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## FOREWORD

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This booklet contains reports written by Examiners on the work of candidates in certain papers. **Its contents are primarily for the information of the subject teachers concerned.**

# GEOGRAPHY

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## GCE Ordinary Level

<p>Paper 2217/01</p>
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<p>Paper 1</p>
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### General comments

This paper allowed widespread differentiation therefore, when considering the full cohort of candidates, almost the entire mark range was achieved. The most able and well prepared candidates tackled all their chosen questions with confidence, producing high quality answers in all sections. There were excellent responses, in which candidates demonstrated a thorough grasp of geographical principles, along with a detailed knowledge of case studies and examples to support their arguments. Such candidates were able to make good use of the resources, an improvement on previous years, although there was inevitably some degree of misinterpretation. At the other end of the spectrum, weaker candidates failed to meet the requirements of all but the most simple questions. Frequently they produced lists of undeveloped ideas, much irrelevance, and answers demonstrating little or no understanding or contextualisation to specific circumstances. A strong characteristic of weaker candidates is vagueness in many of their answers, especially where case study knowledge is required.

Examiners were impressed by the level of written communication of candidates from many Centres.

Some candidates produced irrelevant answers to questions as a result of misunderstanding the command words and requirements. However as the standard of English was usually at least satisfactory, mistakes in interpreting the questions were mostly due to failure to read them carefully enough rather than to a lack of language skills. Thus some candidates lost marks by misreading or misinterpreting sections and consequently writing irrelevant answers.

There were few rubric offences and time management was not a problem for the vast majority of candidates, although a few candidates had spent too much time on their first two questions and the third question was either unfinished or written so rapidly as to be inadequate in every respect.

**Questions 1, 4, and 5** were the most popular choices. It is inevitable that, given choice, some topics in the syllabus will be more appealing to candidates than others. Nearly all candidates answered their three questions in numerical order. There was little evidence of any attempt to evaluate questions before starting to answer them or rough plans for answers. Candidates are advised to read through the whole paper before they begin their answers in order to pick out their best-known topics to start with. Also they should plan their answer in order to check relevance to the question before it is too late.

The following advice should be given to candidates:

- Read the entire question carefully before beginning an answer. Decide which section requires which information, thereby avoiding repetition of answer and the time that is wasted. Answer questions in order, starting with the one which you are most confident with, and finishing with the one which you are least confident with, rather than automatically answering them in numerical order.
- Take careful note of the command words so that answers are always relevant to the question.
- Use the mark allocation as a guide to the amount of detail or number of responses required. Be aware of timing: do not devote too much time to the first chosen question, or include too much detail in sections which are only worth a small number of marks.
- Aim to develop each idea so that answers do not emerge as a list of simple points.
- Use resources such as maps, graphs and photographs carefully in order to make use of the detail they include, and ensure that those questions which involve answering on an insert are not answered by using written text.

Centres should take careful note of the following points:

- The front page should show full details of the candidates along with an indication of the three questions answered.
- There should be a margin on the left and the right side of each page. Apart from the numbers of the questions and sub-sections candidates should not write in these margins.
- Every part of every question chosen should be clearly indicated in the left hand margin.
- At least one line should be left between each part of a question, and at least three lines between each question.
- All sheets should be loosely tied together, with the sheets assembled in the correct order. Sheets should not be submitted loose, nor should they be tied or stapled together so tightly that they are impossible to turn over in order to read all parts.
- All sheets should be numbered by the candidate and placed in the correct order.
- Where an instruction is given to complete an answer by labelling or drawing on a resource on the insert sheet, a written answer is not an appropriate alternative. This insert must be submitted, attached to the work of the candidates.

### **Comments on specific questions**

#### **Section A**

#### **Question 1**

This was a very popular question. Whilst some candidates produced excellent answers in all parts, it was also a question which attracted large numbers of weak candidates.

- (a) Most candidates were aware of the significance of birth and death rates in defining and calculating natural increase, though there were few who also mentioned that it was important to exclude migration.

Whilst many did answer correctly in terms of birth and death rates, a substantial number suggested that the birth rate should be subtracted from the death rate whilst others thought one should be divided by the other.

- (b)(i) It was obvious in many cases that words like 'rate' and 'proportions' were not always understood, often they were inferred rather than specifically commented on. Most candidates were able to identify that an increase in the total population had taken place, though they made no reference to the rate of growth. Few were able to describe changing proportions of population in the world regions. Many wrote about changing numbers of people in the different regions, whilst others gave a static description with no reference to change at all. Few picked up on the decreasing proportion in Europe and some completely misread the graph and assumed that North America had the largest population.
- (ii) A well answered section with well rehearsed responses on the whole and candidates being able to identify many valid reasons why there are regions with low and high birth rates, often developing and exemplifying their answers. Whilst most candidates were confident in writing their answers in this section there were some who gave very brief, superficial lists, others who confused the situation in 'developed' and 'developing' countries, some who interpreted this as a population density question and others who seemed to think that a high death rate inevitably leads to an increase in population.
- (c)(i) Dependency ratio was often clearly defined, with many candidates showing sound knowledge and understanding, though some could have made a clearer attempt at distinguishing the economically active and dependent populations, rather than vaguely referring to the young and the old. A few weaker candidates wrongly attempted to answer the question by reference to birth and death rates.
- (ii) Generally this was well answered and there were some excellent accounts of the problems likely to be faced by countries with an ageing population. A minority misinterpreted the graph, suggesting that Japan's problem would be overpopulation and widespread unemployment, whilst others did not score the full four marks as they focused entirely on one issue, for example pensions or the provision of health care for the elderly, rather than looking at a wider range of potential impacts.

**Question 2**

This was not a popular question; it posed problems to many candidates from the start. Overall, the answers in almost all sections lacked detail and precision. Whilst excellent answers were seen, candidates who scored highly on their other choice of questions often failed to do so on this one.

- (a)(i) Many candidates found it difficult to explain the meaning of 'settlement hierarchy', it was disappointing to see the many wild guesses from candidates when this concept is so central to a study of settlements and service provision.
- (ii) The concept of the hierarchy was not well understood and many answers focused on the relationship between the number of services and population size.
- (iii) Interpretation of both the graph and question here was generally poor. Many candidates erroneously assumed a spatial dimension to the graph, saying for example that the tourist town would be close to the city for access to services or well away from the city for peace and quiet.
- (iv) Again a generally disappointing response to a question which should have posed few problems for candidates who were well prepared. Many did not restrict their answers to services but wrote about village life in general (especially in developing countries), often referring in detail to farming. Whilst some candidates were able to score some marks by giving examples of service provision in villages and cities, few scored full marks by making reference to convenience/comparison goods, order of services, threshold population, range and sphere of influence.
- (v) Few candidates wrote about the role of the capital or primate city in the hierarchy and the special sort of functions which would be found there. Most simply wrote about the characteristics of any large town or city, and compared it with a village.
- (b) Modest marks were scored here by some candidates. The cost of land was the one popular answer which scored well, though other concepts such as accessibility and the focus of transport routes were rarely mentioned. Most simply wrote long irrelevant descriptions of the land use rather than attempting to explain it.
- (c) This was the best section of this question for most candidates, with many scoring at least half marks and some the full seven which were available. There were a few specific case studies used, including well chosen ones such as London and New York, though the best case studies seen tended to be local ones.

Sadly many candidates did not refer to actual examples, a strategy which should be encouraged to enhance performance. They seemed familiar, perhaps through personal experience, with the problems caused by traffic in urban areas, and many wrote in generic terms about a wide variety of issues ranging from congestion and pressure on space to environmental issues. There is still confusion between different atmospheric problems (e.g. acid rain, global warming and ozone depletion) and candidates must be aware that, in order to score marks for referring to pollution they need to state its type or origin (e.g. 'atmospheric pollution' or 'pollution from car exhausts').

**Section B****Question 3**

Whilst this was not one of the most popular questions, though it was popular within some Centres and those candidates who chose it often scored high marks.

- (a)(i) The photograph was generally well labelled with most candidates scoring 2 or 3 marks though sometimes the backwash was located beyond all the crests and the crest on the beach area in the foreground. Occasionally candidates attempted the question without using the photograph, despite that being virtually impossible, and sometimes it was not included along with the answer sheets.
- (ii) The differences between constructive and destructive waves were very well described by many candidates.
- (b)(i) This was not always well answered, with many vague references to the wind, the sea and the load. However by their use of terms such as 'fetch' and 'offshore profile' other candidates were able to demonstrate a high level of knowledge and understanding.
- (ii) Although many candidates knew the basic difference between the processes, some fell short of the full four marks as they did not develop their answers or include specific details of how the processes operate. Some confused corrasion with corrosion or attrition and a small minority answered in relation to how these processes operate in rivers.

- (iii) Most candidates scored 3 or 4 if they had a good understanding of the process but a significant number either omitted this section or gave irrelevant answers relating to headlands and bays. Some candidates did not include a diagram and, in other cases, where diagrams were included, the labels were often absent or poor. Some complete Centres could not produce diagrams of longshore drift, suggesting that this important process had been overlooked, whilst others in contrast almost universally scored maximum marks.
- (c)(i) This question was generally well answered though some included irrelevant details about the formation of arches and stacks or details of longshore drift.
- (ii) There was some confusion here as some candidates thought the groynes were there to stop erosion rather than to prevent longshore drift, and some candidates were unable to name or adequately describe them. However overall answers showed a good understanding of how they reduced longshore drift, sometimes by the inclusion of labelled diagrams, which is to be encouraged.

#### Question 4

This was a popular and generally well answered question, which differentiated well. In all sections candidates were able to score full marks, though weaker candidates tended to produce brief and/or simplistic answers.

- (a)(i) There were some superb answers to this question with detailed accurate annotation, though some candidates wasted time by then writing a paragraph of text duplicating their responses which was unnecessary, sometimes including climatic details which, in this section were irrelevant. The weakest answers tended to be superficial with simplistic labels such as trees, creepers and undergrowth or those with labels which were misplaced or virtually impossible to read because they were written in pencil on shiny paper. The extract below from the mark scheme lists the type of details required:

*emergents*

*canopy/upper storey – 20 to 25m*

*second storey/under storey 10 to 15m*

*crowns interlock*

*branches found near tops of trees*

*trunks tall and straight*

*lianas/vines*

*epiphytes - anchor on branches and trunks*

*a variety of tree species*

*very little undergrowth*

*buttress roots*

*ferns, herbs, low growing plants*

*deciduous trees*

*examples – meranti, rosewood, mahogany etc.*

- (ii) In order to be successful here it was necessary to link adaptations to climatic characteristics. Most commonly candidates were able to link features such as the height of the trees (or existence of lianas) to competition for available sunlight, though to earn full marks they needed to consider other issues. Explanations were often included in (i) and not given in (ii). Some offered reasons for the climate and not for the rainforest vegetation. Many candidates wrongly thought the role of the canopy was to protect lower layers from the sun, and many wrongly referred to the need for roots to search for limited water supplies. Buttress roots were often mentioned, but with no attempt to link to climatic characteristics.
- (b) Candidates experienced relatively few problems with all three sections, though Gabon was occasionally confused with Congo and the Central African Republic with Equatorial Guinea. The last part was not always read accurately, which resulted in the 'south' being offered as a response.

- (c)(i)** Generally a well answered question though suggestions for ways in which the rainforest could be conserved were sometimes extreme and impractical or so brief and simplistic as to be of little value. To suggest making the whole of the rainforest a reserve or encircling the entire rainforest with barbed wire and guards armed with Kalashnikov rifles shows little appreciation of the issues involved!

Similarly there was generally a good appreciation of why conservation would be difficult with detailed and logical explanations which often related to issues of size, cost and the need for economic development as well as conservation.

- (ii)** Many candidates responded well here, even weaker candidates showing some appreciation of the impacts of deforestation. In A, global warming and rainfall variations were typically given. In B answers were generally good with a clear understanding of the inter-relationships between rainfall, vegetation, roots, soil, and river characteristics. In C few went beyond saying that some plant species would become extinct, though some extended their answers by referring to the impact on ecosystems and the consequent reduction of biodiversity. Candidates sometimes included details of impacts on fauna as well as flora which were not relevant to the question asked.

### Section C

#### Question 5

Another popular and generally well answered question, which differentiated well. In all sections candidates were able to score full marks, and section **(c)** enabled well prepared candidates to use detailed case study knowledge, though inevitably weaker candidates produced brief general responses, with too much reliance on the stimulus material.

- (a)(i)** Most candidates interpreted the graph well and were able to score marks for suggesting appropriate reasons why the climate of Montego Bay attracts visitors from the UK, though sometimes they failed to fully develop their responses to gain all the available marks. Occasionally candidates wrote about attractions other than the climate despite the wording of the question, emphasising that only data from Fig. 9 should be used.
- (ii)** Reference to rainfall was the most common answer, but there was often repetition of the factors on the graph or reference to features which are not climatic features.
- (b)** This section differentiated well. A number of extremely detailed and wide ranging responses were seen which scored full marks. In contrast weak candidates went for advantages of specific resorts, for example climate and commonly Montego Bay, rather than providing a global overview. Others wrote about why some countries are introducing tourism as a way of making money to accelerate their development, rather than answering the question as set.
- (c)(i)** This was well answered as many candidates made effective use of the source material in Fig. 10 to score high marks. Relatively few candidates used any information from their own studies and answers were almost always confined to details from Fig. 10. However those who did refer to their own case studies produced very impressive responses. Weaker candidates sometimes confused the effects on the natural environment and the effects on the lives of local people or copied out extracts from the resources in such a way as it was apparent that there was little or no understanding of their content.
- (ii)** Many candidates chose their local area or their own country, which is to be encouraged, and better answers included detailed comments about the benefits to local people. To earn full marks they needed to go beyond reference to the availability of jobs and the consequent impact on standard of living. Many did so, referring in detail to improvements in the infrastructure and local amenities which potentially benefit local people as well as tourists. However, others wrote mainly about the local attractions for tourists, which was irrelevant, and there were few references to benefits apart from job availability.

**Question 6**

Overall this was not a popular question, though in certain Centres it was answered by many candidates with varying degrees of success.

- (a)(i) Most candidates scored high marks on this section, interpreting the information in Fig. 11 correctly. Indeed some went well beyond the requirements, including some very impressive technical details and terminology.
- (ii) With some notable very impressive exceptions, this section was poorly answered with very little focus on the physical factors, even though climate was specified in the question. Many gave non-physical factors which were irrelevant.
- (iii) Again whilst there were many weak or irrelevant answers there were a number of very perceptive ones too. Objections to the siting of these power stations in rural areas often included comments about the expense, the expense of transmission and the lack of local demand rather than more relevant issues such as the impacts of drowning valleys on local settlements and agricultural land. Large numbers of candidates focused on the potential, though unlikely, threat of the dam bursting rather than the disruption to communities caused by the building of it in the first place.
- (b)(i) Most candidates were able to gain one mark by referring to cost, but failed to think of any other issues, such as availability, technology or the impact of traditional attitudes and values.
- (ii) This differentiated well. Candidates who took notice of the mark allocation of six, writing in detail and considering the impact on both people and the environment, scored well by drawing on the resource and their own knowledge and understanding to achieve both breadth and depth in their answers.

Others gave very brief and simplistic responses, referring to little beyond the impact of smoke in peoples' homes or copying out isolated phrases from Fig. 12. There is still considerable confusion about potential global atmospheric problems, with global warming being relevant in this case but ozone depletion and acid rain often featuring in answers.

- (c) Again there were some quality answers here but many which were superficial, inaccurate or irrelevant. In general knowledge of alternative energy was weak; some writing about non-renewable sources to the exclusion of renewable resources. Although marks were available for an explanation of why each different type of alternative energy is not used extensively many referred to HEP only. Few went beyond saying that alternatives were expensive. Some picked up on lack of technological expertise but generally low marks were scored.

<p><b>Paper 2217/02</b></p>
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<p><b>Paper 2</b></p>
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**General comments**

Generally candidates performed well. The majority of candidates completed all questions within the allocated time. General trends and descriptions were completed thoroughly by candidates but some struggled with the explanation section of questions.

Generally, candidates used the correct geographical terms and interpreted the map well. The standard of written work was generally good. It was pleasing to see evidence of Centres teaching skills and topics through case studies.

**Question 9** in **Section B** proved particularly difficult and tested even the more able candidates. Additionally, accuracy of graph completion/labelling was not completed to a high standard in both **Questions 8** and **9**.

**Comments on specific questions****Section A****Question 1**

- (a) This was well answered and candidates mainly gained high marks on these basic mapwork skills questions.
- (b) There were two main problems here. Candidates often described human as well as or instead of physical features. There was also a tendency to simply list features rather than describe them.
- (c)(d) Well answered although yet again a significant number of candidates listed as opposed to describing in (e)(i). Candidates obviously had a good understanding of land use and were able to use the map key without difficulty.

**Question 2**

There was some confusion over keywords in several parts of this question based on graphical data on China's population.

- (a) Most candidates were sufficiently accurate to get the mark for (a)(i), but trend caused problems for candidates as they mentioned increase but did not describe the changes in the rate of increase.
- (b) Candidates described 'dependent' or looked at either early/late dependents.
- (c) Candidates looked at largest percentage now and did not suggest evidence to support an answer which was supposed to have been about the likely situation in twenty years time. Candidates must read the questions carefully!

**Question 3**

Many candidates gained 4 marks out of the 7 available.

- (a) Part (i) was usually answered correctly, but in part (ii) far too many candidates simply listed countries instead of describing the distribution. Candidates were expected to note areas of concentration of oil producers, such as the Middle East, North America, etc.
- (b)(i) Many candidates simply commented on increase/decrease in each country from the "start of year" to the "end of year". Mention should have been made of peaks and troughs through the year.
- (ii) There were generally rather vague statements which mentioned winter/seasons but were not specific to an area/country.

**Question 4**

Candidates answered question well apart from (c)(ii) where the reason was given as being too noisy or not enough houses there. The high land costs (due to competition for land) was the expected response.

**Question 5**

This photograph based question was poorly answered on the whole. Candidates seem to require more practice at using photographs.

- (a) Candidates found it difficult to describe the location of the area where settlement could be seen. It was on flat or gently sloping land at the foot of a steep (scarp) slope, mainly to the right of the stream, but not along the stream, and above a further steep downwards slope.
- (b) Evidence of farming was not answered correctly by approximately 80% of candidates. Terracing can be seen, as can fields around the area of settlement.
- (c) Candidates commented on the climate being hot but not overall dry/heavy rains at certain times.
- (d) Candidates did not look at the evidence of the photograph, but gave general answers on flooding or erosion or deposition in many instances.



**Question 6**

- (a) Candidates usually named the wettest year although some commented on month.
- (b) There was a general description of rainfall in December, but little comparison. In a comparison the two parts (in this case April and December rainfall) must be linked using words such as *however*, *whereas*, *but*.
- (c) Once again there was a tendency for candidates to list figures instead of describing pattern. No marks could be awarded for basically copying a set of figures from the resource. Comments such as 'fairly consistent from one year to the next' were expected.

**Question 7**

- (a) Most candidates gained 3 of the 4 marks available, but there was confusion over **C** = transport. Most answered process.
- (b) There was some confusion over manufacturing industry, with some candidates naming primary or tertiary examples. Candidates often named local examples, which was sensible, but got mixed up between labour and power. There were also insufficiently specific enough on output.

**Section B****Question 8**

The majority of candidates answered this question. The question was based upon the common coursework topic of CBD characteristics. The collected data was a pedestrian count and a shopkeeper interview which the candidates had to present using a variety of techniques and then interpret to investigate the given hypothesis.

- (a) This first question was aimed at assessing the candidates understanding about CBD characteristics and, more specifically, how the candidates undertaking the investigation would recognise the very centre of a CBD. The expected response was to comment that at the central on the highest pedestrian numbers, the greatest traffic, the tallest buildings and the highest rents/land values in the CBD. A disappointingly high percentage of candidates did not identify the key words of the question, i.e. the 'central area' of a CBD. Many comments were too generalised about the entire CBD rather than the specific central point. This restricted the marks of many candidates.
- (b)(i) Again this question highlighted the real need for candidates to observe the key words in a question. The candidates should have concentrated on the method of selecting sampling sites. The sampling sites of the investigation were selected by the students pacing away from site X. The advantage of this method is the ease at which this can be accomplished and the large area which can be covered. However, the disadvantages of the method are the lack of consistency of students' paces giving different distances and that pedestrians are only counted at this distance ignoring lesser or greater distances. Although the more able candidates did respond correctly, too many candidates suggested that the method would lead to different figures for the pedestrian counts being obtained – which is the aim of the investigation.
- (ii) This question was well answered with the majority of candidates suggesting valid ideas such as the location of the site, the name of the student, the date or the time.
- (c)(i) The candidates generally drew the 30 isoline appropriately at an equal distance between the 10 and the 50 isoline. Some candidates missed a mark by failing to label their drawn isoline.
- (ii) The majority of candidates correctly identified the area with more than 50 pedestrians and used the appropriate key to gain the two marks.
- (d)(i) The candidates needed to identify that the isolines showed a decrease in the number of pedestrians away from site X but that it was an uneven decrease with a slower decrease to the south and west. Generally all candidates recognised the overall change but it was only the more able candidates who developed the uneven nature. Other candidates wasted time and effort giving reasons for this possible change because the command word of 'describe' was not heeded.

- (ii) This question was poorly completed. The words of the question directed the candidate to use information from the map to try and explain the distribution of pedestrians. The best answers linked the uneven 'bulge' in the south to the presence of the secondary school and the bank hence encouraging pedestrians to walk to that area. The slower decrease in the west should be associated with the car park where people park cars and then walk into the central CBD. An alternative explanation was connected with the width of streets where only a small number of pedestrians were counted. If the candidates had failed to securely recognise the uneven decrease of pedestrians then their responses tended to concentrate on explaining why the central CBD of site X had a high number of pedestrians rather than the outward change thus failing to gain the available marks.
- (e)(i) Candidates often gained the two marks for this question, although many candidates would benefit from learning the meanings of geographical terms such as 'comparison goods'.
- (ii) The idea of a representative sample is based on the understanding that sampling can be stratified or arranged to enable a fair result to be achieved. Therefore, in this situation the students could sample 10 shops selling convenience goods and 10 shops selling comparison goods hence achieving an equal number of each type of shop within the sample. The better answer, although rarely seen, was to survey the full 60 shops to find the overall percentage of shop types and then apply that ratio to the sample of 20 shops. The more common and valid methods suggested by candidates were the sampling of every third shop or a systematic sample along one road.
- (f) This question was generally well answered with many candidates suggesting that the shopkeepers would be biased or subjective in their answers. Others gained the marks by suggesting that the shopkeepers would not be present throughout the day so their results would be unreliable. However other candidates failed in this question because they did not focus on the 'shopkeepers' responses' but evaluated the interview in general.
- (g) The importance of writing a conclusion to an investigation is imperative and it should be based upon the original hypothesis and use the data of the investigation to support any concluding statements. It is also important to evaluate the data collection methods and suggest improvements to the investigation. The question directs candidates to refer to the hypothesis and suggest improvements. Therefore, the mark scheme awards marks for commenting on the fact that the hypothesis is accurate (although the decrease is not even) and that the data collection could be improved by repeating the counting of pedestrians at different times of the day and of the year. The Examiners noted an improvement in this style of question and any practical development of the data collection methods could gain marks with many candidates scoring the full four marks.

### Question 9

This question investigated changes in depth and velocity across a stream and then a visual comparison to a meander. Examiners expressed disappointment in the level of understanding about the role of friction and velocity as candidates struggled to answer this question

- (a) The standard method of gaining depth recordings is to mark a rope at 0.5 m intervals and then stretch the rope across the stream from bank to bank. The students then dip the measuring stick into the stream at each of the rope markings. Many candidates gained the marks easily by using a labelled diagram but other candidates did not include sufficient specific detail to gain the full marks.
- (b)(i) Examiners reported that the cross section was generally completed accurately and neatly.
- (ii) For one mark the candidates were required to identify the overall changes in depth from A to B. The additional mark was gained by describing the uneven nature of the changes or the maximum depth. This needed reference to the data, but just listing the data at each depth did not secure the marks.
- (c)(i) The majority of the candidates recognised that the repeating of the float measurements would give more reliable or accurate results.
- (ii) Many candidates correctly described how the velocity results were derived by dividing the distance (10 m) by the recorded time.

- (iii) The response of the candidates was very variable in this question. The width of the bars was not regular and therefore the divide between the bar of 0.36 and 0.31 should be made at 2.75 m from A. A common mistake was to draw the bars across to the axis thus making it difficult for the Examiner to know which height the candidate intended.
- (d)(i) The majority of candidates were able to suggest the simple link between the depth and the velocity, that is as the water becomes deeper the velocity increases. The better answers used the data from Table 2 as evidence to support this relationship. The second part of the question was designed for candidates to demonstrate their knowledge of river processes and this relationship between depth and velocity is fundamental to understanding basic hydrology. Therefore, it was disappointing how only the more able candidates commented on the friction from the banks and bed as a reason for variations in velocity.
- (ii) Some candidates appropriately recognised how obstacles in the stream bed or wind blowing on the float may cause problems for the float measurements. Other candidates appropriately sited student error in measuring the timing of the float to gain the mark.
- (e)(i) The use of the photograph by candidates was variable yet annotation is an essential skill for those candidates undertaking coursework. Precise labelling of the undercutting was uncommon but the flood plain and slip-off slope were more often labelled correctly.
- (ii) The success of this question depended upon the knowledge that a meander has an asymmetrical cross-section which is deeper and faster on the outside of the curve compared to the shallower and hence slower flow of the inside of the curve. The question does require a comparison to be made with the cross-section shown in Fig. 2 and further reasoning of the changes in friction across the cross-section shown in the photograph. Only the most able candidates showed achievement in this question with too many candidates commenting upon long profile and gradient rather than focusing on the key words of the question.
- (f)(i) The conclusions were generally well written with a large number of candidates referring to the hypothesis. Marks would increase if, during preparation for this component, the candidates were instructed that they have to make a decision about the accuracy of the hypothesis in any conclusion and support their decision by quoting the data. Practice at this skill would benefit all candidates.
- (ii) As in **Question 8**, many candidates suggested valid improvements to the investigation showing thought and understanding. The most common ideas were to repeat the measurements on other streams or elsewhere on the same stream but there were also valid comments about different times of the year and with alternative floats.