

# GEOGRAPHY

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Paper 0460/12

## **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.
- 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 and answer space provided in the question and answer booklet as a guide to the length of answer required.
- Write as clearly and precisely as possible avoiding vague, general statements.
- Write in full wherever possible, especially in the final two parts of each question, ensuring that ideas are developed with the correct focus.
- Perform basic skills using graphs, photographs and maps of various types, referring to them in an appropriate way to support ideas rather than directly lifting material from them without any interpretation.
- Express themselves as clearly as possible avoiding vague, general statements.
- Have a range of case studies so that appropriate ones can be chosen for the topics tested.
- Ensure that each case study used is at the correct scale e.g. urban area or country. The syllabus identifies the scale required for each case study.
- Avoid writing a long introduction to any question at the expense of answering it in detail.
- Develop points and link ideas wherever possible in case studies and include place detail.
- When using the extra pages at the back of the question and answer booklet indicate that the answer is continued and clearly show the number of the question on the extra page.

## **General comments**

This was the first March examination testing this syllabus. The examination was considered appropriate for the age and ability range of candidates and it differentiated effectively between candidates of all ability levels. The most able and well prepared candidates performed very well across the paper and some excellent Geography was seen. Most candidates were able to make a good attempt at their chosen questions, however weaker candidates found it difficult to interpret questions and write relevant answers.

Most candidates followed the rubric by selecting a question from each section as required.

**Questions 1, 4 and 5** were the most popular questions within each section. There were good answers seen to all questions, including those requiring extended writing, particularly the case studies on a population growth, the management of flooding and problems caused by tourism. High quality answers in these case studies were characterized 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 (**Question 2**) or a country (**Question 1**) or a named feature such as a river (**Question 3**) or volcano (**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 (as in **Question 5** and **Question 6**) choosing a country usually tends to be unacceptable as this is likely to be at too large a scale.

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

### **Comments on specific questions**

#### **Question 1**

- (a) (i) and (ii)** Most answers were correct although in **(i)** a few candidates plotted the bar in the wrong place or shaded it incorrectly.
- (iii)** This was generally well answered as many candidates used comparative terms or percentage figures.
- (iv)** Many candidates misunderstood the question and gave generic reasons for migration, missing the clear reference in the question to ‘percentages of people who migrate to France and the USA from different areas’, information which had been introduced in the previous question. Good answers referred to ideas such as distance, language, culture and political issues. For example Europe and the Middle East/North Africa are nearer to France than the USA.
- (b) (i)** Most candidates identified three different difficulties.
- (ii)** There were many good answers which referred to the availability of large numbers of jobs, higher wages in Qatar, people seeking a better standard of living, better chances of good health care and education in Qatar and push factors such as war or political persecution.
- (c)** There was a variety of African countries named, though India was the most popular choice of case study. Many candidates correctly focussed on the reasons for high birth rates and/or reasons for decreasing or low death rates. Whilst there were many candidates who developed their ideas (level 2) only a minority also made specific references to the named country to gain full marks.

#### **Question 2**

Very few candidates answered this question and high overall marks were not common.

- (a) (i) and (ii)** Most answers were correct.
- (iii)** Many candidates did not refer to specific features shown but described general features of housing and made inappropriate value judgements about their quality.

- (b) (i) Most candidates identified Porto and effectively used comparative statistics from Fig. 4 table as evidence.
- (ii) There were few answers which went beyond the idea that houses are cheap or the people are poor. A small number made reference to the lack of housing stock, pressure on land in cities and the fact that many urban houses are old and in need of renovation. Migration from rural areas is of course a big factor, however the idea needed elaboration in terms of the large numbers of people involved or the fact that this results in demand for housing exceeding supply.
- (iii) A small number of candidates focussed on detailed improvement schemes, making references for example to the building of low cost housing estates, site and services schemes or the installation of electricity, sanitation and water infrastructures. There were relevant descriptions of self-help projects for the improvement of properties, however many answers were too vague or simply too general about improving residents' quality of life (rather than reducing housing problems as required).
- (c) Many candidates focused on urban development in general rather than a specific change in land use. Those who looked in detail at a development, such as the building of a new road, a shopping mall, a factory or a new hospital, inevitably were more successful in developing their ideas about the impacts of the change in land use identified. Little place detail was seen, yet reference to a specific part of the urban area (e.g. road names, names of a suburb) should not have been difficult for those who had studied examples, possibly from within their own urban area. Whilst it is not essential it is worth considering using local settlements in this part of the syllabus when appropriate, as it may be more meaningful to candidates than using distant ones.

### Question 3

- (a) (i) Relatively few candidates correctly defined the term 'drainage basin'.
- (ii) Most candidates scored at least one mark, typically by reference to the land being lower at X. Others referred effectively to the difference in discharge and/or the impact of tributaries having joined before X. Weaker candidates tended to vaguely refer to X being 'near the sea', or attempted to attribute the greater likelihood of flooding to events such as tsunamis and tropical storms which are unlikely to have an impact that far inland.
- (iii) Many candidates referred effectively to a variety of issues, including damage to homes, roads and railways and businesses, water borne diseases and the impacts of loss of farm products.
- (iv) This was generally well answered, various reasons being suggested including fertile soils/high yields, water supply, transport, fishing, local jobs and the emotional attachment to an area where people have lived for a long time. Most candidates suggested several reasons and some pointed out that, as flooding is relatively infrequent, the benefits are likely to outweigh the problems.
- (b) (i) This was a good discriminator. The best answers showed understanding of 'feature' and identified the river cliff and slip-off slope and the curved channel. Weaker candidates referred to erosion and deposition which are processes rather than features.
- (ii) This also differentiated well. Good answers linked velocity with the outer and inner bends and the appropriate process of erosion or deposition. Weaker candidates were too vague and did not identify where or why both fast and slow flow occurred on the meander.
- (c) The Mississippi and Ganges were common case studies. A few candidates wrote entirely about the causes and/or effects of flooding, rather than its management, and many spent time writing lengthy introductions which included irrelevant details. However most did make relevant points ranging from simple references to flood prevention techniques (level 1) to high quality answers with a variety of developed ideas with place detail (level 3). References to levees, dams and afforestation were most common.

#### Question 4

- (a) (i) Most answers were correct.
- (ii) Whilst some candidates correctly identified both features some did not understand the term 'feature' and others mixed up the two features.
- (iii) Many candidates referred effectively to a variety of issues, including damage to homes, roads and railways, loss of jobs, destruction of electricity cables, gas pipes and water pipes, along with reference to fire and disease.
- (iv) This was a good discriminator. Many candidates stated 'stronger buildings' and 'drills/education/planning' but could not elaborate or exemplify their ideas in order to explain how these methods could be used. Many candidates wrongly referred to warning people that an earthquake is going to occur so that evacuation can take place. Whilst general areas at risk from earthquakes can be roughly identified the time and place of earthquakes cannot be predicted sufficiently far in advance to enable evacuation to take place, as in the case of a volcanic eruption or flood.
- (b) (i) Many candidates identified the link between earthquake distribution and plate boundaries and some referred to the linear nature of the distribution. Many candidates referred to the 'Pacific Ring of Fire' and some referred with precision to specific regions where earthquakes have occurred. Weaker candidates however did not 'describe a distribution', either referring to causes of earthquakes or too vaguely to parts of the world or countries.
- (ii) This question differentiated well and perceptive candidates showed accurate and detailed knowledge of the processes occurring at plate boundaries which result in earthquakes. Other candidates realised the significance of plate boundaries but did not show a clear understanding of why earthquakes occur there. Some answers were vague, with references to plate movement, however they did not show any understanding of how plate movement results in the global distribution of earthquakes being uneven.
- (c) A few excellent responses were seen with the Mt St. Helens and Soufriere volcanoes being the most popular choices. Those candidates who were able to make accurate references to the specific plates and develop their ideas correctly accessed the highest marks. Although most candidates named a volcano large numbers of answers contained much irrelevant detail about the effects of volcanic eruptions. Many which did focus on causes were generic in nature (even though an example had been given) and they did not link specific processes to the named example. There was much confusion between the types of plate boundary and the associated plate movement.

#### Question 5

- (a) (i) Most candidates shaded Maharashtra correctly, although a few did not attempt the question.
- (ii) Most candidates scored two marks, and showed good understanding of the two terms.
- (iii) Most candidates scored three marks. The most common error was the failure to identify Tamil Nadu as having the largest percentage of domestic tourists.
- (iv) Whilst many candidates made the initial link between increased revenue and spending on infrastructural improvements the term 'infrastructure' was not understood by many candidates who referred to hotels, shops and other tourist amenities. Those who did understand the term usually referred correctly to the development of roads, airport, water supply and other aspects of the infrastructure which will develop when tourism grows in an area.

- (b)(i)** Those candidates who used descriptive adjectives were able to gain marks by making simple observations such as the 'sandy beach', the 'clear blue sea', the 'tropical vegetation' and the 'clear blue sky'. Whilst relatively few scored maximum marks many did not describe these attractions and so their answers were too vague to credit (e.g. 'the weather', 'the sea'). Some candidates described the attractions in general terms (e.g. 'relaxing' and 'nice scenery') rather than giving specific evidence from the photograph, whilst others simply focussed on activities.
- (ii)** This differentiated well with most, but not all, candidates understanding the term 'human landscape' and referring to hotels, historic or religious buildings, museums, theme parks or by reference to 'culture'. Some candidates incorrectly linked their ideas to the photograph which restricted their answer to the resort shown.
- (c)** Candidates used many different areas for case studies here, almost all of them appropriate except where large countries were named rather than precise areas. The most common examples were Goa and the Great Barrier Reef. A variety of problems for people and environment was suggested, depending on the example chosen. Answers ranged from simple ideas (level 1) through to a variety of developed ideas (level 2). Full mark answers related to both people and the natural environment and included place specific detail, however the lack of the latter capped many answers at level 2.

### Question 6

- (a)(i)** The majority of answers were correct but there were significant numbers of candidates who estimated much too low or at over 20%.
- (ii) and (iii)** Most candidates correctly identified the two sectors of industry and correctly matched the jobs to the correct sector.
- (iv)** This was a good discriminator. Many candidates recognised the high revenue earning capacity of quaternary industry. Whilst perceptive candidates referred to research and development and innovations associated specifically with quaternary industry, weaker candidates were clearly confused between quaternary and tertiary industries.
- (b)(i)** Many candidates correctly identified three jobs associated with the airport. Incorrect examples related to other aspects of the tourist industry, and in some cases agriculture.
- (ii)** This achieved good differentiation. Many candidates referred to the loss of natural vegetation and atmospheric pollution, the differentiation being achieved largely by how well the candidates developed these ideas. Significant numbers of weaker candidates made vague statements (e.g. 'it causes pollution' and 'it affects wildlife') which were not worthy of credit.
- (c)** As in **Question 2(c)**, many candidates focused on economic activity in general rather than a specific activity which takes place at their named location. Those who looked in detail at a specific activity, such as a manufacturing industry, tourism, farming or logging, inevitably were more successful in developing their ideas about how the threats are being managed. Many answers therefore were superficial; furthermore they focussed more on describing the threats rather than their management.

# GEOGRAPHY

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Paper 0460/22

## Key messages

- When giving six-figure grid references and measuring distances on survey maps, greater accuracy would be achieved by using the methods described on page 17 of the syllabus.
- Many candidates do not understand the meaning of the term *relief*.
- In numerical answers, candidates should always quote the correct units, e.g. metres, km<sup>2</sup>, °C.
- When answering photograph questions, candidates should concentrate on what can be seen in the photograph and avoid speculation for which there is little or no evidence.

## General comments

The response to the paper was variable. **Question 4** on coasts was very well answered. There were some good answers to **Questions 2, 3 and 6** but **Question 5** on climate was less well answered by many candidates. Few candidates achieved very high marks on **Question 1** which assesses map work.

## Comments on specific questions

### Question 1

- (a) Most recognised that the grid squares were 1 km<sup>2</sup>.
- (b) Most candidates scored full marks by recognising that the contour interval was 10 m and that the green shading showed land below 100 m.
- (c) Almost all candidates were able to identify feature **A** as a county boundary (examiners also allowed country boundary) and the type of road at **B** as third class. There were few correct answers to the grid reference and it should be noted that the method described on page 17 in the syllabus produces an answer to the third figure of 6 and not 7. Most candidates were able to give the height of the spot height as 25 m but significant numbers of candidates failed to give the units. Candidates found the final part of the question demanding. The gradient of the road between **D** and **E** was gentle and that between **E** and **C** was steep.
- (d) The distance measurement along the N67 road was quite complicated, therefore examiners allowed a fairly wide range of answers between 6800 m and 7300 m. Many answers were well outside this tolerance. The road between Ballyvaghan and Bealaclugga lead north east then south east and most candidates were able to identify this.
- (e) The answers to the questions on the cross section were generally very good. The skill of cross section completion was introduced for the 2016 examination and candidates have mastered this very well.
- (f) When giving reasons for the growth of the settlement at Ballyvaghan, candidates frequently noted the gentle slopes, land below 100 m, services (such as police, post, school, chapel, church, parking), and the lake for water supply. Examiners accepted tourism as a reason if it was backed up with evidence such coastal or mountain scenery. The concept of the road junction or route centre was not generally appreciated and few referred to the quay or port.

### Question 2

- (a) Most candidates described the distribution of population shown on Fig. 4 very well. Examiners allowed points to be described by compass direction or by two named states. Points could be described in numbers or words, therefore phrases such as *high density in the north east*, *high density in Bihar and West Bengal*, and *over 1000/km<sup>2</sup> in Bihar and West Bengal* all scored a mark as alternative expressions of the same idea. Candidates who answered in figures generally remembered to include *per km<sup>2</sup>* in their answers.
- (b) Most candidates were able to identify Arunachal Pradesh as the state with the greatest percentage increase in population and Nagaland as the state with a decrease in population.
- (c) This part of the question asked candidates to compare population change in a group of states with the population change for the whole of India and was a more demanding question. Many candidates were able to note that the states in the south generally had a lower increase than the rest of India but few were able to recognise the variable pattern in the north east states.

### Question 3

- (a) When describing how relief influenced the site of the settlement in Photograph A, many candidates did not confine themselves to what could be seen in the photograph or to relief. Examiners accepted points such as the settlement was in the lower land, in a valley, on gentle or flat land which was easier to build on, it avoided the high steep land and the mountains might provide shelter. There was much irrelevant comment about land use.
- (b) Answers showed similar weaknesses to those in **part (a)** in that candidates did not confine themselves to land use and went beyond what could be seen in the photograph and speculated on other possible uses for the land. Examiners accepted points such as agriculture or crops, the field or plots visible in the photograph, the scrub on the hills and the trees in the town.
- (c) For the water supply, most candidates identified the lake or pond.

### Question 4

- (a) Many candidates correctly identified the land forms as: **A** headland, **B** stack, **C** spit and **D** bay.
- (b) Most candidates worked out that the student drew the field sketch from point **Z**.
- (c) Although a few candidates failed to score any marks, the majority were familiar with the growth conditions needed by coral. Examiners frequently gave credit for points such as: warm water (a range of 18 – 30°C was accepted), shallow water, no sediment, average salinity of sea water, well oxygenated water, light penetration and lack of pollution.

### Question 5

- (a) Responses on the graph completion part of this question were variable. Occasionally credit was not gained as candidates failed to realise that one small square on the graph equalled 2°C.
- (b) Most candidates knew the meaning of the term *annual range of temperature* and extracted the necessary information from Fig. 7, i.e. 36°C and 13°C. Some failed to complete the calculation to give 23°C and others failed to add the units.
- (c) The response to this question was very variable. Many candidates knew that places in the southern hemisphere would be hotter (and have their summer) in December and January and correctly identified Fig. 8.
- (d) Candidates found this difficult. Examiners accepted a simple statement that summers in Fig. 7 were hotter than summers in Fig. 8, or reference to the correct figures, i.e. 36°C in Fig. 7 and 26°C in Fig. 8. Some candidates referred wrongly to the winter figure of 16°C in Fig. 8.

- (e) Most candidates were unaware of the reasons that deserts have dry climates. Examiners would have accepted a number of explanations such as high pressure, descending air, stable air, offshore winds, cold ocean currents, rain shadow, and large distance from sea and evaporation before rain reaches ground. Of these, there were only occasionally references to rain shadow, high pressure and distance from the sea. Lack of water bodies and vegetation were often the incorrect reasons given.

**Question 6**

- (a) The vast majority of candidates correctly identified solar and wind power.
- (b) This was well answered and full credit was often awarded. Frequently quoted reasons included the following. For: provides electricity for local people, cheap power, jobs or income, development of infrastructure e.g. roads, and no pollution. Against: visual pollution, covers a large area, other land use possible, e.g. agriculture or housing, may affect wildlife, and noise of turbines. The best answers were those where the candidates had looked for evidence in the photographs.

# GEOGRAPHY

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Paper 0460/42  
Alternative to Coursework

## Key messages

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

- When answering Hypotheses questions that ask whether you agree or not, always give your opinion at the start of your answer before any supporting evidence. This will usually be *Yes*, *No*, or *Partially/To some extent*. Do not just copy out the Hypothesis if you agree with it. It is important to make a decision and state it as well as provide the evidence for your choice. Be clear in your decision – expressions such as *'might be true'*, *'could be false'* are too vague.
- If you are provided with a decision about a Hypothesis, e.g. false in **Question 2(c)(iii)** – do not disagree with it and justify your view. You need to support the decision made with evidence.
- When giving figures in and answer always give the units if they are not stated for you. It is also important that your numbers are clear, e.g. a 4 can look like a 9; a 7 can look like a 1; sometimes a 2 looks like a 5.
- When shading graphs, use the same style as that provided in the question and make sure your pencil gives a good dark image. Check you understand the scales used and the importance of any plots already provided, e.g. on **Question 1(c)(ii)**.
- When completing pie charts or divided bar graphs, complete these in the order of the data given and in the order of the key, e.g. **Question 1 (d)(i)**. Make sure your shading matches the key, e.g. if diagonal shading slopes to the right, do not draw yours sloping to the left.
- When you think you have finished, go back and check that all graphs have been completed; many candidates lose relatively easy marks by missing out graphs.
- Read questions carefully and identify the command word, e.g. *Describe...*, *Explain...*. A question that asks *'Why?'* requires a reason to be given not a description. If a question asked for data, e.g. **Question 2(b)(iv)** then you must use the statistics from resources whereas evidence could be a qualitative answer.
- Check you are using the resources that a question refers you to, e.g. **Question 2(b)** Figs. 6A and 7A.
- Take into account the marks awarded. Examiners do not expect you to be writing outside the lines provided so do not write a paragraph when only two lines are given – this wastes time.
- Make sure you understand how the fieldwork is being carried out, e.g. in **Question 2(a)(iii)** many candidates did not gain marks because they wrote about how a maximum-minimum thermometer works instead of how they would use it to measure temperature.
- It is important that, when candidates write the remainder of their answer elsewhere, that they signal it by writing something like – *'continued on page 16'* to ensure it is seen. It needs also to be noted that too many candidates gave the wrong sub-section number by their extra work which made it more difficult to match to their earlier answer and credit correctly.

## **General comments**

Most candidates found this examination enabled them to demonstrate what they knew, understood and could do. It appeared to be a positive experience for most candidates. Weaker candidates performed well on the practical questions such as drawing graphs or diagrams, making calculations and making choices from tables, and stronger candidates scoring well on the more challenging sections requiring judgment and decision-making on Hypothesis choices with evidence and other written answers. The paper was judged as fair and appropriate with no time issues for over 250 candidates entered for it.

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

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

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

## **Comments on specific questions**

### **Question 1**

- (a) A large majority chose the correct three options from the six provided although there were a few that chose Option 1 and Option 3 – these involved sampling every tenth vehicle or proving a drivers' questionnaire, neither of which are appropriate for a traffic count.
- (b)(i) Again most correctly chose 'tally'; a few incorrectly chose 'estimate' or 'observe'.
- (ii) It is not usual to expect students to stand and count traffic for as long as an hour so the emphasis of the question was to see what disadvantages candidates thought there would be in taking a traffic count for such a length of time, e.g. tiredness, boredom, impact of sunny weather, dehydration, impacts of pollution on health. While the best candidates did give these answers, far too many went to the other extreme suggesting that one hour was too short to get a representative count and that it should be done throughout the whole day. A few suggested practical issues with counting methodology such as not being able to count some vehicles if they were hiding others, which was considered inappropriate. A small number of candidates missed this out which was surprising as traffic counts involve common and popular fieldwork techniques which should be covered in or out of the classroom.
- (c)(i) Nearly all answers referred correctly to Mayo Road; a few separated out the traffic going in from that going out which was ignored for marking purposes. A small number suggested two roads in which case the first named road was taken as the answer for marking.
- (ii) The vast majority of candidates plotted the points correctly and used the solid line to join them from the key. Some candidates misread the vertical scale and, for example, plotted 356 at 376.

- (iii) Just under half of the candidates scored well on this Hypothesis question; most correctly agreed with the Hypothesis but did not always follow it up with sound evidence. Most who agreed correctly recognised that the morning and evening times were busier on all four roads than at midday which gained credit. They did not, however, recognise that roads going into the centre were busier in the morning than roads coming out in the evening. Usually they then chose just one named road and gave statistics from the three different times to support this; some just gave two statistics which was not credited as it only gave part evidence. Some of the statistics chosen were a mix of traffic going in or out rather than one or the other so providing a confused answer.
- (d) (i) This was done well by the vast majority though 4% of candidates did not attempt the graph completion despite the command phrase '*complete the divided bar*' being emboldened. Given there were three other completed graphs, it should have been clear that the empty one needed completion. Those that did realise this plotted the two figures, 815 and 1081, in line with the key. A few candidates plotted from the right or overlaid their shading on other shading thereby providing an incomplete, confused graph which was not completely shaded.
- (ii) Almost every candidate correctly chose the third option.
- (iii) This was done quite well with candidates correctly identifying that there were more cars and bikes on Victoria Road and more vans and lorries on Lohar Road. Poor answers included ones where candidates just copied out all the statistics in the table and in every category without any comparison; some only compared one category instead of four and a few chose the wrong road to compare with Lohar Road. With the command word '*compare*', candidates should use comparative words like '*only*', '*more/less than*' rather than just list different figures.
- (e) (i) While this was done well by most candidates with a correct calculation of 108 at the bottom right of the page, a number of candidates (3%) did not attempt this question. It is important that candidates read each page carefully and carry out the work required on all sub-sections, especially graphs and tables, where other information on the page may make it less clear that there is a task for the candidates to attempt.
- (ii) Most candidates used the scale to plot the two bars correctly; some tolerance was allowed on the 119 plot and most drew a bar within that. Although the question clearly required bars to be plotted using the scale provided, a high number of candidates (7%) did not attempt this sub-section which was disappointing.
- (iii) Most candidates chose the correct conclusion however few scored marks for supporting evidence. Many repeated their earlier answers regarding traffic being busy in the mornings and evenings and less so at midday. What was required was recognition of the index level, the times it was exceeded and whether this was going in or out of the town centre. Some candidates did get credit for providing two contrasting statistics, e.g. Lohar Road 389 morning and 391 evening.
- (f) Better candidates did well on this by including ideas such as carrying out more counts at different times of the day, repeating the survey on a non-working day, using clickers instead of tallies, having groups of students checking each other's results and calculating an average over several days. A large number of weaker candidates just suggested repeating the survey, using tallies (which had already been done) or doing it for longer than an hour.
- (g) This was done quite well by most candidates with a variety of suggestions such as widening roads, developing some improvement of the present road system, e.g. flyovers, ring roads, and other ideas such as car-pooling, tolls and ways to improve public transport. Weaker answers just stated that people should walk or bike more, build more roads or encourage people to use public transport. While these are worthy ideas, they do not ensure that people will take any notice; the question required practical improvements that could reduce traffic congestion.

## Question 2

- (a) (i) A large number of candidates knew atmospheric pressure was measured using a barometer. A small number incorrectly thought it was measured with either a thermometer or anemometer.
- (ii) The vast majority of candidates knew that pressure was measured in millibars; a few put degrees or knots – answers which were probably influenced by choosing an incorrect instrument in the previous question.
- (iii) The performance in this question was not strong overall. The question gave a photograph of a maximum-minimum thermometer and asked how it would be used to measure temperature. Expected answers included reading the bottom of the indices, taking readings daily, reading at eye level and resetting the indices. Many candidates described how it works referring to which side you measured which temperature and various references to the role of mercury or alcohol. Some mentioned that it should be kept in a Stevenson Screen and other aspects of location rather than use. Others read the readings from the photograph; not always correctly. It is important that candidates answer the question that has been asked rather than a different question that they know the answer to.
- (iv) Reasons for preferring to use a digital thermometer are straightforward and most candidates referred to it being easy to read or use, and it being quicker and more accurate than the traditional instrument. It was important that, in this type of question, candidates gave the benefits of the digital instrument not the opposite disadvantages of the traditional one.
- (b) (i) Many responses gave the highest temperature in Singapore, i.e. 36°C, instead of the highest range which was calculated from  $35^{\circ}\text{C} - 25^{\circ} = 10^{\circ}\text{C}$ . Some gave the correct two temperatures for the calculation but did not give the final answer.
- (ii) Most candidates correctly gave 22nd April as the date with the smallest temperature range in Albany. Those that did not understand temperature range chose the 11th as it was the date with the lowest temperature in Albany.
- (iii) This was well done by almost all candidates who recognised that while Singapore's pressure stayed fairly constant, Albany's fluctuated throughout the period. Weak answers did not pick out general trends but gave long descriptions of all the changes through the 14 days for no marks.
- (iv) This question proved difficult for most candidates who chose to agree with the Hypothesis which had to apply to both Singapore and Albany for it to be correct. There were plenty of examples on the graphs to demonstrate that, while Singapore's pressure remained constant, its temperature changed or the latter stayed the same as pressure changed. In Albany the same air pressure showed different maximum temperatures on occasions. There was enough evidence to disagree with the Hypothesis which the more perceptive candidates did, though few gave the appropriate supporting data tending to make descriptive statements rather than use figures from the graphs.
- (c) (i) This was a straightforward question which was well-answered by most candidates with factors such as being clear of buildings, trees and animals occurring frequently as well as location on grass and flat land. A small number focussed their answers more on inappropriate aspects such as siting it where there would be rainfall, rather than choosing a suitable site for it.
- (ii) Almost all candidates correctly gave a figure of 28 mm for the total rainfall falling on Albany on 20th April.
- (iii) While many candidates agreed that the statement was false because, while pressure remained constant the rainfall fluctuated, too few backed that up with evidence or data from the resources.
- (iv) Many candidates recognised that there was a relationship between air pressure and changes in daily rainfall at Albany and went on to identify the relationship as negative or inverse with a full description of what this meant. A few candidates did identify a negative relationship but then stated the Hypothesis was incorrect which could only have been the case if the Hypothesis referred to a positive relationship. It is important for candidates to realise that relationships can be positive or negative; the latter does not mean no relationship. Few candidates used accurate supporting data.

- (d)(i)** This was done well with most candidates plotting the line on the SSE direction and using the scale to draw a line at 12 km/hour with some tolerance allowed. Errors were mostly on the length of the line rather than the direction. 5% of candidates did not attempt this straightforward plotting exercise.
- (ii)** This question required an explanation of how two instruments stated in the syllabus should be used to measure wind speed and wind direction. Answers tended to lack accurate detail, e.g. saying the anemometer spins instead of the cups or saying the cups move instead of spin, turn or revolve. Other vague answers referred to the wind vane rotating rather than the arrow being moved by the wind. Many candidates did not clarify that the arrow pointed to where the wind was blowing from; just stating that it points to or in the wind direction is not accurate enough.