GEOGRAPHY

Paper 2217/12
Paper 12

Key Messages:

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

- ensure that the examination rubric is followed correctly, answering 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 and ensure that sub-sections are not missed.
- read the questions carefully. If it helps to do so, underline command words and words which indicate the context of the question.
- respond in the correct way to command words used in questions, in particular 'identify', 'describe', 'explain' and 'compare'.
- identify the correct focus specified in the question stem, e.g. causes or effects/impacts, natural population growth or migration, problems or how they are being managed..
- ensure that they respond correctly to key words and learn the meanings of geographical words and phrases in order to be able to define and accurately use geographical terminology. When defining words or phrases, candidates should not simply repeat a word or words as part of their definition.
- understand 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, information about the number of points to be made and the amount of 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.
- ensure that accurate statistics are given where required to support an answer based on a graph.
- practise the skill of describing the features or characteristics of a landscape, landform, activity or building shown on a photograph.
- 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. The syllabus identifies the scale required for each case study.
- avoid writing a long introduction to any question (e.g. to provide place specific information) at the expense of answering it in detail.
- develop points and link ideas wherever possible in case studies and include place detail.
- ensure that comparative language and phrases are used where a question requires comparison.
- ensure knowledge of appropriate physical processes and an ability to explain the formation of features using key terms and clearly sequenced ideas.
- write in detail and develop ideas in **(b)(ii)** questions (worth 5 marks), where development marks are available.
- when using the extra pages at the back of the question and answer booklet indicate that the answer is continued and clearly show the number of the question on the extra page. Continue answers on the continuation pages at the back of the booklet rather than somewhere else inside the answer booklet.

General Comments:

Most candidates were able to make a genuine attempt at their chosen questions. However, weaker candidates found it difficult to interpret questions and write relevant answers. Candidates seemed to have sufficient time to complete the paper.

Most candidates followed the rubric. However a few rubric errors were still seen and teachers should ensure that candidates know that they have to answer only one question from each section.

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

Questions 1, **3** and **6** were the most popular questions within each section. There were good answers seen to all questions, including those requiring extended writing. An area for improvement for candidates would be maximizing the marks scored on the part **(c)** questions. The part **(c)** questions that were answered the most successfully were the case studies about problems caused by a large percentage of dependents, the opportunities of living close to a river and the causes of an earthquake. High quality answers in these case studies were characterised by developed ideas with some place detail. Weaker responses tended to be generic developments of ideas with little place detail to support them, whilst others just used simple, brief statements. In some cases a significant amount of detail included by candidates was not relevant to the question being asked, especially where long introductions occupied much of the answer space.

Case studies require place specific information to allow access to the highest level. This requirement can vary between questions – a country (**Question 1**) or an urban area (**Question 2**) or a river (**Question 4**). Some candidates do not carefully consider their choice, limiting their mark by inappropriate choices, for example, choosing a country rather than an urban area or vice versa. Where an 'area' is required, (such as in **Questions 3**, **5** and **6**) choosing a country usually tends to be unacceptable as this is likely to be at too large a scale.

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

Comments on specific questions:

Question 1

This was much more popular than **Question 2** with a large number of candidates attempting this question.

(a) (i) Most candidates estimated the correct number of young dependents, though some did not add up the bars to obtain the total number.

(a) (ii) This was well answered. Most candidates recognised the decrease and increase which is likely to occur by 2025 in young and old dependents respectively. Some referred to statistics rather than acting on the command word 'describe'.

(a) (iii) This was generally well answered with common correct ideas being about high birth rates, high infant mortality, education about and availability of family planning, tradition and the need to look after parents. Whilst most candidates scored something a number of weaker candidates made vague, general statements (e.g. poor healthcare, lack of education) and some focused on the elderly rather than the young dependents.

(a) (iv) Good answers included comparison and many scored one mark for each section of the structure. Few scored a fourth mark for more detail. Incorrect answers did not make the necessary comparison or answered in terms of shape of the pyramid rather than the actual population structure as required. Many candidates added explanations which were not required.

(b) (i) Many candidates gained full credit for this question, helped by the three time periods being separated. Some candidates failed to score because they did not answer descriptively but used statistics.

(b) (ii) There were many very good answers which gave reasons why the number of old dependents is increasing. The most common reasons were an increasing life expectancy, due to improvements in healthcare, treatment of disease, sanitation, food supply, pension provision and specific care for

the elderly. Whilst reference to decreasing birth rates was relevant candidates could only score one mark for this, therefore detailed reasoning was not valid to the answer as the focus was clearly on old dependents rather than young ones.

(b) (iii) Again there were many good answers which focused on increased taxes, failing economy, pensions, ageing population and less working population. Some candidates made the error of focusing on why birth rates were low.

(c) There were some very good answers to this question. Common successful examples were Japan and the UK, though there were many other countries chosen. Although a country was named by most candidates many ideas were generic and there was little place detail. Some weaker candidates focused generally on overpopulation which was not acceptable. Usually the case studies focusing on old dependents were most successful as answers which concentrated on young dependents often only gained credit for developed ideas about schools. Whilst many candidates showed a good understanding of the problems a common error was to select China, focusing on the one child policy with far too much superfluous detail and only a brief reference to problems of increasing young or old dependents. Some candidates also referred to both young and old dependents but never fully described the problems.

Question 2

Fewer candidates answered this question and the overall performance was not as impressive as that on **Question 1**.

(a) (i) Most candidates identified housing as the main land use.

(a) (ii) This was poorly answered by many candidates who focused incorrectly on accessibility to the CBD rather than referring to the cost of land and pressure on space.

(a) (iii) This was generally well answered with most candidates making valid points about the distribution, especially references to proximity to the River Orwell, roads and railway lines. Some candidates added unnecessary explanation which they then repeated in the following question.

(a) (iv) This question discriminated well with more perceptive candidates referring to a variety of ideas. Weaker candidates focused on the CBD, assuming wrongly that the market would need to be local. Although many suggested that various methods of transport were important, few explained the reasons for this.

(b) (i) The question asked for ‘land uses’ to be identified and a significant number of candidates did not include a land use in their answer referring instead to activities.

(b) (ii) This was a good discriminating question. Better candidates showed good understanding by referring to large space, ease of access, low cost land and proximity customers. Some also explained that the airport or shopping centre could be in the rural-urban fringe because of noise or air pollution and many candidates developed their ideas for further credit. Some weaker candidates put an incorrect focus on the activities rather than their location or went through each land use and gave brief and repetitive reasons for the three land uses being located in the rural-urban fringe.

(c) Whilst some good responses were seen many were not developed answers and few contained place specific information. Many candidates wrote generally about the problems caused by urban growth or about ‘overpopulation’ without recognising the need to focus on urban sprawl. The best answers were about the impacts on the natural environment on the areas in the rural-urban fringe, or about problems caused by the daily movement of people over large distances, such as traffic congestion, many developing their ideas by reference to noise and/or air pollution.

Question 3

This question was more popular than **Question 4** and candidates who answered this question performed slightly better.

(a) (i) Many candidates identified the shield volcano.

(a) (ii) The accuracy of this answer varied and many candidates were unable to correctly identify both features from the diagram. The magma chamber was sometimes referred to as just 'magma' and the crater was referred to as 'mouth' or confused with the main vent.

(a) (iii) This was generally well answered and candidates knew the differences between the two types of volcano. Typical answers included references to steep slopes, higher, viscous lava, ash and narrower base. Common errors were to refer to the type of plate boundary or the frequency of eruption. Successful candidates made good use of Fig. 4 to generate their ideas.

(a) (iv) This was a good discriminator, which depended on whether the candidate understood 'distribution'. Some impressive answers were seen, equally some weak ones with vague references to continents and land/seas. Many candidates correctly identified the link between location and plate boundaries, and some candidates also mentioned hotspots. A common error that was that some candidates explained rather than described the global distribution of volcanoes and/or included incorrect references to conservative plate boundaries.

(b) (i) Many candidates only gained credit for identifying an effect on the economy. Many candidates did not understand the term 'natural environment' so wrote about farming, or 'infrastructure' so wrote about buildings.

(b) (ii) This was a topic well-known to many candidates who scored well. Some responses gave detailed ideas about 'earthquake-proof' buildings, developing ideas well for further credit. In addition many referred to earthquake drills, education about how to react during an earthquake, evacuation routes and trained rescue teams. There are still significant numbers of candidates who incorrectly think that an earthquake can be predicted with certainty, enabling the evacuation of the entire population.

(c) This question discriminated well and there were a number of very good answers where candidates chose an appropriate example (e.g. Kobe, Haiti, Sendai), named the correct plates which interacted and clearly explained the causes of their chosen earthquake. Such candidates developed ideas about convection currents, relative plate movement, friction, pressure build up and release in the correct sequence, sometimes using appropriate and sophisticated terminology. In contrast many did not score marks because they only wrote about effects of an earthquake. Some candidates knew the sequence of processes but referred to incorrect plates or plate movement or expressed ideas in simplistic terms (e.g. 'plates bump into each other'). Many candidates used examples taken from Japan, however the country name alone was insufficient to locate the case study so answers were then restricted to 5 marks maximum. When the country is small (e.g. Haiti) this is acceptable.

Question 4

This question was answered by a significant number of candidates but was not as popular as **Question 4**.

(a) (i) This was a good discriminator.

(a) (ii) Answers contained a mixture of right and wrong answers to both parts of the question, suggesting that not all candidates are familiar with hydrographs.

(a) (iii) Whilst there were some excellent responses many responses did not show a clear understanding of what was required by the question with many covering why rivers floods from the point of view of the river being unable to hold so much water. The best candidates wrote about overland flow, channel flow or groundwater flow.

(a) (iv) There were many good answers which began with the idea that the river would flow faster and therefore with more energy. They then went on to link this to more erosion and transportation, often including a reference to an appropriate named process or processes.

(b) (i) Explanations varied in quality and accuracy. Weaker responses showed little understanding of the terms and gave inaccurate answers. Common errors included responses such as 'land where the river drains', 'where water is stored' and 'streams going off the main river'.

(b) (ii) This was another good discriminating question. The best answers focused on problems for the natural environment, notably habitat loss, impact on the food chain, animal deaths and soil erosion with excellent examples of good development seen. Answers about human problems usually began with flooding and developed the idea of how it impacted on homes or people's lives. Answers about climate change and global warming were not appropriate as the question asked about impacts 'in Oregon'.

(c) Many candidates chose the Nile, Ganges or Amazon as their case study and the best answers included benefits for farming, fishing, trade and tourism. The best answers seen contained place detail about farming or tourism and trade, some with statistics and place detail. Weaker candidates tended to write simplistic generic lists. Some used local examples, and whilst this is to be encouraged, some of these answers lacked specific detail.

Question 5

This question was answered by a significant number of candidates but was not as popular as **Question 6**.

(a) (i) There were many acceptable answers, however some candidates were too vague in their choice of farming type, giving answers which could either be subsistence or commercial (e.g. arable, intensive).

(a) (ii) Many candidates correctly identified the relationship shown on the graph and a significant proportion also gave details contrasting countries, such as Mali and the U.K, to illustrate the relationship. Some answers from weaker candidates were expressed in such a way that they did not understand what the variables plotted actually represented.

(a) (iii) Candidates covered all acceptable answers but few gained full credit. Answers were often too vague and did not link the factor to a specific crop or type of farming.

(a) (iv) As in the previous question there were various ideas included, with different levels of sophistication and understanding. The most common correct ones were deforestation, soil exhaustion and unprotected soil. Some candidates failed to use the correct terms (e.g. 'overfarming' was often referred to) and relatively few referred to the simple ideas of soil being 'washed away by rain' or 'being blown away by the wind when dry'. Many candidates also wrongly linked use of fertilisers to soil erosion.

(b) (i) Many candidates answered well and recognised the two comparisons which were required. Better candidates gave accurate figures to support their comparison.

(b) (ii) Many strategies were suggested usually beginning with emergency aid. The question discriminated well and good candidates tended to explore a wide range of strategies to increase food availability. They showed good knowledge of strategies to increase production and had been prepared well for this type of question. A small minority made a reference to making farming more intensive without any elaboration as to how this would be achieved. Some candidates suggested 'education to improve farming' but did not specify what the education would focus on.

(c) Many candidates did not name an agricultural area, just naming an entire country which was not precise enough. Such answers were awarded a maximum of 5 marks. Too many descriptions, even from stronger candidates, were simplistic and most candidates, despite listing many inputs, processes and outputs, did not develop their ideas. The best answers included details of rainfall, temperature, soil type or irrigation methods or provided accurate statistics relating to inputs or outputs.

Question 6

This was more popular than **Question 5** yet overall performance on this pair of questions was almost identical.

(a) (i) Many candidates correctly chose 'secondary' but a significant minority chose 'primary' or 'tertiary'.

(a) (ii) The question discriminated well. Simple correct ideas about the buildings being tall and cylindrical were suggested by many candidates, but weaker answers focused on speculating what their use was or described them as 'big'.

(a) (iii) This was a challenging question and a good discriminator. Many responses did not show an understanding of what was meant by political factors, however the best answers showed excellent understanding in referring to issues such as tax incentives, pollution legislation, and, most frequently, political stability.

(a) (iv) The question discriminated well. Many candidates did give two factors and explained why they influenced industrial location. Weaker answers failed to explain the importance of the factors. A common weakness was to refer to 'transport' without specifying a type of transport.

(b) (i) Many candidates correctly identified three problems from the passage. Some weaker candidates lost marks by not elaborating about how 'air pollution' or 'contaminated water' cause problems for people.

(b) (ii) This question allowed good discrimination. It was answered well by many candidates who referred to the expense of any solution, the money brought into the country and potential corruption of decision makers, plus the jobs created which might be lost if the transnational company pulled out of the country as a result of legislation. Some answers were simplistic yet more perceptive candidates developed these ideas, for example by referring to the multiplier effect.

(c) Most candidates identified physical and human landscapes which attracted tourists but many found difficulty in expanding their ideas to explain why these landscapes attract tourists. Thus most answers scored marks (frequently level 1) but few gained full credit. There were notable exceptions of examples which candidates had clearly studied in detail, including local examples, which incorporated good place detail. Some candidates named a country, such as Kenya, and then took examples from different parts of the country which restricted their final mark.

GEOGRAPHY

Paper 2217/13
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 and ensure that sub-sections are not missed.
- read the questions carefully. If it helps to do so, underline command words and words which indicate the context of the question.
- respond in the correct way to command words used in questions, in particular 'identify', 'describe', 'explain' and 'compare'.
- identify the correct focus specified in the question stem – e.g. causes or effects/impacts, natural population growth or migration, problems or how they are being managed.
- ensure that they respond correctly to key words and learn the meanings of geographical words and phrases in order to be able to define and accurately use geographical terminology. When defining words or phrases, candidates should not simply repeat a word or words as part of their definition.
- understand 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, information about the number of points to be made and the amount of 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.
- ensure that accurate statistics are given where required to support an answer based on a graph.
- practise the skill of describing the features or characteristics of a landscape, landform, activity or building shown on a photograph.
- 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. The syllabus identifies the scale required for each case study.
- avoid writing a long introduction to any question (e.g. to provide place specific information) at the expense of answering it in detail.
- develop points and link ideas wherever possible in case studies and include place detail.
- ensure knowledge of appropriate physical processes and an ability to explain the formation of features using key terms and clearly sequenced ideas.
- ensure that comparative language and phrases are used where a question requires comparison.
- write in detail and develop ideas in **(b)(ii)** questions (worth 5 marks), where development marks are available.
- when using the extra pages at the back of the question and answer booklet indicate that the answer is continued and clearly show the number of the question on the extra page. Continue answers on the continuation pages at the back of the booklet rather than somewhere else inside the answer booklet.

General Comments

Most candidates were able to make a genuine attempt at their chosen questions. However, weaker candidates found it difficult to interpret questions and write relevant answers. Candidates seemed to have sufficient time to complete the paper.

Most candidates followed the rubric. However a few rubric errors were still seen and teachers should ensure that candidates know that they have to answer only one question from each section.

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

Questions 1, 3 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 a population policy, impacts of an earthquake and the impacts of a transnational company. High quality answers in these case studies were characterised by developed ideas with some place detail. Weaker responses tended to be generic developments of ideas with little place detail to support them, whilst others just used simple, brief statements. In some cases a significant amount of detail included by candidates was not relevant to the question being asked, especially where long introductions occupied much of the answer space.

Case studies require place specific information to allow access to the highest level. This requirement can vary between questions – an urban area (**Q2**) or a country (**Q1**) or an earthquake in an area (**Q3**). Some candidates do not carefully consider their choice, limiting their mark by inappropriate choices, for example, choosing a country rather than an urban area or vice versa. Where an 'area' is required, (such as in **Q4** and **Q6**) choosing a country usually tends to be unacceptable as this is likely to be at too large a scale.

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

Comments on specific questions

Question 1

(a) (i) This was well answered. The focus of the question was on the difference between births and deaths.

(ii) This was very well answered and nearly all candidates were able to use the data provided to accurately calculate the natural population growth of New Zealand.

(iii) This was generally well answered with candidates able to give a range of reasons to explain population decline. The focus of this question was an MEDC so answers needed to relate to the given context. The focus of the question was also about reasons for a declining birth rate so some candidates lost marks through giving several references to reasons for high death rates.

(b) (i) This was generally well answered. Candidates were able to identify countries which had a child mortality rate of over 150. Candidates were also able to identify that many of these countries were in the centre of Africa. The best answers described the distribution using accurate geographical terms such as "unevenly distributed" or "mainly between the tropics". Some responses used inappropriate use of terms such as "above" and "below" to describe location with regards to lines of latitude. In general, describing a distribution is still an area where some candidates would benefit from further practice.

(ii) Most candidates understood the question and performed well. There were some excellent answers seen. Typical responses included references to food, water, healthcare and named diseases. "Education" on its own was not credited and this should have been linked to an idea of what the education is about – for example, "people are better educated about how to prevent disease". Very occasionally, there were some inappropriate references to high birth rates.

(iii) The full range of marks was seen for this question. Some responses did not show a complete understanding of the question and recognise the need to relate the high birth rate to the high child mortality rate. Typical answers seen included references to children being needed to work on the farm, or bring in income or replace children that die. These were entirely appropriate because they focused on the value of children. Development marks were available and, whilst some excellent development was seen, candidates should be reminded of the importance of including detail and developing ideas in **(b)(ii)** questions rather than just listing simple ideas.

(c) There was a range of case studies used but the most popular was China. This question was answered well and there were some good examples of development of aspects of the policy seen to access Level 2. The focus of the question was to describe the policy – some candidates, however, incorrectly focused on, or developed their answers in relation to, the impacts of the policy which were not relevant. In some cases, place specific information was lacking to access the full 7 marks.

Question 2

Very few candidates answered this question. Candidates in general did not perform as well on this question as they did if they answered Question 1.

(a) (i) This was generally well answered. There were some incorrect references to "town".

(ii) Most candidates, although not all, understood this question and, on the whole, it was well answered.

(iii) This question was not always well answered. Candidates did not always fully understand the question and focused on reasons for the original site of a settlement rather than on reasons for subsequent growth.

(b) (i) This question was very well answered with almost all candidates gaining full credit. Good use was made of the images.

(ii) This question was not well answered. Typical answers that received credit were for ideas relating to the fact that low order services are used by most people and used frequently. A small number of very good responses were seen that went beyond these ideas and made good use of geographical terminology such as "threshold population".

(iii) In general, candidates did not perform well on this question. The typical ideas that gained credit were for points relating to "large population" and being able to "make a profit". There were many incorrect references to the towns and cities being where the rich people lived or the idea that people in these settlements had high incomes.

(c) This question showed a range of marks. Most candidates understood that they had to write about what had caused the chosen problem although sometimes there were incorrect references to the impacts which were not creditworthy. Whilst there were some excellent, detailed responses some candidates were unable to develop their ideas and wrote only in simple and generic terms, with a lack of specific detail and place specific information. Such answers were only credited at level 1 (Maximum 3 marks).

Question 3

This was a popular question.

(a) (i) This was generally very well answered and candidates were aware of this key term although there were some incorrect references to "cone".

(ii) The accuracy of this answer varied and many candidates were unable to correctly identify both features from the diagram. The magma chamber was sometimes referred to as just "magma" and the crater was referred to as "mouth" or confused with the main vent.

(iii) This was generally well answered and candidates knew the differences between the two types of volcano. Typical answers included references to gentle slopes, lower, less viscous lava and wider base. Common errors were to refer to the type of plate boundary or the frequency of eruption. Successful candidates made good use of Figure 4 to generate their ideas.

(iv) This was generally well answered and there were some impressive answers seen. Most candidates correctly identified the link between location and plate boundaries although some of the locational evidence provided was a little vague. A common error that was seen was that some candidates explained rather than described the global distribution of volcanoes or included incorrect references to conservative plate boundaries and fault lines.

(b) (i) This question was well answered and many candidates gained credit for the idea of a constructive plate boundary and the plates moving apart or diverging. A significant number of candidates went on to gain full credit for this question, being able to identify clearly the reasons for active volcanoes in Iceland using the diagram as a stimulus.

(ii) This was a very well answered question and some excellent responses were seen. Such responses showed knowledge of the reasons for people living in areas with active volcanoes. There were some good examples of development seen and the question differentiated well, allowing the most able candidates to develop a full range of ideas. Most common references were to farming and tourism although it should be noted that tourism needs a link to either jobs or wealth to gain credit.

(c) This was well answered and the best answered of all the case study questions. A wide range of case studies was used with Haiti (2010); Sichuan (2008) and Japan (2011) being the most popular choices. There was a good level of place specific knowledge shown and most candidates were able to develop the impacts of the earthquake well. Candidates should be reminded to name a specific area and also ensure that any statistics used are accurate. They should also be encouraged to develop their ideas fully to describe the impacts, rather than just produce a list of impacts with supporting statistics.

Question 4

This question was less popular and, on the whole, not as well answered as **Question 3**.

(a)(i) This was very well answered and mostly correct.

(ii) There were mixed responses to this question and it was generally not well answered. Responses could have been improved by making better use of the photograph to describe the characteristics of the wave cut platform.

(iii) This question was answered better and most candidates identified the process of erosion as being significant, especially hydraulic action. There were some very good answers seen, where candidates clearly knew the process of formation well. However, candidates sometimes confused the order of the process and answers would have benefitted from a clearer sequence of points to explain the formation of the feature. In addition, some candidates did not link the collapse of the cliff with undercutting and the subsequent collapse of the overhang.

(iv) This was generally well answered though some candidates did not refer to the alternate bands of hard and soft rock. Most candidates, however, appreciated the link between the type of rock and the rate of erosion and went on to gain high marks.

(b) (i) This was very well answered. Most candidates correctly described the opportunity from the photograph and made good use of the images provided.

(ii) This was generally well answered with many candidates making points relating to tsunamis; erosion, storms and flooding. There were some missed opportunities for development and some confusion with the problems associated with human activities such as tourism.

(c) Overall candidates did not perform as well on this question as some of the other part **(c)** questions, although some very good responses were seen. Candidates should ensure that they refer to an example at an appropriate scale. In some answers, there was a lack of clear development to indicate what the strategy was like or how it worked to reduce either the problem of coastal erosion or the impact of coastal storms. There was little place specific reference to enable the award of full marks. Some candidates did not understand the concept of a hazard as identified in the syllabus and wrote about how tourism could be managed.

Question 5

Although not quite as popular as Question 6, this question was answered by a significant number of candidates.

(a) (i) This was very well answered. A common error was the use of the term 'indicator' rather than 'index'.

(ii) This was well answered with most candidates correctly identifying issues such as healthcare, food supply, water availability and education.

(iii) There were variable responses to this question. Most candidates were able to express the idea that it was a composite index and identify at least one of the indicators on which it is based. Perceptive candidates gained full marks as they also identified ideas such as the index being useful to compare countries or to show changes over time.

(iv) Although this question was generally well answered, there were some mixed responses. Responses should have made a comparison between the two countries and focus on the explanation . Some candidates simply gave a list of statistics to describe the inequalities rather than focus on reasons to explain them.

(b) (i) This was very well answered and good use was made of the diagram.

(ii) This was well answered with some good development of ideas. Responses needed to correctly identified a change in one of the indicators given in Figure 7 and did not simply lift ideas from it. They needed to attempt to explain these ideas in order to answer the question in detail.

(c) This question was well answered with some very well developed ideas. The full range of marks was seen. Candidates were asked to write about the impacts of a transnational company, which they generally did very well, but there were some irrelevant references to locational factors. There was good development of ideas here, although candidates need to ensure accurate place specific information is included to access level 3 and maximise their marks.

Question 6

This was a popular question.

(a) (i) This was generally very well answered and most candidates understood that this meant farming for sale or profit. It may help for candidates to ensure that key term definitions are as precise as possible and compile glossaries to help them during the course to build up their knowledge.

(ii) This was very well answered with most candidates gaining full credit. In responses such as this full use of the map and key to answer questions is crucial – for example, to appreciate that sugar cane was next to the international boundary rather than the coast. A significant minority of candidates confused east and west.

(iii) This was less well answered and few candidates gained full credit. Answers about the cost of transport and perishability of goods were the most common responses seen. There were not many references to the crops being bulky or the idea of the transport infrastructure being poor. Some candidates incorrectly focused on the reasons for the location of where the crops were grown rather than why the factories which process them are close to the crops.

(iv) This was generally well answered with candidates showing an appreciation of the factors influencing the location of industry. Generally the factor was explained well and candidates went on to access the second mark for each factor. Some candidates did not recognise the instruction in the question to give two factors other than raw materials, and some wrote about factors affecting agriculture rather than industry.

(b) (i) This was very well answered on the whole with accurate use of statistics to support answers. Errors were made where candidates referred to changes in production rather than changes in the area of land used. Some candidates included irrelevant references to jute, as the question only required reference to tea and sugar cane.

(ii) This question discriminated well and good candidates tended to explore a wide range of strategies to increase agricultural production. They showed good knowledge of strategies to increase production and had been prepared well for this type of question. A small minority made a reference to making farming more intensive without any elaboration as to how this would be achieved. A small minority referred to strategies such as terracing to increase land rather than increase production using less land.

(c) Generally this was not as well answered as the other case study questions. There were some suitable examples chosen such as the Ganges Valley or Canadian Prairies. Weaker examples tended to be local ones where candidates did not include any detail. Some candidates did not choose an example at an appropriate scale, naming a country rather than an area or individual farm. Whilst most candidates recognised the need to identify a specific land use, a minority made no reference to land use in their answer at all. Some candidates did so but in a simplistic way such as 'crops' or 'livestock'. The better answers gave a named area and appropriate specific land use such as 'rice farming in the Ganges Valley' and developed their ideas, backing them up with accurate place specific information, such as climatic data or soil type. Rarely did a candidate fail to score, although Level 1 answers were fairly common where candidates did not go beyond simple ideas. Some answers incorrectly referred to human factors even though the focus of the questions was on the natural environment.

GEOGRAPHY

Paper 2217/22
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 with previous years, with **Question 5** proving to be the easiest and **Question 3** the most difficult in ***Section A***. The style of the Isle of Man map (**Question 1**) was perhaps unfamiliar but it was clear, and not overly cluttered with information, so candidates handled it well.

In ***Section B***, the questions were of a similar level of difficulty, but **Question 8** was more popular than **Question 7**. Those that had attempted **Question 7** had often omitted sections with candidates finding **Question 7(c)(i)**, **Question 7(d)(iv)** and **Question 7(e)** particularly difficult. In **Question 8**, selecting evidence to support the hypothesis conclusions in **Question 8(c)(ii)** and **Question 8(c)(iv)** was also challenging.

In several parts of the examination candidates appear to have rushed into an answer and not given consideration to all aspects of the question, such as **Question 1(e)**, **Question 1(f)** and **Question 4(c)(iii)**. Candidates should remember to slow down and read the question carefully, paying attention to the command words, particularly since there was no evidence that candidates ran short of time in this paper. This would also help them to avoid omission of graph completions, due to not seeing the question, such as in **Question 2(a)** and **Question 5(a)**.

Comments on specific questions

Section A

Question 1

(a) The 1:50 000 map was of Ramsey, Isle of Man. The symbol for a battlefield could be found in grid square 4394 and candidates were asked for the date of the battle, which was given, underneath the symbol, as 1079. Virtually all candidates had found the square and seen the number, though some had interpreted it to mean 1st or 10th July, ignoring the 9.

(b) Again using four figure grid references, candidates were directed to squares 3598 and 3698, a disused airfield. They were asked to give two uses for the land and many chose the prison and motorsport centre, since these were actually labelled and didn't require interpretation via the key. Other possibilities included museum, main road, buildings or housing and school. Many candidates gained both marks here.

Candidates were then directed to grid square 3694, to find the Wildlife Park, to the north of the road. Here there were different land uses, including a non-coniferous wood, marsh, nature reserve, lakes and a river. Parking was also accepted, since the symbol pointed to the north side of the road, but not milepost. Forestry Commission or National Trust were also allowed, due to the presence of the purple boundary line matching these on the key. Many candidates gained at least two marks.

(c) Fig. 1 showed the location of the Jurby South Road Circuit, which was labelled on the map extract. Candidates were asked to measure the length of the route. Due to the turns in the road candidates were asked for an answer to the nearest kilometre rather than an exact measurement. However, this instruction was sometimes overlooked and candidates gave more precise answers, which was not what was required.

The major turns were labelled P, Q and R and, using these candidates were asked to indicate along which section of the road drivers would follow a bearing of 060°. The correct choice, from the five options, was from Q towards R. Many candidates chose from Q towards P, suggesting that they had taken a guess rather than measuring the bearing.

(d) Candidates were then directed towards Bride, at the north of the map. The triangulation pillar was at 436 010, but 7 was accepted on the 3rd digit and 1 was accepted on the 6th digit. A common error made by candidates was to reverse eastings and northings.

From the triangulation pillar, the direction to Bride was east. Candidates had to look carefully to spot the closest mast and SE or SSE were also acceptable responses. Many candidates scored at least one mark. Those that did not often gave the direction from the feature back to the triangulation pillar, while a few gave bearings.

(e) Fig. 2 was used to locate two grid squares, A and B, and candidates were asked to compare their relief. A was higher, or more mountainous, and contained steeper slopes, rising to 250 m compared to B's 20 m. B's flat land contrasted to A's sloping hillside. Most candidates got a mark but relatively few made three points. Some went into discussion on drainage, which is often paired with relief in a question, but was not relevant for this answer.

(f) Fig. 3 was used to bring candidates' attention to a long stretch of coastline facing north west. They were asked to describe the physical and human features of the coast and the answer space was divided to encourage candidates to consider both aspects, although marks were awarded for valid points, no matter where they were written. This was an area of sand and shingle beach, backed by slopes and crossed by a couple of rivers at their mouth. Many noted the beach material but did not always mention that it was a beach. Sand in the context of dunes was not accepted. When describing the human features it was important to look along the coast, where there was parking, a long distance path, a nature reserve and a picnic site. Again National Trust/Forestry Commission was accepted for the area with purple boundary. Candidates usually mentioned at least some of these, but often were looking further inland and some were clearly taking the whole of the area of Fig. 3, rather than just describing the features of the coast.

Question 2

(a) Fig. 4 showed population growth in South America and candidates were given data in Table 1 to enable them to complete Fig. 4, with the appropriate shading, according to the key, for Bolivia and Uruguay. Candidates who had attempted this had usually done it correctly, but this question had one of the highest omission rates in ***Section A***.

(b) French Guiana was the only country with population growth per thousand of more than 20 and almost all candidates had correctly noted this.

(c) Table 2 gave population data for three South American countries. Candidates were asked to calculate the natural population increase in Chile, which was given by 14.0 – 6.0 = 8 per thousand. Many candidates felt the need to include the 0.4 net migration figure in some way.

Net migration for Peru was – 2.7. There was one mark for explaining that emigration was higher than immigration and a second mark for relating it to "per thousand" of the population. Candidates usually got one of the marks but did not always explain fully for two marks.

Venezuela's net migration of zero indicated that emigration and immigration were approximately equal. Some candidates realised this while others thought that it meant that there was no migration at all.

Question 3

(a) Photograph A showed a river in a shady upland valley. The three features indicated on the corresponding sketch in Fig. 5 were river cliff, tributary and confluence, at the point where the tributary met the main river. Common errors here were to mix tributary and confluence or use distributary instead of one of them. Some also put slip-off slope instead of river cliff. Candidates usually scored some marks but not always three.

(b) **Part (b)** was challenging. Candidates were told that the photograph was taken in the northern hemisphere at midday. With sun on the slopes to the right and shade to the left, the sun would be coming from the left. With the sun due south at midday, the camera would be pointing west. There was no particular pattern to the wrong answers here. Those that had reached the correct answer had done well to interpret the information correctly.

(c) Candidates were then asked to suggest why the land in the photograph was not used for arable farming. Many noted the steep slopes and the shady aspect, along with the potential for flooding on the flatter land by the river. Other ideas included thin, unfertile soils that would be vulnerable to erosion and lack of access, buildings and population. Candidates usually scored some marks but few made four points. Vague statements, such as “the land is sloping”, did not score and some candidates were confused between arable and pastoral farming.

Question 4

(a) Fig. 6 showed the distribution of hot deserts and candidates were asked to describe the distribution. Most commented that they were at the Tropic of Cancer and Tropic of Capricorn and then went into detail about specific continents, though they had to clearly state which ones had hot deserts for a mark from this approach. Many pointed out that the largest area was in Africa and some noted that the location was to the west of the continents. An appropriate named country was also worth a mark. Candidates usually scored some of the marks but did not give enough points for all three marks available.

(b) These areas have low rainfall due to high pressure systems, prevailing winds approaching over land, and thus bringing dry air, and cold offshore currents. This was not well known and many candidates thought that it was due to the high temperatures or the lack of vegetation.

(c) Candidates were required to complete Fig. 7 by plotting a temperature of 40 °C at 17:00. This was straightforward and almost all candidates had a correct answer.

The temperature range for the day shown was 17 °C. Common errors here included noting the maximum and minimum, without calculating the answer, and omitting the units.

Then candidates were asked to describe and explain the temperature variations. There were only two marks available but it was necessary to cover both aspects of the question in order to gain both marks. Noting one of the turning points of the daily cycle was enough for description; so lowest temperature at 05:00 and highest temperature at 14:00. Explanations needed to link temperature to movement of the sun; so “temperatures rose as the sun went higher” or “temperature fell towards sunset”. Most candidates did not score both marks as they did not answer both the describe and explain elements of the question.

Question 5

(a) Fig. 8 showed rainfall data for a weather station in Queensland, Australia. Candidates had to complete Fig. 8 by inserting the bar for June. This needed to show 13 mm overall, but then be shaded up to 7 mm to indicate the highest total of a single day within that month. Candidates who attempted this rarely made mistakes but there was a high omission rate on this question.

(b) April had the lowest rainfall and both March and September received less than half of the monthly total in a single day. Most candidates selected one of these, though a few put May instead of March, demonstrating the need to take care when reading from a chart.

Candidates were told that in January the rain only fell on two days. The bar total showed 20 mm and the highest total for a single day was 19 mm, so the other day of rain would have seen 1 mm. Some candidates had worked this out correctly, while others had got as far as 19 mm but had not deduced the rainfall for the other day, so scored one mark. The most common mistake by candidates was to divide twenty by two and state the average.

(c) Fig. 9 represented a Stevenson screen and candidates were asked to select which of the three indicated positions would be the best location for the thermometer. Almost all candidates correctly selected position B but in **part (ii)** some struggled to explain why one of the other positions would produce inaccurate readings. Either of the other positions could be used for this answer, with A, on top of the screen, being exposed to direct sunlight as well as rain and C being too close to the ground. The idea that A had to be read sideways was also accepted.

Question 6

(a) Fig. 10 showed changes in GDP per person for six countries. Candidates were given data for USA so that they could complete Fig. 10. One mark was awarded for two correct plots and the second mark was for completion of the broken line to join all of the data points. Most candidates had plotted the points correctly but a few had joined them with a solid line, so only gained one mark.

Part (ii) was a simple reading from the graph. Answers between US$18 300 and US$18 900 were accepted for the GDP per person in South Korea in 2005. This time a larger proportion of candidates had not paid enough attention to the differences in the line types used for each country. Many quoted the figure for Greece rather than South Korea, as they assumed that South Korea had the higher value on both sides of the graph and had not noticed the crossover of the lines between 2011 and 2012. Some candidates did not quote any units and did not gain the mark, but $ alone was accepted.

(b) Candidates were given a description of one of the lines on the graph and asked which country was being described. The correct response was Libya and many candidates had realised this. The most common incorrect response was Greece, which had the same high point of 2008.

With the example of Libya to follow from **part (i)**, most candidates found the description for Greece to be very straightforward. Increase to 2008 and then decrease from 2008 to 2014 was all that was needed for two marks, though many went into further detail, subdividing the different stages of decrease. Those who had thought that the description in **part (i)** was for Greece, simply copied out the paragraph, which did in fact gain them the mark for the increase to 2008, which was applicable to both countries.

(c) In the last part of ***Section A***, candidates were asked to compare the changes in GDP for South Korea and UK. The pattern of increase and decrease for these two countries was the same, just with the UK at a higher level than South Korea throughout. Both countries showed an overall increase. Some candidates made general comments, but others went into more detail such as “UK has a sharper increase from 2006 to 2007”. There was a sharper decrease for the UK from 2008 to 2009 and a sharper increase again from 2013 to 2014. South Korea had the more rapid increase from 2009 to 2010 and again from 2012 to 2013. There were some good detailed answers from some candidates, while others lacked precision and clarity of expression.

Section B

Question 7

(a) (i) Most candidates were aware that wind blowing onshore and moving sand against an obstacle were the main reasons for the creation of sand dunes. Many candidates also developed the role played by vegetation, especially marram grass, growing on the sand and stabilising the dune. However a significant minority thought that sand dunes were formed by constructive waves, swash and backwash and longshore drift with wind playing no part in their formation. There appeared to be a significant divide between candidates who understood this and others who made no reference to the role of wind.

(ii) Most candidates stated that the tape measure was used to measure the distance between the poles with these used to mark out that distance. A few thought the poles would be used at the break of slope but the diagram clearly shows that the distance measured was not at the break of slope. Too many thought that the string was used to keep the poles upright and connected, less realised that the string was to be tied at the same height on each pole to give a line parallel to the slope so that the angle could be measured. It is important for candidates to realise that the clinometer does not calculate the angle nor does it measure the gradient of the slope or its steepness; its function is purely to measure or show the angle of slope which most candidates stated. Some candidates confused the function of a clinometer with a chronometer. The use of the tape measure and clinometer were the best two answers out of the four required here.

(b) The pie graph was done well by most candidates. A few plotted the 13 per cent anti-clockwise from the 0 however the order of the key and the slices showed that this should have been added to the 68 per cent point to plot at 81 per cent which was correct. Some plotting was inaccurate ranging from 80 per cent to 83 per cent. Shading was sometimes inaccurate. Most commonly candidates ignored the horizontal lines shown in the key; some were at 45 degrees so could not be credited. Candidates need to be aware that pie graphs should be plotted as shown in the order of the key provided.

(c) (i) Credit was awarded here to candidates who placed or put the quadrat on the ground, used the square to work out the percentage of small squares covered in vegetation and then considered taking an average either at each site or overall. Few candidates covered all three points required though many scored two marks. Despite the candidates being told that the sites had been chosen systematically – at every 10 metres – along the transect, too many insisted on randomly choosing the sites and also throwing the quadrat over their shoulder to pick a site. This was all unnecessary and worth no marks. Some candidates were unsure on the use of the quadrat e.g. work out the vegetation cover, check the amount of vegetation cover, measure the length of the vegetation in the square.

(ii) The plot at 65 per cent was completed successfully by almost all candidates. There were a few at 70 or 60 and some candidates did not attempt this question. A small number plotted with crosses instead of a bar which could not be credited. A few did not attempt the plot.

(iii) Again almost all plotted the 3 species correctly; a few unfortunately read the wrong axis using the vegetation cover axis instead so plotted the 3 species very low down for no credit.

(iv) Almost all candidates made an appropriate judgement by deciding that this Hypothesis was correct. They then backed this decision up with data evidence by comparing the graphs or the tables provided. There were several different and valid ways of comparing these statistics. Most chose to compare the highest percentage of vegetation in both areas and the number of species at comparative sites. A few worked out how many times, for example the species number was above or below 3 in each area. Some calculated average scores of vegetation cover and species. A few chose to only compare several individual sites that worked with the Hypothesis; it was more valid to make an overall judgement from several sites. One error made by some candidates was to add the total number of species and compare that total in each area. One area could have had several species with a low total score; the other could have a high total score with a limited number of species. Overall this question was well done yielding 3 or 4 marks for most candidates.

(d) (i) Most candidates realised that using three different groups at three different times on three different days at three different distances from the sea created so many variables that the results would be unreliable. Candidates needed only to state two of these faults for credit. A number mistakenly referred to the different amounts of people that might be present at different times and days thereby limiting the number that could answer questions but this was a bi-polar survey not a questionnaire. The variation in people was only relevant with regard to the presence of litter and noise in the survey as the other factors did not need people to be present to make a judgement. Other answers such as ‘weather might change’ gained no credit though the fact may be true unless an explanation covered why this might make the results unreliable.

(ii) This was well done by almost all candidates. Only a few calculated a total figure other than 0. Centres should note that, while the technically correct answer would include plus and minus, the international convention that a plus symbol is not needed for a positive number was applied to the benefit of many candidates. Of course the minus sign had to be there for credit though.

(iii) These were five difficult plots yet most candidates did put their crosses in the middle of the correct square and joined them with accuracy for both marks. A few misplotted the points or drew several lines that did not connect which was odd given there were two other completed graphs provided to show the order in which all plots should be connected.

(iv) While the majority of candidates recognised that the Hypothesis was wrong and then went on to quote the two contrasting environmental scores of –7 and +8, which showed that the impact of people decreased away from the dunes, a surprising number agreed with the Hypothesis despite all the evidence suggesting they should have disagreed with it. Clearly they did not understand the significance of minus and plus bi-polar totals. A few stated that the –7 meant it was a negative score and +8 a positive score but did not go on the explain what this meant for the impact of people i.e. higher near the beach and lower further away.

(e) The question required candidates to suggest ways in which the sand dunes and vegetation in Photograph A could be protected from visitors. This sub-section was the least-well answered on **Question 7**. Some negative and extreme ideas were suggested such as banning people and their animals from the area, imposing heavy fines on offenders regarding litter and smoking, banning all barbeques and picnics and employing security guards and police, in some case armed, to patrol the dunes. The majority of candidates did suggest sensible constructive ideas that would still enable visitors to enjoy the area such as creating more reinforced or designated paths, putting up signs, fencing off areas, employing guides or rangers to give walks and monitoring the impacts, creating designated picnic and barbeque areas. Quite a number gave vague ideas such as limiting access but did not go on to explain how this might be achieved. Some suggested creating car parks but Photograph A shows that there are bollards on the beach to prevent access by vehicles to these dunes. The dunes pictured are clearly of such a scale that imposing charges and limiting numbers would be impractical solutions.

Question 8

(a) (i) There were very few candidates who did not gain full marks on this ranking exercise; a small number did rank the areas in the wrong order or just wrote them out as a sentence across the four rows but, overall, this was a successful question.

(ii) Most candidates now seem quite confident with completing divided bar graphs. There were some misplots at 100 and the 202 line was sometimes placed the wrong side of 200 but most were accurate with the correct three shadings based on the provided key. A significant number of candidates did not attempt to plot the graph.

(iii) The key to success with this question was to recognise that it asked for two ‘main differences’ which eliminated minor differences such as the comparative amounts used for washing or preparing food and drinks. The question was about the use of water so statements relating to the fact that there was no dishwasher in the village were not credited. Some candidates gave comparative figures without any comparison; using words such as ‘only’ would be credited to indicate which was higher. Most referred to the overall higher water use in Delhi and then chose one of the four acceptable main differences from the key.

(b) (i) The most common method given was systematic sampling with candidates adding that it gave regular patterns such as every 5th house. Some suggested every 10 metres which was not a realistic sampling distance as it would involve every house so it was not credited; a higher more realistic distance could be credited. Random sampling using a random number generator to choose numbers of houses was a popular second choice. A few candidates suggested the stratified sampling method but could not really describe how it could be applied in the context of sampling 20 houses from each village.

(ii) This question was answered well. Answers suggested that the villagers might not want to fill in the questionnaire or might not know the distances involved in trekking to the water supply or the amount they collected. Language and literacy issues were also stated as was the likelihood that some villagers might not be able to complete the questionnaire. Answers that were not credited included ideas such as the cost of printing questionnaires and the time to distribute them.

(c) (i) Bacharna was plotted quite accurately on most graphs; it was important to realise that the plot needed the village name by it to match the other plots to make sense when references were needed to the village in the later questions. A significant number of candidates did not attempt this question.

(ii) This proved difficult for many candidates although most attempted it. It was the least well-answered sub-section. Once Bacharna was plotted the most obvious positive relationship shown by a best-fit line would go through Anganwa, Lolawas, Modijoshiyan and Bacharna with Kalijal and Soorpora as two clear anomalies or outliers. Quite a few candidates did recognise this pattern and used comparative data of distance and time from a pair of the four villages to demonstrate a positive trend e.g. Anganwa and Bacharna. They also quoted data from one of the anomalies to illustrate why it did not fit the positive trend. A few candidates mistakenly used Kalijal to illustrate a positive trend but, as that was an anomaly, it was not eligible to prove a positive relationship for the Hypothesis and then also be used to illustrate why the Hypothesis was only partly correct.

(iii) As with the Bacharna plot in **(ii)** above. The plotting of Kalijal was done well with the only problem being those candidates who did not add the village name by the plot as shown by the other plots. It was disappointing to see that this plot was not attempted by a significant minority of candidates; the highest ‘no response’ on the paper.

(iv) Many candidates did well here in that they correctly judged that the Hypothesis was false or incorrect and that there was no relationship or correlation between the time spent collecting water and the amount used. It was difficult to understand why, looking at the scatter of points on the graph, candidates could suggest the Hypothesis was partly true or even completely true! The best answers were those that gave named examples of villages where the amount collected was high and the distance travelled was relatively low and vice versa with comparative statistics to illustrate why the Hypothesis was not true. Some candidates carried out a ranking exercise to determine whether there was any positive relationship based on the same ranking for the two variables which was an interesting and valid approach. A few candidates just copied out all the data from the table without any comparative analysis.

(d) (i) This was well done by almost all candidates who correctly chose Bacharna.

(ii) This was also well done by most candidates who correctly chose Lolawas.

(iii) There were some good comparative answers here with suggestions that Soorpora might be more developed and richer as it had taps and pumps while Bacharna might be relatively poor but had a river close by and more rain than Soorpora. Candidates did not get credit for describing the differences in the table which a few did; they were asked to suggest reasons for the differences.

(iv) Many candidates suggested that common problems in these two villages could be that the water was polluted or not clean which might lead to diseases such as cholera. Candidates were also mindful that the villages could have suffered from drought or seasonal rainfall or unreliable rainfall causing wells and rivers to dry up or have a low volume of water. Credit was not given for references to dangerous animals or health problems caused by carrying water from the sources. A number of candidates did not attempt this final sub-section.

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 with previous years. Candidates seemed to cope well with the Isle of Man map, which was clear and relatively uncluttered. There were a number of opportunities for extended writing in **Question 1**, allowing candidates to study the key and select relevant information. Some candidates responded well to this and wrote in detail and those that used a list approach were also able to gain marks. The weakest candidates did tend to omit these sections and they should be encouraged to attempt an answer. Some candidates need a large answer space but it is often possible to gain the marks in a very concise way. It is not necessary to fill the entire space to attempt the question.

As usual there was a balance difficulty throughout, with **Questions 2(a)** and **2(b)**, **Question 3(b)(i)**, **Question 4(a)**, **Question 4(d)(i)**, **Question 5(a)(i)** and **Question 6(b)** proving easy and **Question 4(b)(ii)**, **Question 4(c)** and **Question 6(c)** proving harder in **Section A**. In **Section B**, **Question 8** was more popular than **Question 7** and **Question 8(c)(i)** and **Question 8(d)** were straightforward while **Question 8(e)(ii)** was the most challenging.

With **Question 8(e)(ii)** is was often a case of candidates not reading the question carefully. The question was clear in instructing them not to refer to a questionnaire in their answer, yet this is exactly what many of them did. They had obviously not paid sufficient attention to the word 'not'. Similar issues occurred with **Question 4(c)**, **Question 4(d)(ii)**, and **Question 6(b)(iii)**. Candidates should also be reminded to pay attention to the command words. In **Questions 2(c)(i)** and **2(c)(iii)** many gave reasons rather than evidence.

Comments on specific questions

Section A

Question 1

(a) (i) The 1:50 000 map extract was of Douglas, Isle of Man. Candidates were first directed to look at a hill, on the eastern edge of the map, and give the six figure grid reference of the triangulation pillar on the top. This was 414 781. Commonly errors occurred in the third and/or sixth figure. Candidates should practice measuring across the grid square, to increase their accuracy, and they need to be more aware that zero is not just on the line, but extends across the first tenth of the square.

(a) (ii) Candidates were then asked how the land on the hill was being used. Many used the key to identify the symbol as golf course or links. Some chose to interpret this as tourism or recreation. Others wrote about features around the edge of the hill, such as the road and buildings.

(b) The focal point of the map was the settlement of Douglas and candidates were asked to suggest how this town could obtain a water supply, backing up their answer with map evidence. The most common correct answer was to suggest a river, and naming any of those draining into Douglas Bay was sufficient map evidence. For a second mark, candidates needed to note one of the reservoirs, either by naming West Baldwin Reservoir or by quoting a grid reference for this or one of the other unnamed reservoirs. Many candidates wrote about the sea but this was only valid if desalination was mentioned.

(c) (i) The Isle of Man Steam Railway was located close to the southern coast. Candidates were asked to measure the distance along it from Santon station to Port Soderick station. They were only required to give an answer to the nearest kilometre, which was 4 km, but many had gone to the nearest tenth instead. A few candidates had gone for 3 km, due to measuring directly, rather than along the railway.

(c) (ii) Candidates were then asked to describe the route and features of the railway between these two stations. Many noted embankments, cuttings and the non-coniferous wood and they also commented that the railway crossed certain features, particularly various types of roads. One or two noted the surrounding farmland, as evidenced by the farm buildings, and the route through the river valley. Appropriate compass directions were also valid for up to 2 marks, though few did this.

(d) Most candidates scored at least some of the marks in **part (d)**. They usually focused on type of roads, pointing out that both squares had main roads, while only grid square B had a secondary road. The best responses went on to consider pattern too. Square A had lots of curved roads, while in B they were mainly straight and many noted this. Interlinking roads (B), compared to dead ends (A) was also valid.

(e) (i) **Part (e)** focused on the north west corner of the map, where an area of high land was located. Most candidates noted the hill, and many pointed out the steep slopes and the height of the peak, though not always adding the necessary unit of metres. A few commented on the rounded top, with its more gentle slopes and other valid relief points included mention of ridge or spur, valley and uniform slope.

(e) (ii) There was less to say about drainage, but one mark was reserved for some comment on this. The area exhibited radial drainage, with rivers flowing away in a number of different directions. These rivers had their sources on the hill slope and formed tributaries of each other.

Question 2

(a) Most candidates correctly completed the population pyramid in Fig. 3. The plot was straightforward, due to being beside the axis, where there was clearly a gap that required attention. However, there were still some candidates who omitted this, skipping straight to the answer lines of **part (b)** and not reading the question paper carefully enough.

(b) In **part (b)** candidates had to use the population pyramids to find the correct information. 100 000 males were aged 10–14 in 2010. Most candidates had this answer, while a small number were confused by the number of zeros needed. The 30–34 age group had 40 000 females in 2010. Almost everyone had a correct answer here. A couple of candidates had picked 35–39, the adjacent group.

(c) (i) A variety of aspects of Fig. 3 gave evidence for decreasing birth rate. Candidates could have simply stated that the pyramids narrowed at the base, but most went for a more complicated approach, quoting figures for the younger age groups to show that there were less people in 0–4 than in 5–9. For the 2010 pyramid, less in 5–9 than 10–14 or less in 10–14 than 15–19 were also valid. An alternative approach was to point out that there were less young dependents in 2010 than 2000 and again some did this, with figures for the 0–4 age group. The most common error here was to give reasons for a decreasing birth rate rather than evidence.

(c) (ii) The population of the 35–39 age group had decreased from 2000 to 2010 and having worked this out, candidates then needed to suggest two reasons for this. The marks were awarded for a reason to do with death rate and a reason to do with migration. Most candidates got at least one of these points.

(c) (iii) Candidates then had to look at life expectancy. The correct response, from the choice, was 'more females live longer than males'. The second mark was then for evidence to support this. Many noted that there were more females than males, in several of the older age groups, and again figures were often used to illustrate the point. However, as in **part (c)(i)**, a few candidates gave reasons rather than evidence.

Question 3

(a) The term CBD was generally understood, with a good proportion of the candidates correctly selecting Photograph A. This was also the answer for **part (a)(iii)**, the area with highest employment density. For **part (a)(ii)** candidates generally selected one of the housing areas, but not always the one with the highest density, which was B.

(b) (i) The houses in Photograph B were small, two storey terraces, built in straight rows and all of similar design, with bay windows, chimneys, electric or telephone connections and no gardens, yards or outside space. With plenty of scope here, it was relatively easy for many candidates to score two marks.

(b) (ii) Candidates then had to use evidence from Photograph C to suggest three advantages of living there. The contrast with Photograph B should have been a springboard for ideas, with the big, modern, detached or semi-detached houses having gardens, off-road parking and just more space in general. Most candidates had at least some good ideas.

Question 4

(a) Fig. 4 showed the weather for southern India on a particular day. Candidates were asked to add a line to Fig. 4 to separate the area of rain showers from the area of sunny intervals. Fig. 4 already had lines separating sunny from sunny intervals and many were able to follow this example to complete the task correctly.

(b) (i) The main areas of clear sky, with sunny weather, were in the north-east and the south, with two small areas in the centre of southern India or SE of Hunsur. Most candidates correctly described at least one of the locations. Many also mentioned the sea or beach, perhaps due to a desire for clear sky at such a location, but this was a relatively small proportion of the total area experiencing the sunny weather.

(b) (ii) A sunshine recorder would be used to measure the number of hours of sunny weather at a weather station, but this was not well known.

(c) On Fig. 4 it could be seen that Hunsur was surrounded by symbols for sunny intervals. Candidates were told that the weather was moving from west to east. This would bring the rain showers from the west coast, inland over Hunsur, resulting in thicker, darker cloud, a fall in temperature and rain in the next few hours. Candidates did not always grasp all aspects of the question here. Many gained one mark but fewer described both the current weather and the change expected. Some were confused by the west to east movement of the weather, either describing it from east to west or describing change with distance rather than time.

(d) Fig. 5 gave the average monthly sunshine hours for Bengaluru. Most candidates correctly gave the average sunshine hours for July as 3. However, in **part (ii)**, where they were asked to compare July and August with the rest of the year, many instead compared July with August. They should have stated that these two months were the lowest or lower than the rest of the year. A few that attempted the correct comparison just stated figures without using any comparative word.

Question 5

(a) (i) Using Fig. 6, candidates were asked to give the maximum height of the trees. Almost all candidates gave a correct answer of 50 m, and answers of up to 52 m were accepted to give credit to the candidates who had extended the scale to give greater accuracy.

(a) (ii) In **part (ii)** most of the candidates knew that the height of the tree was connected to the need to reach for sunlight but many thought that the buttress roots were necessary for the absorption of water and/or nutrients. Relatively few wrote about the need to support the tall tree.

(a) (iii) Most candidates gave one difference between the canopy and the under canopy: the difference in height, with the canopy being higher and the under canopy being lower. Some also pointed out the denser, more continuous nature of the canopy with a greater amount of leaves. Another approach was to consider the shape of the trees: wide and spreading in the canopy, with narrower and more pointed in the under canopy.

(a) (iv) The forest floor was shaded by the trees due to the extensive canopy blocking the sunlight. Answers, such as 'the trees block the sun' were not sufficient for the mark.

(b) Candidates were then asked to consider the options available to a subsistence farmer: whether to clear a new area or to use previously cleared land. They were asked for an advantage for each of these. A previously cleared area would have no big trees to remove and so with less preparation it would be quicker to get the crops planted in the ground. A new clearing however would have more fertile soil and better soil structure. There were a number of omissions on this question, but those who attempted it usually gained at least one of the marks.

Question 6

(a) Crude oil is a non-renewable, fossil fuel. Most candidates had circled at least one of the correct answers.

(b) Fig. 7 showed world crude oil reserves and candidates were asked to complete the plot for Iran at 9%. Most did this successfully and then went on to correctly identify Venezuela as the country with the most reserves.

(b) (iii) In **part (iii)** candidates were asked to find another small country, with similar reserves to Kuwait. Again many did this successfully, the answer being UAE. Those that were not reading carefully ignored 'small' and put Russia and some even put Kuwait.

(c) In the last part of **Section A**, candidates were asked to describe the location of the countries shaded on Fig. 7. There were some good answers but many found this to be quite challenging. Phrases such as 'above the equator' were common but not accepted. Instead candidates should have pointed out that all of the countries were north of the equator. They could have given further detail by saying that most were in the Middle East/Asia, with two in Africa, one in North America and one in South America. Alternative to giving the numbers, they could have named the countries in each area, but many just reiterated the names without linking them to any particular location.

Section B

Question 7

(a) Most candidates identified the river features correctly. The most common errors were to identify feature A as the confluence and feature B as the tributary.

(b) Candidates are generally aware of the idea of doing a pilot study. However, answers varied in detail. The best candidates explained how a pilot study gave the opportunity to test fieldwork equipment and to check methodology and avoid possible errors. Some answers also referred to the benefit of working with other members of a group. Weaker candidates gave vague responses about saving time and making sure they would be safe. A misunderstanding of some candidates was that the pilot study would be conducted on the same river as their fieldwork, although the question states a 'local stream'.

(c) The question discriminated well. Some candidates ignored the photograph showing the methods of measurement being used and wrote more general answers, possibly based on their own fieldwork. The best answers described what they could see in the photographs. Detailed answers made reference to stretching the measuring tape across the river to ensure it was tight, and making sure that the ruler was vertical and touched the river bed when measuring depth. Some candidates made errors such as referring to the 'ends' of the river rather than the sides or the banks, and stating that a ruler was used to measure the width.

(d) (i) Most candidates plotted the first point accurately. Some candidates made an error in plotting the second point because they measured its position from the bottom of the section instead of from the top. A small number of candidates did not shade their completed cross section.

(d) (ii) Most candidates identified site 4 as the meander, although some mistakenly identified sites 3 or 5.

(d) (iii) Most candidates agreed or partially agreed with the hypothesis. The use of data often discriminated between the quality of answers. Candidates needed to give accurate data for two sites to show the change downstream. Candidates who concluded that the hypothesis was partially true gained credit by identifying an anomaly and again using paired data from two sites to illustrate why the width measurement at that site was an anomaly.

(e) (i) Many candidates did recognise that judgement of pebble roundness would be subjective. Some also realised that the classes would be hard to distinguish. Weaker answers suggested that the answer would be inaccurate or that the pebbles would not fit into any category.

(e) (ii) This question was challenging. Strong responses explained that selecting pebbles at random may be biased or give an unrepresentative sample because they were selected from the same part of the river cross section. Weaker answers were vague. Typical responses referred to wasting time, that results would be inaccurate, and that it was difficult to pick pebbles up.

(e) (iii) Most candidates completed the divided bar graph correctly. Where candidates failed to score marks, it was usually because they put the segments in the wrong order rather than plotting their size incorrectly.

(e) (iv) Most candidates correctly calculated the statistics.

(e) (v) The question was a challenging one which discriminated well. Weaker candidates became too involved in comparing individual scores rather than comparing total scores from the five sites. Better candidates recognised that the results contained anomalies as the conclusion to the hypothesis was partly true. As in previous questions the use of paired data was important in identifying both the general trend and anomalous results.

(e) (vi) Most candidates showed some understanding of why bedload becomes more rounded downstream. They referred to erosion and better candidates developed this idea by identifying that attrition would be the principal type of erosion involved.

(f) (i) Most candidates made the correct choice of callipers. Clinometer and quadrat were popular distractors. A significant number of candidates erroneously picked two pieces of equipment.

(f) (ii) The question discriminated well. 6 per cent of candidates did not attempt the question. Better answers usually referred to measuring at different sites downstream, measuring the length or long axis of the pebbles, using systematic sampling to select pebbles and measuring several pebbles in order to calculate an average size. Weaker answers did not refer to an average or identify what dimension of the pebble would be measured. These answers focused on repeating measurements and recording results with no specific details.

Question 8

(a) (i) Most candidates identified the importance of only asking tourists to complete the questionnaire in order to get relevant and reliable results.

(a) (ii) Although most candidates correctly named systematic sampling there were many incorrect responses including random, stratified, strategic and sampling.

(a) (iii) The question discriminated well. Candidates who referred to lack of bias and it being a quick method as no preparation was needed scored both marks. Common errors were to suggest that sampling would give a representative group of people, and that people were selected at random.

(b) (i) The plotting of two arrows proved to be quite challenging. 8 per cent of candidates did not attempt the question and some candidates wrote the figures on the map rather than drawing arrows. Most answers were within acceptable tolerance and correctly positioned on the map. An error made by a significant number of candidates was to draw the arrows pointing in the wrong direction.

(b) (ii) Most candidates identified that the bar graph allows numbers or exact figures to be read or compared. Better candidates also referred to the map showing pattern or distance or location as an advantage. Vague answers only suggested that the map was visual.

(b) (iii) Most candidates correctly agreed with the hypothesis and gave appropriate supporting evidence. This was usually done by identifying China and Thailand as the main countries where tourists came from, and comparing these with the highest totals from non-Asian countries. Weaker candidates did not use statistics or added up totals from the bar graphs inaccurately.

(c) (i) The majority of candidates plotted the two bars correctly. Errors were usually made by misinterpreting the scale or shading the bars incorrectly.

(c) (ii) The question discriminated well between candidates. A significant number thought that the hypothesis was true because they did not look at the main pattern which shows that most visitors in all age groups mainly came for two main reasons, to visit heritage sites and to see traditions. Candidates who correctly identified the hypothesis as false used data well to support their reasoning.

(d) (i) Most candidates plotted the segments of the pie graph within tolerance. The most common error was to reverse the order of the segments so that they did not match the order of the other pie graphs.

(d) (ii) Whilst many candidates gained some credit for their answer many only scored one mark by writing statements which by themselves were not comparative and required the examiner to make the comparison. Many candidates scored two marks by using statistics and the word ’only’ to make a valid comparison. Good answers also compared by referring to ‘more’ or ‘a higher percentage’.

(e) (i) This question was generally well answered and there were many answers which scored full marks. Candidates scored better on disadvantages than advantages, usually referring to varying forms of pollution, litter and traffic problems. The main advantages suggested were to do with employment, money brought into the area, and local cultures and traditions.

(e) (ii) The final question was challenging and again identified differences in candidates’ appreciation and understanding of fieldwork investigation. Few candidates gave a clear topic to study. Often, they referred to ‘impact on the natural environment’ rather than a specific impact. These answers then lacked a focus for the methodology. Most answers included ideas for fieldwork but they were often a list of methods such as counting or using a bi-polar analysis or taking photographs without any development in the context of a particular investigation. A significant number of candidates ignored the instruction not to refer to a questionnaire. Suggested topics for investigation included deforestation, air quality, litter and water pollution.