. Particular questions where candidates did not score well also often relate to them not fully reading the question or just completely missing out straightforward graph completions. Such failings mean that some candidates do not obtain a mark in line with their geographical ability and is an area that Centres should work on.

Centres should be aware too that, although this is an *Alternative to Coursework* examination, candidates will still be expected to show that they know about fieldwork equipment, how it is used and fieldwork techniques. Some fieldwork experience is vital even if there is only limited opportunity within the Centre. Familiarity with maps, tables and the various graphs listed in the syllabus is also important to this examination.

Question 1 required candidates to know about aspects of river studies and methods of measuring basic hydrological parameters such as width, depth and velocity and then draw conclusions about relationships between them. A line graph, a sketch, a calculation, cross-sections, divided bar graphs and a scatter graph were all skills that were tested. They also needed to make judgments using statistics as well as applying knowledge and understanding to justify or disagree with Hypotheses.

Question 2 required candidates to have experience or knowledge and understanding of how the land-use of a shopping street had changed between 1981 and 2012. Choosing from alternatives in tables, completing and analysing a land-use map, analysing a data table, completing bar graphs, a pie chart and a divided bar graph were all skills that were tested. They also needed to make judgments from evidence with regard to Hypotheses.

Comments on specific questions

Question 1

- (a) Almost all candidates chose *source* and *mouth* in the correct order; a few reversed them and the most common error was choosing “*tributary*” for where the river enters the sea.
- (b) (i) Many candidates assumed that, by taking more measurements, using more sites or better equipment, the results would be more reliable but all that does is provide more data. To make it more reliable, extra measurements need to be used to work out an average; getting other students to check a pair’s measurements would help and some aspects of the tape measure needed to be right, e.g. it should be taught and straight across the river. Some suggested having a pilot survey but that would not make the investigation’s results more reliable. Suggestions to do the work at different times or seasons would not improve reliability either.
- (ii) This was a straightforward plot for most candidates; a few placed the 7.6 cross at 8.6 or 6.6; some put it at 10.6! Although the mark was for the plot rather than joining up the line, a few candidates did not draw in the line – this should have been done. A surprisingly high number did not attempt to plot the point.
- (iii) With over 9000 candidates, there was bound to be a huge variety of sketches with and without labels. One mark was awarded for clearly indicating that the river’s cross-section would be measured then three marks for correct labels on the drawing such as a metre rule or stick being in the water, where the depth was measured, the ruler or stick touching the bed, measuring at regular intervals across the river using a tape measure and putting ranging poles at each bank at the end of the tape measure. Many drawings were basically text with little visual element; others were drawings with no labels. Some contained students up to their necks in water, or depth being measured from boats using sonic radar. This easily had the highest *No Response* percentage on **Question 1** yet many candidates did well. Teaching basic fieldwork techniques for measuring the hydrological parameters of rivers on this common topic would be beneficial to candidates.

- (iv) A significant number of candidates did not attempt this straightforward cross-section although it was clear that Site 4 was incomplete compared to the other completed Sites. Most candidates scored well on this with almost all getting a shading mark. Some plotted upwards from the bottom axis instead of from the top line. While 0.4 was plotted well, 0.32 was difficult to plot accurately but some tolerance was allowed for this plot.
- (v) While almost all candidates provided a correct equation, a number decided to recalculate the answer or completely miss out the numbers required in the equation.
- (vi) A very small number of candidates decided the Hypothesis was either *completely true* or *not true at all* but most agreed it was *partially true* recognising that the area increased from Sites 1–5 then decreased at Site 6. It was important that candidates provided evidence rather than wrote phrases such as “*Sites 1–5 agree with the hypothesis but Site 6 is an anomaly*”. They should have provided some qualitative or quantitative evidence from the information provided. It was not necessary to describe every change in every site; seeing the overall picture is the skill required here. It was surprising how many chose *partially true* for a mark then wrote about velocity instead of cross-sectional area. Some candidates circled two choices which made it difficult to mark and credit.
- (c) (i) Four pieces of equipment were shown in the Insert; candidates were awarded one mark for describing the correct use of each piece of equipment. For each mark they had to correctly name the equipment used. This has been a standard question on many exam papers so candidates were expected to be able to describe the procedure in detail. Most did well scoring 3 or 4 marks but it was surprising how many did not recognize the ranging poles – some described them as pencils – or chose to describe other equipment such as a ball float instead of the orange shown; some described using a flow meter. Candidates scored well on describing the orange starting at the first pole and use of the stopwatch to time its flow between poles. Marks were lost though as they were not sure where the poles would be located and they did not refer to a certain distance or give a distance for using the tape measure. Some distances given were unrealistic, e.g. 50 km, from source to mouth, 100 metres. Some also let the orange run for a period of time rather than a set distance which negates the use of ranging poles and is not a conventional use of the equipment provided. A number described the equipment being used across the river when maybe they meant along. It was not necessary to describe how the velocity was calculated after using the equipment.
- (ii) Only a few candidates did not attempt the horizontal bar graph. This was the most successful subsection on **Question 1** and was well-plotted by almost all candidates. While there was no shading mark, it would be good practice for candidates to shade the bars to match the other shading as shading marks may be credited in future.
- (iii) Here candidates were told that the students thought the Hypothesis could not be supported and consequently were asked to provide evidence for that decision. Clearly any evidence that supported the Hypothesis could not be credited yet some candidates decided the Hypothesis was true and provided supportive evidence either through not reading the question or thinking they had to make a decision. Candidates who provided the correct evidence that supported no agreement identified sites where the velocity either stayed the same or decreased downstream or provided comparative relative data to support this.
- (d) (i) This was not an easy plot yet most candidates put the crosses in the correct location and added the site number 6 which was a requirement to get the mark. A small number did not attempt this question. A very small number decided to add a best-fit line or just joined up the plots. This did not affect their mark if it was plotted in the right place.
- (ii) This was not done well. By looking at the graph or Table 2 it was clear that, in general, there was a positive relationship at most sites, e.g. 1, 2, 3, 6 with a possible anomaly at 4 (using the Table) and a definite anomaly at Site 5. Some candidates recognised the positive relationship but did not refer to where it existed; it was not enough to identify Site 5 as an anomaly without providing some evidence for it being so. Paired data between two sites that demonstrated the positive relationship was also required for a mark. Many just described the measurements at each site with no overview supporting a partial relationship. A significant minority did not attempt this.
- (iii) Many candidates wrote a great deal about cross-section areas, gradients and “space” for water to move and tried to link the area with velocity with no reference to the beds and banks forming the channel cross-section. A number of perceptive candidates did relate the cross-section area to the

friction caused by bed and banks and so could provide a correct explanation as to how the channel cross-section might affect average velocity. A significant minority did not attempt this.

Question 2

- (a) (i) Statistics show that every candidate attempted this and almost every one made the correct choice of “*clothes and shoe shop*”.
- (ii) This was well done by most candidates who correctly located Fi in the correct empty place. Clearly they had to use the key to put the bank into the Finance coding then locate it. Some used other initials such as Ba, Se which were wrong. A disappointing minority did not attempt the question.
- (iii) Almost all chose Entertainment correctly; a few chose Library by going south of the church instead of north as required. Others chose Food which was either too near or too far from the 58 metres distance from the church.
- (iv) Some very good descriptions on this question with credit being given for use of compass directions such as south of Finn lane or south west of Forest Street. Some candidates thought there was a Forest in the town by not reading fully along the road name! Answers not credited included “*linear*” which is a pattern and “*at the bottom of the map*” which is non-geographical or even “*in the forest*”.
- (v) Many candidates focused on the total number of food shops compared to number of specialist non-food shops. The most obvious difference in distribution was that the food shops were in clusters whereas the non-food shops were scattered around the town. A few gave the difference in relation to other land-uses they were next to which was not credited. This was the least successful sub-section of **Question 2**.
- (b) (i) Well done by most in recognising an old map as secondary data.
- (ii) This was the most correctly answered sub-section in Question 2; only a few did not attempt the question. Some candidates plotted -7 as $+7$ and others plotted $+3$ instead of $+4$ but overall this was a relatively easy two marks to gain.
- (iii) Having provided a table showing land-uses in 1981 and also a graph which plotted changes, candidates now needed to decide whether shops and services on the main shopping street had changed between 1981 and 2012. Looking at the table and graph which gave a visual impression of change, every shop service and other building had changed except “*other services*” which had stayed at 19. Taking out the land-uses which were not relevant to the Hypothesis i.e. empty buildings and houses, of the eight shop and service categories left, seven had changed and, as some perceptive candidates argued, within “*other services*” the number could stay the same but with different services within it between the years. The vast majority of candidates correctly concluded that the Hypothesis was true and stated increases and decreases with statistics for several shops and services. One mark was allowed for those that identified “*other services*” as the anomaly providing they gave the number 19 rather than just said it did not change. It was important that the change was stated, e.g. decreased by 7 rather than changed by 7; the examiner wanted to know what the change was. It would also have been clearer if candidates had written “*fell by 7*” rather than “*changed by -7*”. A small number decided the Hypothesis was partially true; others did not provide a decision on the Hypothesis but gave relevant evidence for a correct decision for credit. A number included empty buildings and houses in their evidence for change but these are not shops or services so could not be credited.
- (c) (i) Many vague answers such as “*some people*” were at school or, the middle-aged were at work. For credit candidates should have referred to the age-groups in the table. For the over 60s some reference to them being in the town centre for shopping was required rather than general comments such as they don’t work, they have time or they are retired. The under 16s being at school was a popular answer.
- (ii) A significant minority did not attempt this yet others could suggest sensible ideas such as carrying out the survey at weekends or a non-working day or after school/work finish. Although the idea of using a bank holiday was accepted in principle, it would be likely that the shops would be closed and the students would not be at school to carry out the survey. A good number suggested stratified sampling or targeting the survey to get an equal number in each age-group. Some suggested doing the survey at different times or days but not when.

- (d) (i) This pie chart was done well by the majority with a correct plot at 83 per cent and correct shading. It is still the case that far too many candidates do not plot the information in the clockwise order required which also matches the order of the key. Consequently a plot at 80 per cent was incorrect as it was in the wrong order although the correct shading of the larger slice was credited in these cases.
- (ii) Completing the divided bar graph was a successful exercise for most candidates with the plot at 78 per cent from the left and the shading in the order of the table and key. There were less incorrect plots than the pie chart in (i) but there were still candidates plotting 40 per cent from the right at 60 per cent and losing the plot mark.
- (iii) Many candidates did not read the question or look carefully at Table 7 in the Insert. They were asked “*Under which advantage or disadvantage in Table 7...*” so should have chosen one from the list of advantages or disadvantages provided that they judged the two statements best belonged to. Some just put *Advantage* for one and *Disadvantage* for the other as answers instead of choosing the best one from each. For 1, the statement best fitted with *Shops sell specialist goods (advantage)* and for 2, the statement best fitted with *Lack of choice when buying goods (disadvantage)*. Fortunately the vast majority gave the correct choices for both marks.
- (iv) The candidates were told that the students had judged the Hypothesis false; despite this some candidates decided to make their own judgment of *True* and tried to justify that. In providing evidence that this was false, candidates should have carefully noted that there were 100 people surveyed who then provided several advantages and disadvantages each which produced 247 answers that were positive and 111 negative answers. Many wrote that there were 247 people and 111 people which could not gain credit. Also some just rewrote the table out without any amalgamation of groups or taking an overall view of what the data was saying. The best answers did compare the number of answers provided and made overall statements about the number for the highest disadvantage being twice that of the highest advantage and also that 88 per cent shopped elsewhere or the lowest percentage (12 per cent) shopped in the town centre. Candidates must look at individual data and use it to get credit; just rewriting it will not gain credit.
- (e) (i) There were some very good suggestions here with the best candidates realising that it would be possible to plot locations on a map and create the sphere of influence and say something about the range of shops and services. A few mentioned flow lines, some others suggested sensible Hypotheses to explore such as the effect of distance on the frequency of shopping. Some just suggested extra questions instead of suggesting how the extra question stated could extend their fieldwork.
- (ii) The idea of the question being intrusive and requesting information that should be private was a common answer with a second mark for a reason such as fear of crime, robbery, stalking and the misuse of the information for unwanted items such as junk mail.

GEOGRAPHY

Paper 0460/43
Alternative to Coursework

Key messages

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

- When answering hypothesis questions that ask whether you agree or not, always give your opinion first before any supporting evidence. This will usually be Yes, No or Partially/To some extent. If you are asked to support your decision with data then statistics must be used from the resources referred to. Data is quantitative; evidence can be qualitative or quantitative. If you make an incorrect conclusion to the hypothesis you will gain no credit for the answer.
- When giving figures in an answers always give the units if they are not stated for you.
- Read questions carefully and identify the command word e.g. *Describe, Explain*.
- When asked to compare, make judgements e.g. *higher, lower*, rather than just listing comparative statistics.
- If comparing statistics it is important to use paired data rather than one set on its own.
- Check you are using the resources that a question refers you to, e.g. *Support your answer with data from Table 3 and Figs. 3 and 4*.
- Attempt all completion tasks on graphs, tables or diagrams – not all the answers are on lines and in writing. **Many candidates are missing out on relatively easy marks by not attempting these questions.**
- Take into account the marks awarded. Examiners do not expect 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 especially 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 candidates scoring on the practical questions, such as drawing and interpreting graphs and tables, and candidates of higher ability scoring well on the more challenging sections requiring explanation and judgement especially regarding hypotheses. Most candidates answered **Questions 1** more successfully than **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 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 **2a(i)** where candidates were asked to consider how students could work out wind direction at a beach, rather than what measuring instrument would they use. As in some previous papers question **1b(ii)** required candidates to describe a suitable fieldwork investigation methodology, in this case to undertake a pedestrian count, and question **2b(ii)** required candidates to suggest improvements to the investigation methodology. Such questions are frequently included on this paper and are an area which centres should practise with candidates. However, it is not good practice to develop a series of generic improvements which may apply to all fieldwork as such suggestions tend to be vague and not worth credit.

Centres need to realise 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 **1e(i)**, **1e(ii)**, and **2d(ii)** focussed on specific techniques commonly used in fieldwork. Centres are encouraged to carry out basic fieldwork with candidates, especially using simple techniques which can be done on the premises or in the local area.

Comments on specific questions

Question 1

- (a) (i)** Whilst most candidates identified the correct definition of sphere of influence, significant numbers did choose the incorrect distractors, especially 'area around a town or shop'.
- (ii)** The question proved to be a good discriminator. Many candidates referred to there being more or a variety of shops in a larger settlement, and stronger responses included geographical ideas such as comparison shops, specialist goods and higher order services. Weaker answers were typified by references to 'more people' and 'better services' which were too vague to credit. Also weaker candidates only repeated the definition of sphere of influence. Irrelevant answers referred to migration and jobs which suggested that the candidates had little grasp of the meaning of sphere of influence.
- (b) (i)** Marks were also well spread in this question which discriminated between candidates who were familiar with the fieldwork methodology and those who weren't. Some candidates had clearly carried out pedestrian counts themselves and were able to show good understanding of the techniques. Candidates usually gained marks by referring to working in groups, timing the counts, and tallying the pedestrians as they passed the student. They were also able to distinguish between organisation of the pedestrian count and carrying it out. In contrast weaker answers focussed on safety issues and where the counts would be carried out. This latter information was included in the question. There was also a focus on post-fieldwork recording and graphing of results which could not be credited. A few candidates repeated the same ideas (and the same wording) in both the organisation and the carrying out sections.
- (ii)** Most candidates plotted the bars accurately, with few omitting the question. A minority of candidates plotted 212 too low in Spandau Arcaden.
- (c) (i)** The correct answer was most popular, but all distractors were chosen by some candidates, especially 'comparison goods are better quality than convenience goods' and 'comparison goods are bought more frequently than convenience goods'.
- (ii)** Most candidates completed the pie graph accurately. Candidates who drew the segments in the wrong order should remember in future to follow the order of the key and, in this case, the other completed pie graph. On some responses the shading did not resemble that used in the key. Candidates need to be aware that this may result in them not being credited for inaccurate shading patterns.

- (iii) Generally candidates answered the question about the hypothesis conclusion well. Most correctly agreed with the hypothesis and many gave accurate paired data for another mark. However, far fewer candidates wrote a descriptive statement to support the hypothesis. They did not compare the situation by a statement such as 'there are more pedestrians and more shops selling comparison goods in Spandau Arcaden'. An error made by some candidates was to give the number or percentage of shops selling convenience goods in Pichelsdorfer Strasse, instead of shops selling comparison goods.
- (d) (i) Most candidates gained credit by explaining that the proposed question would invade a person's privacy, although some overstated this and simply referred to the question being rude or offensive, which did not gain credit. Many candidates did not score the further credit by giving a different reason such as the question would not inform the distance travelled. Some candidates said that the question was vague, rather than the answer would be vague as the question was not specific enough.
- (ii) Almost all answers were correct, but 12 per cent of candidates did attempt to shade the blank section, this not gaining an accessible mark. A minority of candidates lacked accuracy in shading by using a cross symbol rather than a circle.
- (iii) This section produced the lowest scoring answer in question 1. Many candidates were vague in their advantages and disadvantages, stating that they were 'easy to see' or 'visually appealing', and that they were 'time consuming' or 'difficult to draw'. The most popular scoring answer was the disadvantage that specific or exact values were not plotted. Some candidates referred to making comparisons as an advantage but few stated that the pattern of shading allowed comparisons to be made between areas.
- (iv) This question was a challenging test of understanding in supporting the hypothesis. Most candidates correctly suggested that the hypothesis was correct, although few scored full marks for their justification of this conclusion. The most common supporting evidence contrasted the number of boroughs from which people visited the two shopping centres, coming from 12 or all boroughs to Spandau Arcaden and from six boroughs to Pichelsdorfer Strasse. Relatively few candidates used data which compared no visitors from some boroughs to Pichelsdorfer Strasse with a specific percentage from the same borough to Spandau Arcaden. A common error made by weaker candidates was to compare data from hypothesis one, i.e. the number of people visiting the two shopping centres and the number of different types of shop.
- (e) (i) This was a different type of question to previous years which replicated a fieldwork task. Most candidates identified and matched the different types of land use in the key. Some did not follow the instruction to use the types of land use provided, and instead they gave their own examples of goods and services, for which they gained no credit.
- (ii) Many candidates scored full marks as they successfully used the key to shade the different spaces. A common confusion was that the photography shop was an entertainment facility rather than a shop selling comparison goods. However, candidates were not penalised as the mark scheme allowed one error without penalty.

Question 2

- (a) (i) The question was answered poorly. Many candidates did not consider the context of the question which was fieldwork on a beach. The question was not asking for a weather measuring instrument. Nevertheless many candidates suggested a wind vane without considering that such an instrument might not be available on a beach. Simple ideas which were accepted involved using materials such as grass which could be thrown into the air to see which way it blew, or wetting a finger to see which side became colder from the wind. Many candidates who made these suggestions did not follow them up by stating that a compass would also be required to work out the wind direction.
- (ii) The correct answer of 'waves approaching the beach' was most popular, but a significant proportion suggested 'direction of the tide'.

- (iii) The process of longshore drift, although fundamental to the study of how the sea transports material, was not explained well by many candidates. Better candidates did gain credit for reference to the angle of swash at it approaches the beach, the perpendicular return of backwash down the beach, and movement of material along the beach. The crucial factor of wind direction was often omitted from these answers. Weaker candidates tried to explain the process by describing what was shown in the diagram, e.g. 'the pebble moves from position 1 to position 2 and then goes to position 3 ...etc.' but showed no understanding of why this movement occurred.
- (b) (i) This was a challenging graph completion question because of the unusual scale. Nevertheless many candidates plotted it accurately. Some candidates did not realise that they should measure from zero downwards and so measured 0.88 from the bottom axis.
- (ii) Few candidates were able to give two acceptable ideas to improve the reliability of measuring. Many answers just suggested 'measure more times' or 'measure in lots of places along the groyne', thus omitting the crucial idea of calculating the average measurement. Few candidates suggested that a good idea would be to ask another student to check the accuracy of the measurement.
- (iii) Most candidates agreed with the hypothesis and to some extent supported their decision with appropriate evidence. The question proved to be a good discriminator as the supporting evidence needed to be appropriate. Good answers gave accurate statistics and referred either to the higher beach on the south side of the groyne or the bigger distance from the top of the groyne to the beach on the north side of the groyne. Weaker candidates struggled to support their decision and gave the wrong data pair in the context of their reason, e.g. they described the difference in height of the beach but gave data to show the difference in height between the top of the groyne and the beach. Some candidates tried to justify their decision by comparing the three groynes along the beach rather than the north and south sides of each groyne.
- (c) (i)(ii) Most candidates correctly identified locations from the table. A few mixed up the locations and consequently gave the answers in the wrong sub-section.
- (iii) The simple task of plotting the bar graph was not attempted by 10 per cent of the candidates. Candidates must read the question paper carefully so that they do not omit graph completion questions. Candidates who plotted the bar usually did so accurately.
- (iii) Generally candidates did not answer the question well. Many candidates gained credit for suggesting that defences were built in order to protect residential and tourist areas. Few candidates expressed appropriate ideas about why the caravan site and farmland were not protected. Some candidates suggested ideas such as variation in rock type or wave strength which were not supported by any evidence in the map or table. The weakest answers merely listed different land uses with no attempt to explain why some were protected whilst others were not.
- (d) (i) The question from the students aimed to find out if there was any point in carrying on with the questionnaire, because if the interviewee did not know about the coastal defences there was no point carrying on. Better candidates realised the significance of a negative response. Weaker candidates stated what information would be gleaned from the question, i.e. 'to find out if they knew about the defences' but did not develop their answer by referring to whether it was worthwhile to continue with the questionnaire.
- (ii) Again this question was answered quite poorly because many candidates did not realise that the answers referred to information which would be common to all questionnaires, such as age and gender of the interviewee, and the location and time of the questionnaire. Some candidates suggested different questions which could be included such as 'Where do you live?' and 'Are you a tourist or local?' These would have formed the answer to a different examination question.
- (e) (i) This graph completion question had the highest rate of omission on the paper. Candidates who did attempt the question were usually accurate in plotting, although a few were careless in plotting the first dividing line at 73 per cent not 63 per cent. A small number of candidates did not understand the technique of plotting a divided bar and began to plot each category from the same percentage point (45 per cent).

- (ii) Many candidates began their answer by stating that they agreed with the hypothesis, even though they were told that information in the stem of the question. A few candidates even contradicted the conclusion given. Good candidates realised that supporting evidence had to be grouped, so adding together the 'agree' and 'agree strongly' opinions. Individual statistics such as '70 per cent agree strongly that defences are needed' were not credited because they did not give an overview of the support. Weaker candidates used terms such as 'more' and 'lots of' which are vague in relation to statistical data.
- (iii) The final question was the most challenging and identified the best candidates who were able to assimilate the two sets of data. Most candidates recognised the significance that local people wanted more defences but did not want to pay for them. However, some failed to use appropriate data or 'most' and 'few' to quantify this dichotomy. Few candidates recognised or could explain the conflict created by this in terms of who else would pay for the defences.