

GEOGRAPHY

Paper 2217

Paper 12

Key messages

- write only on the lines provided, not underneath the final line or elsewhere on the page (e.g. in any area of unused space at the bottom of a page)
- continue any answers which they do not have space for on the lined page(s) at the back of the booklet. If they do this they must indicate that they have done so (e.g. by writing `continued on Page XX`) and carefully write the number of the question at the beginning of the extra part of their answer. They should only use extra loose sheets of paper if this extra space has been used up.
- teachers should try to provide frequent opportunities to practice the use and interpretation of a variety of resources, including maps of various types, graphs, diagrams, extracts and photographs. Candidates need to study the resources carefully, using appropriate facts and statistics to back up an answer and interpreting them by making appropriate comments, rather than just copying them
- it is important to read questions carefully before starting a response
- candidates should try to do as much practice from past papers as time allows to illustrate the importance of reading questions carefully, to ensure that answers are relevant. Teachers should share mark scheme principles with candidates and spend some time teaching exam technique, ensuring that candidates are fully conversant with the meaning of all command words used
- learn geographical vocabulary and to use this wherever possible in responses
- in questions where extended writing is required candidates should try to develop each point fully rather than writing long lists of simple, basic points. In case studies it is better to fully develop three ideas rather than write lists consisting of numerous simple points. Candidates should know how to use the mark allocations in brackets and the space provided in the examination booklet as a guide to the amount of detail or number of responses required.

General Comments:

This was the second May examination in which candidates used a combined question and answer booklet to write their answers. This format is now familiar to Centres, therefore in the vast majority of cases candidates made effective use of the space provided. It seems that this session the candidates managed the space more effectively. It was unusual to see many pages of extra writing as most seemed to use the additional page well.

The examination was considered appropriate for the ability range of candidates and a high level of differentiation was achieved throughout. Few candidates made rubric errors and most had sufficient time to complete all answers. Many excellent responses were seen and candidates of all abilities were able to show what they knew, understood and could do. Inevitably there were some candidates who for a variety of reasons performed poorly in the examination (e.g. lack of understanding or linguistic difficulties), however these were relatively few in number.

Many candidates attempted to use geographical terminology appropriately and where balance was required in an answer it was generally achieved. Well prepared candidates were able to recall case studies in detail, particularly when they chose case studies local to them or from within their own country. Many candidates were able to give detailed Level 2 responses and to improve further they should try to also include place specific detail in order to achieve Level 3. Candidates who tend to list their responses in bullet point form or make simple, brief points are only able to gain marks in the Level 1 range. In order to improve their performance they should try to develop each point which they make.

In particular:

- Candidates should be reminded of the need to use units with statistics
- The use of key geographical skills to describe a location should be practised – for example, compass points, use of scale, latitude and longitude is an area for attention
- Ability to describe a distribution or a route is not always well developed
- A focus on how to develop answers would be beneficial. For example, rather than just writing `air pollution` or `water pollution`, candidates need to spend time explaining how this will impact on people
- Building up glossaries of key terms and definitions for each topic would be useful so that candidates can confidently define and use subject specific vocabulary.
- Candidates would benefit from being prepared to draw precise, clear and well annotated diagrams.
- Attention to scale in the question – is it local, national or global?
- Attention to context in the question – does it require an area or a country?
- Attention to impact in the question – is it on people or the environment?

Comments on specific questions:

Question 1

- (a) (i) The vast majority of candidates correctly identified a state with a population density of 800 people or more. Bihar was the most popular choice.
- (ii) The task of calculating population density was generally well understood. There was some inaccuracy, however, in the final calculation although this tended to be due to incorrect rounding of answers. It was quite common for candidates not to include the relevant unit – i.e. people per square kilometre – though candidates were not penalised for this in this instance.
- (iii) Almost all candidates identified the correct two states but many could not locate them, wrongly stating north-east or that they were close together. There were very few correct references to the lines of latitude and longitude which were inserted on the map to facilitate description of location.
- (iv) The quality of answers for this question was variable. Most candidates identified the idea of the availability of work and the other most common responses were migration and a high birth rate. There was little mention of the fact that much of the farming and industry in LEDCs is labour intensive.
- (b) (i) Most candidates could identify the aridity in A or B and steep relief in B or C but many scored two marks only. Typically Photograph C was not well done as many vaguely suggested that it was no good for `agriculture` (rather than arable) or simply stated that it was cold. Ideas relating to remoteness/isolation or lack of resources/employment could have applied to all photographs, however they were not commonly seen. Some candidates repeated the same idea twice rather than using a different one for each photograph.
- (ii) Candidates did not perform well on this question with a considerable number not gaining any marks. This is because they wrote very general answers about the reasons for initial settlement growth – for example, close to fertile land, water supply etc. and most related their answer to why some towns, or areas of towns, had low population densities, or why people moved to areas of low population density. The majority of marks scored were gained for reference to mining and tourism. There was some good use of examples by higher scoring candidates but a lot of candidates failed to interpret the question and what it required correctly.

- (c) Candidates achieved well on this question with many entering Level 2. Most answers were well developed and candidates showed a good knowledge of the reasons for a high birth rate. However, place specific detail was generally lacking. A common error was to use China as a case study and then link this example with detail about how the birth rate can be controlled.

Question 2

- (a) (i) The majority of candidates answered this correctly.
- (ii) Most candidates achieved a mark for correctly naming a bank. However, some lost the next mark because they tended to give examples of shops or services rather than giving a type.
- (iii) Most candidates coped well with this question and gained either 2 or 3 marks, using evidence such as banks, the pedestrianised area and shops. Some suggested high land values and good access but neither of these could be seen on the photograph or maps.
- (iv) Although candidates understood what the CBD was they appeared less sure about 'sphere of influence'. Consequently there was little reference to distance travelled, comparison goods, specialist shops or high order goods and the question was not answered well. There was generally a lack of understanding about the factors affecting the sphere of influence, beyond the idea of good transport links and people travelling to use services.
- (b) (i) Many candidates found this question difficult and few scored all 3 marks. Many did not seem to be familiar with describing a route and descriptions were often weak and sometimes just a list of areas which the tram line passed through. Few gave the length of the route, for instance, or its direction which would be a useful starting point for a question such as this.
- (ii) This question was done quite well by candidates who read that the question was about people and focused their answer on that. Few developed their points but many gained high marks for separate ideas. The influence of air pollution was rarely linked to problems for people though it was frequently mentioned. There is much scope for development of answers in questions such as this, as some candidates tend to put one word answers without explaining the benefit or problem for people. In all questions 'pollution' without any reference to a source or an impact does not gain credit.
- (c) Highly achieving candidates provided some detailed case studies of urban sprawl and clearly showed its impact on the surrounding area. However, a considerable number of candidates wrote vague answers and not all choices of urban area were appropriate (e.g. London Docklands, Manhattan). Many candidates did not understand the term 'urban sprawl' and there was some confusion with urban renewal in the CBD or inner city. Where candidates did focus on the surrounding area many simplistic answers focused on removal of trees, loss of farmland, and death of wildlife with little attempt to develop the points. Other answers focused on shanty towns and their problems, which was acceptable if it was made clear that these changed the surrounding area rather than the city itself.

Question 3

- (a) (i) Most candidates correctly described the V- shape of the valley.
- (ii) Most candidates scored at least one mark here although some did not focus on the river but on the valley referring to interlocking spurs or regarding the slight bends as middle-course meanders. Correct answers mentioned the debris/deposition in the river, or the irregular long profile (usually referring to small waterfalls or rapids) and it being narrow and/or shallow.
- (iii) Most candidates know the processes of river erosion well, many gaining their marks by using the technical terms hydraulic action, corrosion and corrasion. Either the use of terms or appropriate description of the processes was valid. A few wrongly gave transport processes here, such as traction, which were then duplicated in (iv).
- (iv) Many candidates scored full marks here but for some there was confusion between processes of erosion and transportation. Many candidates seem to know the terms but descriptions were less clear.

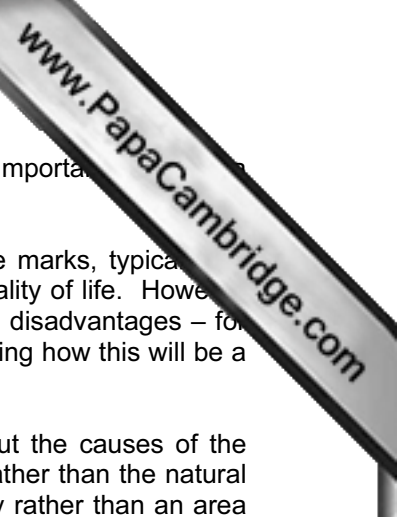
- (b) (i) This was generally well answered although there is a need for a little more precision, such as this (e.g. `tree roots grow in rocks` was often written rather than `in cracks`), most could follow a logical sequence through here for 2 or 3 marks.
- (ii) The responses to this question varied enormously and there were a few accurate and detailed answers which gained 4 or 5 marks. Many responses however saw inappropriate focus on exfoliation and freeze-thaw weathering. Many failed to score beyond the simple ideas that high temperature means more plant growth and the presence of water leads to chemical weathering.
- (c) This was generally well answered with a good number of candidates making it into Level 2 by developing or at least linking ideas. A common misconception was that seasonal change occurred rather than daily change in temperature and some confused freeze-thaw with exfoliation. Diagrams tended to not add new information but gained access to Level 3.

Question 4

- (a) (i) Virtually all candidates gave the correct height.
- (ii) Candidates coped well with this question with most identifying the clearing and/or growing crops such as the bananas, manioc or cassava.
- (iii) Most candidates were able to describe the characteristics of the vegetation, though a few focused wrongly on the rain forest climate. There were some attempts at explanation which was not required.
- (iv) Many candidates were able to explain adaptations with the most common answers being about emergents and/or lianas, drip tip leaves and large leaves. Some referred to buttress roots though many did not relate this feature to climate. Indeed some thought that trees had long roots to get to deep water.
- (b) (i) This was well answered and candidates made effective use of the source material though many candidates tried to make the entire diagram relevant to their answers. A clear focus on nutrient cycling often lead candidates to three marks. A number wrote about leaching, even though that is not part of the nutrient cycle back into the trees.
- (ii) The impacts of deforestation were well known with many candidates making a range of relevant, developed points. Some missed the `local` aspect of the question and wrote about climate change and global warming, whilst others ignored `natural` and wrote about its impacts on people.
- (c) There were some good responses here with most candidates entering L2. Most used the case study of the Amazon though there was little place specific information. Sometimes candidates wrote too much about one point (e.g. tourism creating jobs and economy) rather than trying to clearly develop more ideas.

Question 5

- (a) (i) The vast majority of candidates answered this correctly.
- (ii) Virtually all candidates identified Poland and most identified Singapore.
- (iii) Some candidates dealt with each country in turn and did not give a generalised comparison point of Europe and Asia. The most common reasons were an increased reliance on the tertiary sector or mechanization in Europe and cheap labour leading to industrial growth in Asia.
- (b) (i) Candidates still seem to find the skill of describing a distribution difficult and there were a number of vague answers. The idea of the zones being unevenly distributed (or clustered) was rarely mentioned. Too many candidates just combined together the locations as `they...` rather than distinguishing the three in the South and the one further north, however almost all recognised the link to railways.
- (ii) Very few candidates gained full marks and several gained no marks. Many described the distribution but did not explain it as the question required. Attempted explanations were usually



related to the urban areas and transport links but many did not explain their importance (in relation to labour supply/market and for transport of raw materials/finished products).

- (iii) Most candidates made some valid points on this question and scored some marks, typically a brief reference to the benefits of jobs and the consequent improvement in quality of life. However, many did not develop their points to good effect, particularly in relation to the disadvantages – for example, many candidates wrote about air and water pollution without explaining how this will be a disadvantage for people.
- (c) This was fairly well answered by many candidates though some wrote about the causes of the problem and not the impact, and others wrote about the impacts on people rather than the natural environment. There were lots of answers that had a country as a case study rather than an area resulting in a maximum of five marks only being possible. There were a small number of exceptionally good place specific answers which scored full marks.

Question 6

- (a) (i) Most candidates identified one of the two rivers which have their source in Guinea but flow to the sea through Sierra Leone.
- (ii) Most were able to give at least one reason for this. Many recognised issues of ownership, upper course pollution into the receiving country and consequences of the upper course country putting a dam across the river.
- (iii) Again this was well answered with many candidates writing about the benefits of clean drinking water, better hygiene and sanitation and the fact that less time would be consumed by fetching supplies of water giving time to do more constructive things, such as going to School or work.
- (b) (i) This was well answered with good use being made of the source material. Whilst many candidates scored three marks, the most common omission was why the demand for water was high in the south.
- (ii) Performance on this question was variable and there was repetition of dams and pipes despite 'other methods' being stated in the question. Many candidates offered little more than using water tankers and building reservoirs though well prepared and astute candidates referred to ideas such as using the aquifer, desalination and even cloud seeding. Some candidates missed the distribution aspect of the question - '...to supply water to areas that need it' and so wrote about methods of saving or cleaning water such as water butts, tanks or sewage treatment which were more pertinent to the following question.
- (iii) Some candidates clearly do not understand the term sustainable and wrote general answers about how water is used for a variety of purposes. Those who understood the term gave well thought out, practical ideas, many of which gained 4 or 5 marks.
- (c) This was well answered by those candidates who were able to enter Level 2 by giving a detailed description of how one type of energy is produced and in some cases some pleasing place specific information was incorporated. HEP was a popular choice, along with wind power, geothermal power and solar power. Some candidates wrote about nuclear power in France or Japan whilst others used an example of a thermal power station. However, weaker candidates struggled to include detail on one type of energy and therefore did not progress beyond Level 1.

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Paper 13

Key messages

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- make the choice of questions with care, ensuring that for each question chosen candidates have a named case study about which they can write in detail and with confidence
- answer the three chosen questions in order, starting with the one with which they are the most confident, and finishing with the one with which they are least confident (in case they run out of time)
- read the entire question first before answering any part, in order to decide which section requires which information to avoid repetition of answers
- highlight the command words and possibly other key words so that answers are always relevant to the question
- use the mark allocations in brackets as a guide to the amount of detail or number of responses required, not devoting too much time to those questions worth few marks, but ensuring that those worth more marks are answered in sufficient detail
- consider carefully their answers to the case studies and ensure that the focus of each response is correct, rather than including all facts about the chosen topic or area, developing each point fully rather than writing extensive lists of simple, basic points. It is better to fully develop three ideas rather than write extensive lists consisting of numerous simple points
- study the resources such as maps, photographs, graphs, diagrams and extracts carefully, using appropriate facts and statistics derived from resources to back up an answer and interpreting them by making appropriate comments, rather than just copying parts of them.

General Comments:

Paper 13

The examination was considered appropriate for the ability and age range of candidates as there was a good response to the May 2012 examination paper. The majority of candidates were able to answer in full and even weaker candidates attempted most sections of their chosen questions.

A high number of candidates presented work of a very high standard which was pleasing to see. There were only a few candidates who did not fully comprehend what was required in the question. Candidates also generally made good use of the resources provided.

Many candidates made use of the additional pages at the end and all candidates should be encouraged to do this if they need extra space to write their answer rather than trying to squeeze it onto the page when the lines have run out or at the sides of the page, as it becomes difficult to read (see above).

The examination paper gave a wide spread of marks allowing for positive achievement for all but a few and allowed for sufficient challenge for the most able.

There are still a few candidates who attempt all questions instead of following the rubric.

There are still a few candidates/centre's who are learning case studies from previous mark schemes which is not really conducive to candidates' understanding of the geography involved. Candidates who tend to do well on case study questions are the ones that use local case studies because their knowledge and understanding really shines through and they score good Level 2 or high Level 3 marks. The use of local case studies that candidates can write about in detail with place specific information or even visit them should be encouraged as opposed to learning about distant case studies that have no/or very little relevance to candidate's everyday lives. It is recognised that this is not always possible, for example when teaching about the impacts of a volcanic eruption, and a distant case study will probably have to be used – so teacher judgment is the key here to determining which case studies are most suited to their candidates and Centre. Also to select up to date examples that may have been in the news recently tend to offer a wealth of information and resources that can be used in the classroom when teaching about these examples/places which candidates will find more interesting and relevant and most importantly they will be able to write about them in detail in the examination.

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

Comments on specific questions:

Question 1

This question was by far the most popular choice made by candidates.

- (a) (i) Most candidates showed understanding and gained the mark. However, responses could have been better phrased as some weaker candidates tended to just swap the order of the key words in the question and then did not gain a mark. Some irrelevant references to 'birth rate and death rate were seen.
 - (ii) The majority of candidates gained both marks by correctly identifying a) stage 1 and b) stage 4. For those candidates who gained only 1 mark the mistake was usually made on part (b). However, the question was generally well answered.
 - (iii) Many candidates were sidetracked here by making frequent reference to birth rate, death rate and life expectancy. However, those who correctly focused on either describing changes in population structure (or the pyramids) tended to score two or three marks. Many other candidates who had focused on birth and death rates often scored a mark for identifying that there were more in the working population/economically active group.
 - (iv) This was a high scoring question which clearly posed few problems for candidates as they were able to identify the reasons why the population structure had changed. Some candidates however, gave reasons for the structure in stage 1 rather than focusing on change and development.
- (b) (i) Mixed responses were seen here with some candidates approaching the task in a clear and logical order with many referring to different rates of increase and quoting statistics to score either two or three marks. However, there are still a large number of candidates who fail to read the statistics accurately or fail to use them to show changes. Few candidates stated the simple change of 'both have increased'. Some candidates would benefit from practicing how to write their answers to questions such as these with greater clarity as there is a tendency to be somewhat confused.
- (ii) This question was generally well answered with many high scoring responses. Most candidates mentioned the government (or taxes), health care and pensions, the latter being phrased in many different and unusual ways. Similarly when care homes were mentioned it was not particularly well phrased. All mark scheme ideas were seen but charities, extended families and specific

services were seen less frequently. Many references were made to reduced fares which was fine but extended accounts of modifications to enable access were targeted at the question asked. Weaker candidates' responses tended to lack specific detail and made reference to 'services for the olds' which was too vague or made comments such as 'they have better welfare', also some inaccurate statements were made like 'they're given free houses' or 'toothbrushes', some candidates even suggested that there were 'foster homes for the elderly'.

- (c) A wide range of responses were seen here, however most candidates scored something for referring to issues such as greater dependency ratio, lack of workers, difficulties of financing etc. There were lots of attempts to develop ideas which reached Level 2, although relatively few added anything place specific to achieve full marks. Overall, the question differentiated well between candidates. Often the name of the country appeared to be random. Japan and China were the country's most often chosen, with some good place-specific knowledge displayed – especially China. A number of candidates chose East Devon as the "country" and then answered as if East Devon functioned as an independent country rather than as part of the UK. This would indicate that some candidates should try to adapt their knowledge to the question asked rather than giving rehearsed answers.

Question 2

The second most popular choice made by candidates.

- (a) (i) The majority of candidates correctly answered '25%' with very few getting it wrong.
- (ii) Most candidates gained the full two marks for correctly naming Australasia and Africa. However, some candidates lost marks by writing 'Australia' rather than 'Australasia' despite being asked for a continent and it being named on the map.
- (iii) Many candidates, but not all, could recognise that urbanisation was progressing more rapidly in Africa where figures were increasing most rapidly. Good use was made of statistics by many, although not all candidates gave comparative statistics for both countries (some just gave figures for one) so this could not be credited.
- (iv) A well understood question with many candidates gaining all four marks. Where they failed it was usually because of vagueness e.g. 'better way of life', 'better living standards' or 'better houses' which were not credit worthy. Also some candidates focused wrongly on push factors rather than pull factors.
- (b) (i) Many candidates gained all three marks here by making full use of the source. Some candidates lost out by using vague terms such as 'unplanned', 'overcrowded', 'over populated' despite all the specific information that was provided in Figure 4.
- (ii) Some good ideas were seen overall, with many being well expressed and developed for high marks. Weaker candidates were too reliant on simply repeating the problems from the previous answer and adding the word 'improve'. Candidates needed to say how these issues were improved but instead a number gave vague comments such as 'provide jobs'. Many candidates also gave rather lengthy answers which concentrated on adopting a one child policy which gained no credit. Better responses included how improvements could be made for example 'government builds brick built housing which would provide people with jobs in construction', or 'ensuring that rubbish is collected weekly' or 'build more Schools/hospitals', simply stating 'improve healthcare or education' was not enough to gain credit.
- (c) This was the least well answered sub part (c) question on the paper. Few candidates really understood what the rural-urban fringe was, and simply described general problems of urbanisation. Others wrote about shanty towns and favelas. Many answers referred to LEDC cities, or else applied LEDC problems to MEDC cities. It is fair to say that candidates did not really understand the question.

Question 3

This was not a popular question with very few candidates selecting it.

- (a) (i) Mixed responses were seen here with a surprising number of wrong answers made by selecting 'wave cut platform'.
- (ii) On the whole this question was generally well attempted. Most candidates could define the terms and relatively few reversed them.
- (iii) This was generally well answered. Many candidates concentrated on the formation of caves/arches and undercutting with the cliff retreating to gain full marks.
- (iv) Most candidates were able to gain at least two marks for 'longshore drift' and 'constructive waves' which were well understood, yet many candidates were unable to develop their response any further to gain full marks.
- (b) (i) Most candidates gained marks for simple observation, referring to fish, colourful and large variety of species etc. However, many missed easy marks by attempting to explain rather than describe. Many also made reference to 'divers' and 'shallow seas' which did not gain any credit.
- (ii) Varied responses were seen to this question and many responses noted clearly the difference between the three reefs, expressed it well and backed up their comments with appropriate diagrams. Some diagrams were poor and not always labelled and in some responses there was much confusion between the 3 types of reef amongst some candidates.
- (c) Most candidates were able to gain marks here and those who gained Level 2 did so generally because they included appropriate statistics to back up the points they were making. There was much explanation which the question did not ask for and often candidates would develop their responses in terms of explanation rather than description. The most popular choice selected by candidates was the Great Barrier Reef and some candidates were able to gain full Level 3 marks by including some place specific detail.

Question 4

This question was more popular than **Question 3** but still selected by relatively few candidates.

- (a) (i) Many candidates were able to recognise that the feature was a 'meander' but surprisingly many candidates did not recognise the feature and instead stated 'River Severn' or 'Ox-bow lake'.
- (ii) This was another simple task which many candidates misunderstood or did not use the key correctly. The candidates who named the land use as 'open space' tended to go on and score the second mark but many candidates named examples in the first box rather than quoting a land use as indicated in the key and therefore only scored one mark.
- (iii) Very few candidates scored full marks here. There were many references to rainfall seen as per the first and second line of the mark scheme but relatively few mentioned snow melt. Many candidates mentioned flat land but few of them developed the idea of it being alongside the river. Some good references were seen to urban growth/vegetation clearance which showed a good understanding of the processes involved.
- (iv) This question was generally well answered, using evidence from the map, although too many candidates tended to focus narrowly on transport issues. It was evident that many candidates did not understand what an 'Agricultural Showground' was.
- (b) (i) Good use was made of the resource and this question was generally well answered with the majority of candidates gaining at least two marks with many scoring full marks.
- (ii) This question was generally very well understood with some detailed and accurate responses which showed an understanding and development of the ideas identified in Figure 6. Marks were easily gained for ideas such as 'not enough water for crops', 'livestock not having enough food or water' and 'livestock die'.
- (c) A wide range of marks were seen for this question but overall it was poorly answered in general with too many responses being wrongly focused on exfoliation and/or freeze thaw weathering, neither of which are predominant in humid tropical regions.

Many candidates gained simple Level 1 marks for ideas such as 'there is more rain in the tropical regions'. To then gain Level 2 marks candidates then needed to show that 'more rain encouraged more chemical weathering to take place'. In order to extend this into Level 3 candidates would then extend the idea of chemical weathering by including ideas such as 'carbonate oxidation taking place' some candidates included a chemical equation showing geological understanding. Other ideas included biological weathering with some candidates focusing on plants or animals with some candidates giving examples of both.

Question 5

This was the third most popular choice made by candidates.

- (a) (i) Virtually all candidates correctly stated '150 000' and gained the mark.
- (ii) Again, this question was very well answered with many candidates scoring both marks by correctly identifying 'Sweden or Denmark' for A and 'Finland or Italy' for B. A few candidates named the same country for both A and B.
- (iii) Many good answers were seen to this question although some candidates scored zero as they missed the point and focused on the specific attractions people are seeking e.g. sunshine or scenery rather than generic reasons for the increase in international tourism as specified in the mark scheme e.g. 'increasing affluence', 'larger planes/cheaper flights', or 'increased holiday time'.
- (b) (i) Most candidates scored at least two marks mostly for ideas related to 'work/jobs' or 'increased trade' and 'development of the economy' being the most common answers. Some candidates wrongly focused on the attractions or benefits of the hotel for the tourists.
- (ii) Some good responses were seen and most candidates did focus on the natural environment (rather than human) and some high marks were gained. Weaker candidates tended to give brief comments e.g. 'scares animals', 'pollutes water' or 'litter dumped' without enough detail or precision to gain any credit.
- (iii) As for the previous question most candidates did focus on what they were asked which was people this time rather than the natural environment although not everyone did. Again some very good responses were seen, particularly relating to cultural issues. Some weaker responses were seen which gained no credit e.g. crowded, polluted, noisy etc.
- (c) This question was generally poorly answered compared to the previous sections of **Question 5**. Many responses consisted of undeveloped, simple ideas which were relevant for Level 1 e.g. 'beaches and hot weather' but there was also much irrelevant detail on how the authorities could attract tourists (e.g. through publicity) or on what the advantages of tourism are. Whilst it is encouraging that there appeared to be many attempts to use local case studies in many of them it was difficult to find just a few simple ideas from them so that some credit could be awarded.

Question 6

This question was the fourth most popular question selected by candidates.

- (a) (i) Answers were mostly correct with zone C being correctly identified. The most common incorrect answer was zone D.
- (ii) This question was also generally well answered with the vast majority of candidates gaining the full two marks. Some candidates named 'tree crops' which did not gain credit.
- (iii) Most candidates understood the question and as such the question was well attempted by candidates. Marks were credited for 'small plots', 'high yield' and lots of inputs.
- (iv) Mixed responses were seen to this question. Many candidates were sidetracked into answering the question by referring to subsistence and commercial farming rather than looking at more pertinent issues, such as the amount of land, irrigation, relief and soil quality etc. However, there were some good references made to land availability and water availability (from the river) from more perceptive candidates. The majority of marks were awarded for 'E was forested', 'D had more land' and 'D had access to water'.

- (b)(i)** Again varied responses were seen to this question with some candidates using the resource well and demonstrating a good understanding and thereby gaining two or three marks. However, some candidates did not use the resource well and gained no marks as they merely lifted statements from the resource such as 'low income', 'less food' or 'subsistence' without further clarification.
- (ii)** As stated above variable responses were seen to this question. Some full mark answers were seen covering many of the mark scheme ideas and/or developing them. Weaker answers simply referred vaguely to 'better methods', 'training/educating farmers' or 'the government spending money' therefore candidates needed to qualify their answers in order to gain any marks.
- (c)** Many candidates did not read this question properly or misunderstood it. They therefore answered it in relation to inputs, processes and outputs which had been set on a previous examination paper. Whilst there were some descriptions of the land use very few candidates were able to explain it or to develop their points. Better responses developed ideas about the climate to gain Level 2 marks by including statistics. However, responses were general not that strong and often credit could only be given to simple ideas amongst a lot of irrelevant ideas that were not credited.

GEOGRAPHY

Paper 2217/22
Investigation and Skills

Section A - Key Messages

- Practical skills questions need to be completed precisely.
- Given data should be interpreted to show understanding

General comments

This paper was comparable to previous sessions. In the longer answer sections **Question 3c**, **Question 4a(iii)** and **Question 6a** were done well. **Question 1e**, **Question 7c(v)**, **Question 8c(iii)** and **Question 8d(ii)** proved to be more difficult. **Question 8** was considerably more popular than **Question 7**, though level of achievement on each question was very similar.

Comments on specific questions

Section A

Question 1

- (a) Many candidates successfully located the disused rifle range in grid square 4686. A few opted for the rifle range that was not listed as disused, so put 4584.

The two railway lines meet at 471886. Some had this answer but many went for 472887. It is important to measure with a ruler, rather than making a "by eye" judgement, to ensure accuracy of six figure grid references.

The distance, by rail, to Harare, from the edge of the map (69 km) is given outside the map grid, where the railway line leaves the map. Some had 70 km due to reading the road distance.

- (b) On Fig. 1, **A** was a narrow tarred road, **B** was a reservoir, **C** was a dam, **D** was a spot height and **E** was a hut. Many had most of these correct, though some had copied out the full line from the key, instead of selecting the relevant part.

Many correctly identified orchard or plantation for the land use above 1680 m. A number just put agriculture, while some chose the wrong type of agriculture putting cultivation.

In **part (iii)**, the cultivated land had to be located by shading on Fig. 1. The most common mistake here was to shade for orchard / plantation instead of cultivation.

- (c) For the road distance, between the two benchmarks, answers between 1800 m and 2000 m were acceptable. The two benchmarks themselves gave a difference in height of 21.7 m, leading to a gradient of between 1 in 82 and 1 in 93. Relatively few candidates completed all of this correctly, with the gradient calculation causing the most difficulty. A number of candidates gave the reciprocal of the correct answer.

The road direction from 429894 to 417906 was NW.

- (d) To complete the cross-section in Fig. 2, the line needed to be continued to the right about the same height, with a small dip for the river valley. It was not necessary to construct the line. The river needed to be located between 46 mm and 50 mm from the left of Fig. 2. Most candidates who attempted this had their river located on the right part of the section, but not always with the required accuracy.
- (e) The wide tarred road is the most obvious road in 4588 and most candidates noted its presence. Those that mentioned that it was aligned W – E scored a mark. To get the other marks it was necessary to consider the other roads in the grid square, which were mostly straight and parallel with perpendicular intersections forming a SW - NE and NW - SE, high density grid pattern. Fewer candidates used any of these terms. Some had diverted into writing about the services linked by the roads.

Question 2

- (a) The isoline in Fig. 3 needed to make at least $\frac{3}{4}$ of a loop, dividing the sixes from the sevens in the west, the north and the east. The small area containing two tens then had to be shaded. Almost all candidates did the shading correctly. Errors with the line included joining up with the end of the line separating the sixes from the fives, or crossing over the line separating the sevens from the eights.
- (b) Almost all candidates correctly suggested nine for the intensity of the earthquake at the capital city. In **part (ii)**, four options were given in order to avoid the difficulty of not having precise end points for the measurement. 50 km was the correct answer and many candidates had selected this.
- (c) In this part, careful scrutiny of the resource in Fig. 4 was necessary. "Slight to moderate" damage would be expected in a "well-built ordinary structure" at Level 7 and both of these words were needed since "damage slight" is a feature of Level 6.

This should have led candidates to realise that damage to a poorly built building would indicate a lower Mercalli scale level than similar damage in a well-built building. Candidates struggled to express this concisely and weaker candidates approached it from the wrong angle and simply wrote that you'd know what level of damage to expect.

Many did give some good reasons for interviewing more than one person to assess Mercalli scale level, including to eliminate bias, to get an average opinion, to find out if everyone felt it and, following on from **part (ii)**, the idea that different people in different buildings would have different experiences.

Question 3

- (a) Since 1850 the beach level has lowered, with the most rapid change occurring in 1903 - 04. Most noted the decrease but many took the largest drop, from 1850 - 1903, as the most rapid change and had not considered the number of years over which this took place.

The village is about 7 metres (m) above sea level and answers in the range 6.8 m - 7.2 m were accepted. Most candidates had a numerically correct answer but not all of them gave the units of measurement.
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- (a) Candidates had to complete Fig. 6 with a bar 7 squares high and a plot for the growth rate in the square above the 2.5% line and aligned with the centre of the bar. Understandably the plotting of the growth rate proved to be more difficult and candidates are advised to check graph work carefully, if time permits, at the end of the examination.

With both population and growth rate decreasing in 1920, almost all candidates gave a correct answer here (**part (ii)**).

The annual growth rate from 1910 to 1970 shows an overall increase. To score the other marks candidates had to point out the decrease from 1910 to 1920 and the similar levels from 1930 to 1940. Most candidates scored at least 2 for this section.

- (b) Almost all candidates correctly inserted a bar on Fig. 7, to show 1 million females aged 70 - 74. However, when it came to evidence for a fall in growth rate, many focused on the upper part of the pyramid. Relatively few spotted the significance of the narrowing pyramid base, with less population aged 0 - 4 than 5 - 9 etc.

Question 5

- (a) Kenya had the largest percentage workforce in agriculture while Trinidad and Tobago used the largest amount of fertilizer per hectare. Almost all candidates had both of these correct.

China used 260 kg / hectare of fertilizer. Almost all candidates had the correct numerical value from the graph but some had omitted the units or just put per hectare.

There were several choices for two countries with the same percentage of workforce in agriculture. Most candidates opted for Germany and UK and USA could also have been paired with one of these. Other options were Ireland and New Zealand or Japan and Denmark.

- (b) The graph in Fig. 8 showed a weak negative relationship. Candidates generally described the relationship with reference to specific countries such as "countries with high fertilizer use have a low percentage in agriculture, e.g. Trinidad and Tobago". Comments like this, selected from different sections of the graph, were good for up to three marks. It was necessary to use at least one set of paired data for the other mark. Most candidates described the extremes. Some included examples in their answers and the best answers included correct data read from the graph.

Question 6

- (a) Candidates were asked to describe the physical features of the area shown in the photograph. The low coastline forms a bay, with a headland, and has a sandy beach as well as rocks. On the gentle slopes, in the background, trees could be seen. Many of the candidates mentioned at least 3 of these features. Some wrote instead about the human environment.

- (b) The cloud type shown was cumulus, with 3 oktas of cloud cover being the most appropriate of the options given. Candidates appeared to find this section difficult.

- (c) Evidence for tourism in the area was more straightforward. Most candidates noted the boats and the swimmers in the water. A few commented on the boat moorings and jetties in the background. Some considered the possible uses of the buildings on the far shore, but this was not valid as there was no evidence for them being hotels etc.

The evidence for secondary industry in the area was provided by the factory chimney on the skyline. Some candidates noticed this but others chose secondary industries that they thought would be in the area, e.g. boat building, while some chose a primary industry, typically fishing.

Section B

Section B is taken from 0460/42.

Key messages

- Some candidates still omit graph completion questions and lose marks as a result. This is especially true where candidates should take care to read all rubrics and questions so that these questions are not missed.
- Evidence was seen on this paper that candidates are still writing too much on some questions. The numbers of lines provided for a response should be a guide to the length of response required and candidates should tailor responses to the number of marks on offer for that question.
- Candidates should pay particular attention to command words to ascertain what is required of any response and to limit misunderstanding of questions
- Knowledge of fieldwork equipment and techniques has always been a key part of the Alternative to Coursework paper and as such should be an important part of preparation for this examination
- When answering Hypotheses 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.
- When giving figures in an answer always give the Units if they are not stated for you

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 wide range to June 2011 - with weaker candidates scoring on the practical questions, such as drawing graphs, calculations and diagram completions and those of higher ability scoring well on the more challenging sections requiring explanation and judgement especially regarding hypotheses. The mean mark was in line with June 2011 and the Paper was deemed to have been appropriate for the candidates taking it.

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. This year, however, many candidates chose to write longer answers than before and frequently wrote down the sides of the pages or added 4- or 16-page booklets at the end. Future papers may add an extra page of lines at the back as with Paper 12 for the convenience of candidates and Examiners. Most points for teachers to consider, when preparing candidates for future Paper 42 questions, relate to misunderstanding or ignoring command words and the use of equipment in fieldwork. Particular questions where candidates did not score well also often relate to them not fully reading the question. 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 that, although this is an Alternative to Coursework examination, candidates will still be expected to show that they know how fieldwork equipment is used even if they have only limited opportunity within the Centre. **Question 1** required candidates to have experience of measuring a gradient with specified equipment, drawing dispersion graphs, bar graphs and pie charts as well as applying their knowledge to changes in bedload as you go down a river bed. **Question 2** required candidates to have experience of creating questionnaires, as well as drawing divided bar graphs and analysing and making judgements from tables.

Comments on specific questions

Question 7

- (a) (i) Few candidates gained all 3 marks on this question despite the information given in the resource. The key was to describe how the candidates measured the slope. While many realised that the two poles should be vertical, on the ground, and down the slope, too many wanted to insert the poles into the ground or put them across the wadi bed instead of along it. Some, unrealistically, wanted to put one on the upper course and one in the lower course or at the top and bottom of the valley. The majority did locate the poles in suitable places 10 metres apart. The use of the clinometer varied. Some thought it could measure the distance between the poles; others knew it measured the angle but could not explain it well enough missing the key point about locating it on the top of one pole and lining it up with the top of the other pole. Some thought it measured the slope or gradient rather than the angle.

- (ii) This was done well; most candidates calculated 22.5 though a few worked out a different value and a number missed this question out completely.
 - (iii) Most candidates gave a good reason for calculating the figure four times including to be more reliable, make it a fair test, to calculate an average or to mask the impact of an anomaly. A candidate gave the answer "to be more accurate" which on its own was not credited.
 - (iv) Agreement with the hypothesis was the majority response here and most candidates followed it up by quoting data, as the question asked, mostly referring to the fall in the average angle from 27.5 to 22.5 to 11.5 degrees. A few did not make a decision on the hypothesis and a surprising number just described the change of angle downstream despite the question asking for data from Table 1.
- (b) The candidates were clearly directed to the equipment on the Insert however a number decided to use their own bringing in callipers to measure the size plus string and tape measures for various measurements. It was not enough to identify which piece of equipment would be used; *how* it would be used was the key. As there was one reserve mark for each of the three categories, with one floating mark, a candidate could score two marks on any one of size, weight or roundness. The size answers were disappointing, many answers stating that you would measure the size with the ruler. The best answers mentioned that you would place the rock against the ruler and measure its length in millimetres or centimetres. Weight measurements were discussed well although a few did suggest hooking the rock on the balance instead of putting it in the bag. This category scored two marks on most occasions. While most candidates did suggest comparing/estimating the roundness with the chart, a few also suggested using their eyes or putting the rock in a plastic bag then feeling it with their hands or even checking the rock against the ring on the balance. The use of the plastic bag was often imaginative in all three categories. Candidates must understand that if they are referred to a set of equipment, they must only use that and not bring in other types they may be familiar with to measure these factors.
- (c) (i) A lot of inaccuracies were seen on this graph. The majority could plot the two points though a few plotted 13 right and 9 elsewhere. A number (7%) did not attempt this question at all. While it might be understandable that the question might get "lost" in the surrounding graphs, candidates need to be trained to look for such questions in the layout. This is in the candidates' best interests because there could be knock-on effects to judgements made based on these graphs in later questions though Examiners try to ensure that this will not happen.
- (ii) Most candidates could plot 10, 3 and 1 here though some misread the vertical scale and others miscounted the number of stones in various weight categories leading to incorrect plotting. As with (i) though again a surprising number missed this out. Although shading was not credited on this occasion, it should be pointed out that many candidates did not shade their bars or, if they did, used a shading that was not the same as the provided graphs.
 - (iii) Occasionally pie charts are credited even if they are done the "wrong way round". However on this occasion, where the key clearly ran sequentially from Class 1-5, credit was only given if the line was plotted at 80 and the shading was in the order of the key. Many candidates did this well, though some of the shading, especially the horizontal lines, was marginal. Others did it the wrong way round and some (8%), as with the rest of the graphs in (c), did not attempt it at all.
 - (iv) Questions are set such that, even if graphs have been incorrectly completed or just missed out, there will not be a knock-on effect on later questions as far as possible. All the graphs set so far referred to the Middle course. Here the hypothesis was about the bedload becoming smaller and rounder downstream so the river graphs for the Upper and Lower course would be the best ones to look at giving evidence to support the hypothesis which most candidates correctly did for one mark. As the hypothesis referred to small and round there was one reserve mark for each of these with one other which could be used for a weight comment (Fig. 4) or other evidence for smaller/rounder pebbles. This was done well. Most gave evidence using statistics especially for roundness classes. The importance of units must be stressed e.g. cm in size comments and grammes in weight comments. Most compared upper to lower and many scored 4 marks on this. A small number disagreed with the hypothesis. A number did just repeat the hypothesis in other words as their evidence.

- (v) This question was about the effects of erosion on bedload as it was transported. Consequently what was expected was a description of attrition and/or abrasion, hydraulic corrosion. Too many candidates focused on the velocity of the river or deposition rather than erosion. Those that mentioned the erosional processes did not always describe them but was given to those that described the process that reduced bedload size. Attrition was the most common response though not always described. This section gained the lowest marks on **Question 1**.
- (d) Although this is a paper that covers fieldwork techniques, there is a degree of knowledge required and given the topic of dry river beds in a desert, it was logical to ask a pure knowledge question on exfoliation which is in the syllabus. Many candidates gained all three marks referring to large diurnal temperature ranges, heat causing expansion, cold causing contraction and the stresses of this causing layers to peel away. Others brought in moisture and confused exfoliation with freeze-thaw or wind erosion.
- (e) The key to success on this final part of **Question 1** was to note that the question was about how the candidates could have improved their data collection methods when investigating these two hypotheses; in other words how could they have done this investigation better. Consequently suggestions that referred to doing it in other seasons, on other rivers and in different weather conditions were irrelevant as they are ways to widen the research not to improve what they had just completed. Suggestions such as using more sites along the valley, collecting more rock samples, using better (named) equipment, carrying out a pilot study were all good ways that would have improved this investigation. A number gave three different pieces of named equipment for the three suggestions but this was restricted to a maximum of one mark to credit broader answers.

Question 8

- (a) (i) This was done well by those candidates that noticed the emboldened **questions** in the command line and focused purely on the weaknesses of those. Vagueness, general questions, irrelevant questions, reasons not asked for, were all mentioned however some widened their answers beyond the questions to the style/layout of the questionnaire e.g. it had a poor introduction, was too aggressive, was intrusive and impolite, did not have tick boxes. It was surprising that many candidates thought some questions were too open-ended when they were the opposite – closed - eliciting only yes/no responses.
 - (ii) This was done well, Most candidates commented on the fact that the second questionnaire did ask for reasons, had relevant questions, had an informative introduction and gave choices. They also recognised that asking for age/gender would help in analysing whether different groups held different opinions. Some suggested it would be quicker but another look at the first questionnaire should demonstrate that that would not be the case as all 4 questions could be answered yes/no; this also counteracts the suggestion that the second questionnaire would involve less writing. Although issues of politeness were not credited; it was heartening to see how many candidates thought that politeness to interviewees was crucial to many successful investigations.
 - (iii) The advantages of systematic sampling are that it is easy to organise by taking every nth person/house and avoids bias/candidate choice thereby ensuring a fair test. This was by far the most successful and common answer given. A few candidates wrote about stratified sampling but did not mention its name e.g. taking sub-groups of age/gender. There was some confusion among those that chose Random sampling as they did not define whether it was the formal type involving random numbers or the “loose” type where you just asked anybody you saw. Consequently it was difficult to credit the random description and the reason for choosing it unless candidates made clear which type they would use. This is an area for Centres to clarify but sampling answers have improved in recent years.
- (b) (i) By far the majority chose the correct answer regarding the turbines only working “*when it is very windy*”.
 - (ii) This was plotted and shaded well by most candidates especially the 19 plot which required careful judgement.

- (iii) Almost all candidates agreed that the Hypothesis was supported and also gave data to support it. e.g. 72% or 72/100 or 72 supported it but 28 did not. A number of responses just gave the percentage on its own, cannot be credited and others, while agreeing with the hypothesis, described the reasons for support when the question clearly asked for data.
- (iv) The key to a successful answer here was to read the question and notice that it asked for reasons *“not shown in Table 4”* – in other words not repeating wind power is renewable, would not cause pollution, is free etc. Too many candidates ignored this and gave the reasons seen in Table 4. Those that scored marks said that they were low maintenance, can be in remote areas (not everywhere), have low noise (not no noise), create jobs (but not in the local area), avoid the need to mine fossil fuels. Answers that referred to them being cheap (must relate to cost of others), good to look at, attracted tourists and also did not contribute to global warming (indirectly linked to pollution), did not harm the environment (effects on birds/habitats) were not credited here. This section yielded the lowest marks on **Question 2**.
- (c)(i) A good deal of correct plotting was seen here with most candidates gaining 3 marks. The middle shading was not always clear as some just matched the provided lines. As with all graphs on this paper, a number (6%) missed this question out completely.
- (ii) Almost all chose the statement about *“few jobs”* though a few responses added *“a”* to it which slightly altered its meaning. A very small number just wrote *“Statement 5”* or *“the last statement”* which was the right choice and was credited but it would have been better if they had written the statement out.
- (iii) A careful look at the table gave clear evidence that there were many people for the wind turbines and many against for different reasons. For many candidates this correctly pointed them to the judgement that the hypothesis was *partly true* or *true to an extent*. Once that decision was made, most then gained the other marks for quoting the higher percentages of either argument with one mark reserved for one argument for and against. As an exception, credit was also given if the candidate stated the hypothesis was true and referred to *60% against as the turbine would spoil the view* as the hypothesis did end with *“on the hilltop”*. Too many candidates made a bold judgement that it was true or false with no midway position; as the evidence clearly pointed that was not the case, no marks were credited. Marks were credited for valid evidence if there was no hypothesis decision made. The evidence needed to state the largest figure e.g. 90% agree that there would be a lot of noise (made up of 70% agree strongly and 20 agree); some in this example just said 70% agree which was wrong. Too many said *“lots of people”* or *“many”* or just said *“they”*; answers were credited if they referred to the larger percentage or *“Most”*. Candidates need to be trained into considering giving a partial agreement as well as true/false to hypotheses. Candidates who looked clearly at the evidence did this and consequently gained the full 5 marks.
- (d)(i) This was done well with HEP, solar power and geothermal power being the most common. Candidates needed to state an example of renewable energy as asked so weak answers such as sunlight, water were not accepted. Some gave wood, gas, coal, thermal and nuclear power but the majority by far gave two acceptable examples as listed in the syllabus.
- (ii) There still appears to be a lot of confusion over how global warming occurs. Centres need to carefully differentiate between the existence and importance of the ozone layer and the effect of pollution on the *“blanket”* that prevents long-wave radiation leaving. Many used the extra penetration through the ozone layer as an influence. The best answers made no mention of the ozone layer and followed the sequence of short-wave radiation coming in, reflecting off the earth’s surface, being trapped by the blanket and bouncing back to create heat and increase temperatures. Most marks were found in the second half of the answer as too many candidates insisted on describing the causes of global warming for which there was no credit.

GEOGRAPHY

Paper 2217/23
Investigation and Skills

Key Messages

- Practical skills questions need to be completed precisely.
- Given data should be interpreted to show understanding
- In **Section B**, careful analysis should be backed up with evidence

General comments

This paper was comparable to previous sessions. In the longer answer sections **Question 3c**, **Question 4a(iii)** and **Question 6a** were done well. **Question 1e**, **Question 7c(v)**, **Question 8c(iii)** and **Question 8d(ii)** proved to be more difficult. **Question 8** was considerably more popular than **Question 7**, though level of achievement on each question was very similar.

Comments on specific questions

Section A

Question 1

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The two railway lines meet at 471886. Some had this answer but many went for 472887. It is important to measure with a ruler, rather than making a "by eye" judgement, to ensure accuracy of six figure grid references.

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Section B

Key messages

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General comments

Most candidates found this examination enabled them to demonstrate what they knew, understood and could do. The overall range of marks was a similar range to previous years - with weaker candidates scoring on the practical questions, such as drawing and interpreting graphs and diagrams, and candidates of higher ability scoring well on the more challenging sections requiring explanation and judgement especially regarding hypotheses. Overall **Question 7** proved to be slightly easier than **Question 8**.

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. Although there were no 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. Particular questions where candidates did not score well often related to them not carefully reading the question, for example **Question 8(a)** where they had to explain rather than describe land use and **8 (d) (i)** where a representative sample was the focus. Unlike some previous papers there were no questions which required candidates to develop their own hypothesis or investigation methodology. However, these questions are frequently included on this paper and are an area which Centres should practise with candidates

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 appropriate fieldwork techniques even if they have only limited opportunity for fieldwork within the Centre. For example **Questions 7(b) (i), 7(c) (i), 7 (d) (i) and 8(b) (i)** focused on specific equipment and techniques, commonly used in fieldwork.

Comments on specific questions

Question 7

- (a) Generally sensible advice was suggested with particular emphasis on the dangers of waves, slippery rocks, and the need to wear suitable clothing and footwear. Answers which were not credited included wearing life jackets and the need for swimming lessons. Some weaker answers showed little appreciation of what the fieldwork would involve, that is working on the beach or at the shoreline.
- (b)(i) Most candidates suggested using a stopwatch, counting the waves, giving a specified time, and taking an average of measurements. Various suggestions were made for checking when the wave reached the beach, using candidates' shoes, ranging poles and bottles.
- (ii) Most candidates correctly completed the bar graph.
- (iii) Many candidates showed good knowledge of the features of destructive waves. The best candidates wrote in detail about wave frequency, swash and backwash, and height. Weaker answers were typified by vague descriptions such as powerful, lots of energy, dangerous and big or strong.

- (c) (i) The question differentiated well between candidates. There were some detailed descriptions of how the profiles would be measured, which were probably based on actual fieldwork. The inclusion of a diagram to show the measuring equipment helped candidates to focus their answers. Many candidates did not refer to the clinometer being held at a fixed height on a ranging pole and being pointed at the same height on the other pole. Also many candidates believed that the poles should be positioned at either end of the transect rather than a measured and consistent distance apart. Some candidates showed unfamiliarity with the equipment and suggested that the poles should be placed in the sea and the clinometer could be used to measure the waves.
- (ii) Almost all candidates calculated the average angle of slope accurately.
- (iii) Most candidates concluded that the hypothesis was correct and gained the second mark either by use of appropriate paired data or a comparative description.
- (d) (i) The answers were variable in detail. A small number of candidates suggested using a quadrat to identify which stones to collect, but most ignored this aspect of collection. Some candidates did not realise that seven stones were collected. The better answers referred to measuring the longest axis or length of the stone rather than just the size.
- (ii) Most candidates correctly plotted the correct symbol. The most common error was to position the plot lower down the scale, not realising that each horizontal line on the scale represented 4 mm.
- (iii) This question also discriminated well between the quality of answer. There were many well thought out conclusions which used the evidence to conclude that the hypothesis was partially true. This conclusion was reached where candidates recognised that the relationship was true until 12 metres away from the low water mark where there was an anomaly in the results. However, some candidates wrongly concluded that the hypothesis was incorrect just because of the one anomalous result.
- (e) Many suggestions were made about how to improve the measuring task. The most common suggestions were to collect more than seven rock samples, and to do the profile measurements at more locations on the beach or on different beaches in the area. Weaker answers were typified by statements such as 'make more measurements' and 'repeat the experiment'.
- (f) Candidates who had studied coastal protection and management described ideas such as groynes, beach replenishment and breakwaters. However, many candidates ignored the scale of the effects and suggested minimal influences such as bathing in the sea, building sandcastles on the beach, and walking along the beach. They gained no credit for these ideas.

Question 8

- (a) Many candidates failed to answer the question because they described different areas of land use rather than explaining why areas of a city differ. Candidates described the CBD or inner suburbs but did not consider why these different areas grew up. Candidates who answered the question correctly usually wrote about cost and availability of land, or availability of space within the city. Only the most able candidates included ideas based on transport routes or physical features.
- (b) (i) If candidates were familiar with using perception study recording sheets they wrote confidently about making a decision about each category and recording their decision on the recording sheet. However, some candidates thought that these recording sheets should be given to people in the area which is not the correct idea of a perception study.
- (ii) The inclusion of 'trial' in the question appeared to assist candidates and directed them away from the common misconception that a pilot study is concerned with an aeroplane. Most candidates recognised the benefits of doing a practice survey before beginning the real thing. Many suggested that it would be useful to practice technique and improve the recording sheet. Weaker answers focused on the convenience of doing the pilot study near the school, and a few weak answers suggested the pilot study would be useful to check equipment, but the only equipment needed for this investigation was a pen and the recording sheet.

- (c) (i)** Most candidates plotted the bi-polar graph correctly. Two plotting errors were to connect the points to zero at the bottom of the graph and to draw a solid line rather than a dashed line.
- (ii)** Most candidates made a good attempt to justify and support the conclusion given in the question, which did differentiate well between the qualities of answer. Weaker answers only referred to the overall environmental score in the different areas whilst the best answers included much more evidence from the bi-polar analysis, including reference to anomalies. Whilst weaker candidates compared two areas but did not explain which was nearer or further from the town Centre.
- (iii)** Better candidates recognised weaknesses of the fieldwork technique and explained that one road would not be representative of an area and that the scoring system of a bi-polar survey is subjective. Weaker candidates included statements such as 'the fieldwork would be inaccurate' which were not credited.
- (d) (i)** Many candidates did not focus clearly on one sampling technique. Their answers were rather vague about the methodology of doing a questionnaire. The key word in the question was 'representative'. Although candidates gained one mark for describing random or systematic sampling, the answers which focused on stratified sampling were the most appropriate to acquire a representative sample.
- (ii)** Almost all candidates correctly completed the survey sheet.
- (iii)** Many answers were well thought out and candidates included ideas about different walking speeds or methods of transport, or that the people questioned would not know an exact time but that peoples' perception of time taken would vary.
- (iv)** Most candidates completed the accessibility index correctly. The main error was not including the score which the candidate had worked out in the total score, so calculating an answer of 17 rather than 20.
- (v)** Most candidates correctly plotted their index score on the dispersion graph.
- (vi)** Despite being told that the median value is the middle one, some candidates circled the wrong value.
- (vii)** Answers were variable in quality although most candidates realised that the hypothesis was not true. They then attempted to use the evidence from the dispersion graph to support their conclusion. The most common weakness was not referring to the median value but just the value or score in general. Better answers also included evidence about the range of results from the three areas.
- (e)** Some candidates did not understand that the question focused on differences in one area rather than differences between the areas. Consequently they repeated ideas from **d(iii)**. The more perceptive candidates did recognise that people would live at different distances from services or use different service providers if there was choice.