GEOGRAPHY

| Paper 0460/01 |
| Paper 1 |

General comments

As is the previous examination sessions in 2005 and 2006, whatever the topic being tested, the structure of the questions followed a regular format:

- Questions were structured with an clear incline of difficulty, starting with relatively straightforward, resource based tasks, which generally required brief responses, progressing to those which were more demanding and required extended writing.

- Throughout the paper a variety of resources was used and within each question different resources were used in each of parts *(a)* and *(b)*. Whilst some tasks involved the direct use and interpretation of the resource, others used it as a stimulus to responses.

- The final task always involved extended writing (for 7 marks) and either required or invited candidates to demonstrate case study knowledge.

As this structure will continue to be used it is worth familiarising future candidates with it.

Most scripts could be read reasonably easily but there were some which were very difficult to read. Clearly if sections of the paper are not legible this is to the disadvantage of the candidate.

Overall the paper differentiated well, both between and within Centres. From well prepared candidates there were excellent responses throughout, although of course there were many weak candidates who were only able to cope with the most basic of tasks. Having said that, most candidates made a genuine attempt at the paper. As always there were a significant number of candidates, almost exclusively weaker candidates, who answered all six questions, invariably superficially, rather than selecting three as per the rubric. Clearly this is to their disadvantage. Time management was good by the majority of candidates, although some spent too much time on one or both of their first two questions at the expense of their third question. Whilst most candidates responded well to the command words used and tasks set, there were some who wrote all they knew about the topic without being selective and answering the question as set. Candidates need to be familiar with the command words used, and respond to them in the correct way to score marks. A particular problem to many candidates occurs when a question is set which requires a comparison to be written, as many lose marks by not doing so. Candidates should be taught to use words ending in –er, or the word 'whereas' in such answers in order to achieve comparisons.

It was particularly pleasing to read answers from those candidates who effectively used local case study materials in some of their answers, rather than the standard textbook examples. Candidates should, wherever possible, have knowledge of appropriate case studies to back up their generic knowledge and understanding. The syllabus is constructed in such a way that, wherever a Centre is located, there are likely to be opportunities to make use of local case study materials in many parts of the course and Centres are encouraged to make use of such case studies in conjunction with appropriate text book examples, in order to provide a sound spatial balance for candidates during their course. A blend of small scale, regional and national examples, within the context of the local area, and from other countries at different levels of economic development, is ideal. The final part of all questions in future examinations will require candidates to use a named and located case study. Candidates therefore will need to be able to refer to real examples and include place specific details to add credibility. They should be able to develop the points they make as fully as possible rather than simply listing a series of basic generic points.

The following list of points would be a useful reminder for future candidates:

- Make sure you know the examination rubric. Read and obey the instructions on the front cover. Do not answer all questions, as you are only asked to choose three questions.

- Read each question carefully, paying particular attention to command words. It may help you to use a highlighter pen to pick out key words in each question, particularly the command words which tell you what you need to do.

- Learn the details of all your case studies so you can use them to answer the last part of the questions which you choose in detail. In your answers develop the points which you make and add place specific detail to give them authenticity.

- Do not repeat the same answer in different sections – such answers rarely gain double credit.

- Use all the resources and do not ignore resources such as maps, photographs and diagrams which are provided. Be precise when using information from maps, graphs and diagrams and make sure you include the correct units when asked for measurements.

- Use the number of marks available for a section as a guide to the number of points needed. Do not write a full page of information if the question is only worth two marks. However, be prepared to develop ideas and extend answers in order to try to increase the marks in questions which are worth a large number of marks.

- Be aware of how much time you are taking to answer each section of the examination paper and use your time wisely. Do not spend half the examination time on answering the first question and have to rush through the remaining two questions. Do not sit back when you have completed your answers. Re-read and check your answers adding more facts and ideas if you can remember them.

- Ensure that the correct equipment is brought to the examination including pen, pencil, ruler, rubber and calculator.

Comments on specific questions

Question 1 was the most popular question, **Questions 4**, **5** and **6** were also popular choices. The whole range of responses was seen to all six questions, including those which were least popular, however a significant number of candidates who selected **Questions 2** and **3** were poorly prepared on those topics, and produced low scoring answers.

Question 1

(a)(i)   A straightforward question for most candidates, most could read the scatter graph, although quite a few put both Madagascar and Sudan, having looked only at the axis showing birth rate.

(ii)   This produced a range of responses, with those candidates who were familiar with the method by which natural population growth rates are calculated confidently using the scatter graph to obtain the figures for birth and death rates, then carefully calculating the rate of natural growth. Errors included the incorrect reading of birth and death rates from the scatter graph, incorrect calculations, the use of an incorrect formula (often birth rate divided by death rate), and the failure to express the growth rate correctly, either per 1000 population or as a percentage.

(iii)   Many candidates scored both marks available here, though clearly in order to do so they needed to be able to work out population growth rates rather than simply reading off birth and death rates. Thus wrong answers included Botswana or Tanzania which were often given for part **A**, and/or the USA or Morocco for part **B**.

(iv) Clearly the question required a comparison here, in order to explain why Botswana has a higher death rate than the USA. Whilst there were some excellent comparisons, many candidates failed to make any attempt to compare and lost marks by just explaining why death rates were high in Botswana. For example, they referred correctly to the impact of HIV/AIDS on the death rate in Botswana, however they needed to say that this impact was greater in the USA. Similarly the quality and quantity of healthcare was relevant, however the vital part of the answer which was often missing was that it was 'better' in the USA.

(b)(i) Many candidates answered this question well and scored high marks. The reasons for falling birth rates are well known and it was interesting to see the development of points involving female emancipation as well as the usual family planning answers. A few misread the question and gave reasons for falling death rate.

(ii) Clearly this was a challenging question, as it required an interpretation of the graph which referred to changing growth rates (backed up by figures properly expressed) rather than a reference to birth rates and/or death rates alone. Whilst some high quality answers were seen, many candidates did not perform well on this question. The following extract from the mark scheme identifies the type of response which was required:

> *generally there was a small increase between 1900 and 1950;*
> *less than 3 or 4 per 1000;*
> *it fluctuated between 1900 and 1950;*
> *some years between 1900 and 1950 saw a decrease/1905/1920/1935;*
> *most rapid decrease was 20 per 1000 in 1920:*
> *increase was much more rapid from 1950 onwards;*
> *up to 30 per 1000;*
> *rate of increase decreased especially from 1980 onwards;*
> *to about 14 per 1000*

(c) Generally this question was well answered, with many candidates focusing well on government policies. China was usually the example used and there were some excellent details included. However, it was pleasing also to see in-depth answers covering pro-natalist policies, such as those in Singapore. Some candidates, whilst clearly referring to relevant government policies, did not always make it clear how the points they made were related to population growth, this particularly applied to issues such as improvements in education and health care.

Question 2

(a)(i) Most candidates gave a correct definition of a nucleated settlement, although some wrongly referred to the grouping together of 'settlements'.

(ii) Most candidates could suggest one reason for the linear shape of Saxby All Saints, usually the significance of the main road. Few were able to give a second idea, though evidence from Fig. 3A suggests that the steep slope may have prevented expansion to the east and marshy (or flood prone) land may have prevented it to the west.

(iii) The task here was to describe the distribution and many candidates did not seem to be familiar with this command, many limiting their answers again to comments about the roads. The extract below from the mark scheme identifies the type of points which candidates could have included and it would be worth familiarising future candidates with this type of exercise:

> *Dispersed/spread out/1 to 3 km away from each other;*
> *in lines/linear pattern;*
> *north – south;*
> *on or around 30 metres/below 60 metres/lowland;*
> *on gently sloping land;*
> *both sides/east and west of river;*
> *at least a 2 km away from River Ancholme;*
> *closer together east of river;*
> *along roads;*
> *northern part of map/north of Brigg*

(iv) Those candidates who had commented on little other than the roads in (iii) scored few of the marks available here. More perceptive candidates referred in addition to water supply and a few developed the ideas of avoiding flooding, being sheltered by the higher land and/or using gently sloping land for building.

(b)(i) Educational, medical and entertainment services were common answers, although surprisingly few candidates managed to score the full three marks which were available here. Some, it seems, were not familiar with the word 'services', referring instead to where people might obtain work in the market towns. There were few precise references to retail services and some candidates gave examples of low order retail services which people would have access to in their villages, and therefore be unlikely to travel far for.

(ii) This question differentiated well, although the number of candidates who scored full marks was disappointing. Most gave basic responses which at least showed their understanding that the sphere of influence of the settlements were influenced by their size. Some gained further credit for reference to their being likely to have different orders of service provision and/or the significance of competition from surrounding towns, in the case of Holbeach. Whilst most candidates focused on the differences in size of the two spheres of influence, relatively few also focused on differences in their shapes.

(c) There was a wide range of responses, marks were often gained from reference to the multifunctional growth of large settlements. There was a general lack of knowledge of specific geographical features and historical reasons for growth of settlements chosen. There were some very good responses about the growth of tourist resorts but it was difficult at times to ascertain if candidates were writing about one resort or tourism in the country as a whole. Weak answers did not give a settlement or gave a country instead, and some weaker candidates tried to use all the prompts and wrote about all the listed functions, usually in an unnamed town or city! This is an ideal illustration of the value of using a settlement which is local, or at least in the same country and therefore familiar to candidates.

An example follows for Liverpool to illustrate the specific geographical nature of points which could be made. It also illustrates how such an answer should be place specific rather than based on generic points:

> *Liverpool is a port:*
> *located on estuary of Mersey river;*
> *which provided deep water anchorage;*
> *and sheltered anchorage;*
> *there was space for the expansion of warehouse facilities;*
> *it is on the opposite side of the Atlantic to USA which encouraged trade;*
> *and has a hinterland of industrial towns/cotton manufacturing;*
> *with well developed road/rail communications;*
> *the Manchester Ship Canal further trade with inland areas etc*

Question 3

(a)(i) Most candidates correctly identified the screes as evidence that weathering had taken place, however a common incorrect answer was 'bare rock' or just 'rock', which in itself is not evidence of weathering.

(ii) The best answers defined weathering by referring to the breakdown of rock 'in situ' by elements of the weather, and erosion by referring to moving agents such as rivers and wind. Unfortunately many candidates confused the two terms, or wrote an answer which was far too vague for credit. Many definitions of erosion referred to soil erosion and read more as definitions of transportation.

(iii) Whilst some candidates showed good knowledge here others confused the processes by which a river erodes its channel with methods of transportation or with lateral, vertical and headward erosion, or indeed with weathering processes.

(b)(i) Many candidates were able to gain full marks for adequately describing features such as the cracks, the bare rock and the mountains, although it was evident from the attempts by candidates from some Centres that observation and description from a photograph was a skill rarely practised. Despite the reference to 'features of the landscape', it was surprising how many weak candidates mentioned the walking stick!

(ii) If freeze-thaw was identified as the correct weathering process occurring in the temperate area shown, the candidate usually went on to score full marks by describing the process well. Many failed to link the question with temperate areas and produced lengthy and irrelevant accounts of exfoliation.

(iii) This differentiated well, with well-prepared candidates introducing the required comparative element, and referring to the significance of higher temperature and rainfall in tropical areas, with full explanations, particularly relating to types of chemical and biological weathering. Weaker candidates failed to compare or made brief, simplistic points. Again exfoliation answers were evident, despite the question reference to the humid tropics rather than the tropical deserts.

(c) Many well balanced answers were seen, which discussed the advantages and disadvantages of the multi-purpose scheme, although from some candidates there was lack of clarity in thinking regarding the use of the river before damming and the use of the lake after damming. In addition some candidates used the diagram to devote lengthy answers to the difficulties of site construction or 'rocks falling into the water'.

Question 4

(a)(i) Having worked out that the lowest temperature was 26 C and the highest 29 C a considerable number of candidates failed to then work out the range of 3 C.

(ii) An impressive number of candidates worked out the annual rainfall correctly. The two most common errors were adding the monthly totals and then dividing by twelve or using the temperature scale rather than the scale for rainfall.

(iii) Despite the bold print, some candidates did not restrict their answers to features shown on Fig. 6B. Generally, however, candidates of all abilities scored well on this simple task.

(iv) This proved to be much more challenging and was not answered well by many candidates. Descriptions of vegetation or climate were frequently given without the link between the two. To be successful candidates needed to explain how characteristics of natural vegetation and climate are interlinked, rather than simply describing those characteristics (e.g. there is abundant vegetation due to the hot/wet climate; the forest is evergreen due to lack of a cold season/limited seasonal change).

(b)(i) This was very well answered.

(ii) Most candidates were well versed in concerns over rainforest destruction and many scored high marks.

(c) Unfortunately many were not so well versed in basic climatology and excellent answers, though seen, were few in number. Many candidates seemed to have little or no idea of the factors involved, or merely mentioned "on the equator". Weaker candidates wrote about vegetation, desertification or simply described the climates or listed factors (e.g. latitude, wind direction) without applying them to the two types of climatic zones.

Question 5

(a)(i) Generally well answered.

(ii) Most candidates were at least able to refer to lack of skills/education as a reason for many people in LEDCs working in the primary sectors. Others also mentioned that fact that many LEDCs had large rural populations and many were subsistence farmers, or focused on the lack of capital or technology which restricted the growth of manufacturing and service industries. Vague statements such as 'there are lots of jobs in the primary sector/there are not many secondary or tertiary jobs' were not worthy of credit.

(iii) This was well answered. Most candidates classified the workers correctly, although really weak candidates did not understand the task, just picking out one of the Cubans mentioned, usually the waitress.

(iv) This was well answered and most candidates scored at least two marks. The majority understood the meaning of the three sectors, and that tourism and services expansion would be likely to result in an expansion of the tertiary sector, or that increasing mechanisation and/or drift from the land would be likely to result in a decrease of the primary sector. A small minority simply described the present situation.

(b)(i) This differentiated well. Those gaining three marks usually obtained them by stating that primary exports had decreased, export of secondary products had increased and then they gave at least one relevant figure. Those who failed to get maximum marks did so either because they failed to mentioned primary and secondary industry (focusing instead on individual products), or they gave no figures to back up their statements. Some just gave figures to back up the decrease in primary exports but did not mention or give secondary examples. The weakest candidates did not understand secondary and primary.

(ii) Many responses were brief or off the point, indeed some gave responses which would have been more relevant to part **(c)**. Those candidates who picked up marks often did so for simple references to labour supply, demand and production for the export market, but few really developed their ideas well to explain why the high technology industries are important in NIC. For example 'there is a suitable workforce' is indeed true, however reference to the cheap labour, the availability of large numbers of potential workers, and the fact that many are skilled or educated would have seen basic answers being developed into ones which were much more highly rewarded.

(c) This was the one of the most successful of the case studies from the point of view of marks scored, though examples, if given, were not always relevant to NICs. Whilst marks were available for both positive and negative impacts, they were usually scored for positive impacts. Most candidates successfully wrote at length about jobs, income, education, health, leisure and infrastructure.

Question 6

(a) In each of parts **(i)** and **(ii)** many candidates correctly interpreted the graph, however figures quoted in (ii) were not always accurate enough for credit.

(iii) There were examples of excellent full mark answers but many candidates did not really understand the role of the greenhouse gases in trapping the long wave radiation from the earth, and there were many where ozone depletion was wrongly incorporated into answers, blamed for the increasing intensity of the sun's rays and confused with the greenhouse effect.

(iv) This was usually well answered with much relevant reference to human activities responsible for carbon dioxide emissions (e.g. burning of fossil fuels), CFCs (e.g. from aerosol sprays) and methane (e.g. from cattle grazing, padi fields). Also the role of deforestation was well explained by many candidates.

(b)(i) Most candidates were able to understand, to a greater or lesser extent, why Tuvalu is at risk from global warming. The global rise in sea level, in conjunction with the low-lying nature of the islands was often correctly mentioned, though some candidates went into unnecessary detail about the reasons for the rise in sea level, repeating much of their earlier responses given in a (iii) and (iv).

(ii) This differentiated well and there were some very well thought-out responses, typically relating to the imminence of the threat and the size and height of Tuvalu compared with the USA and Australia. In addition, the relative roles of Tuvalu and the USA/Australia were effectively discussed in relation to their creation of greenhouse gases.

(c)   This wide-ranging question allowed a lot of scope for candidates and it differentiated well, yet again it was an example of a question where the most effective case studies tended to be those chosen from the candidates' local areas or at least within their own country. There were some excellent case studies, which if chosen with care, often scored highly by describing a specific human activity in a named location and its effects. Examples of the negative impacts of tourism on the natural environment were particularly well used, from a diverse range of localities. As in **2(c)**, weaker candidates wrote about a number of areas and/or activities in the hope that something would gain credit, and invariably such answers tended to revert to deforestation and global warming and its consequences, whatever activity or area was chosen.

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General comments

Candidates responded well to the paper, with the new question/answer booklet format helping weaker candidates to structure their answers appropriately. Centres are reminded that the survey map and photographs should be retained by the Centre and are not required by the Examiner. There were few general areas of weakness, with full marks being scored frequently on all of the questions with the exception of the survey map reading. Of the other questions, candidates often scored their highest mark on **Question 5** and their lowest mark on **Question 4**. Only rarely did a candidate fail to complete the paper.

Comments on specific questions

Question 1

The response was slightly disappointing with very few candidates scoring full marks.

(a)   This was generally well-answered with candidates scoring marks by noting the mining/prospecting trench, mine dump, quarry/excavation and staff quarters. Credit was also given for reference to the power line, mine name (Buhwa) and reservoir.

(b)   Working out the flow direction of the river was potentially difficult for candidates but the majority coped well, correctly answering *to the east*. Incorrect answers of *west* were understandable but those of *north* or *south* less so. In part **(ii)**, answers were far more variable. The most commonly awarded marks were for noting the islands/braiding, the abundance of tributaries, the large or variable width, the weir, the dam and the human features crossing the river such as the bridge. A significant number of candidates stated that the tributaries were *leaving* the river and this was not given credit. Weaker candidates often described the area surrounding the river rather than the river itself. Many candidates said that the river meandered, whereas a mark was available to those candidates who noted that the river was fairly straight. Other candidates referred to upper, middle and lower course and were not given credit for this.

(c)   Candidates responded well to this part of the question. In part **(i)**, few candidates failed to identify the railway. In part **(ii)**, candidates were generally able to label areas of steep and gentle slopes but the ridge (a term stated in the syllabus) was less well-known.

(d)   Candidates found this part of the question more difficult. One mark was available for stating that the huts were along the track or cut line or game trail. This was frequently identified as a road. Unfortunately when the map extracts were printed, the symbol for cultivation was almost obliterated from the map and key, and the symbol for bush became very faint. In order that candidates were not disadvantaged, Examiners eased the mark scheme by allowing a mark for a general statement that the settlement pattern was influenced by communication or transport.

(e)   This was the second occasion in recent years where a question required candidates to label a profile using arrows. The response was disappointing in that candidates frequently drew arrows that ended above or below the topographic profile and were therefore ambiguous. Candidates should be encouraged to draw arrows from above the profile and which end at a point on the line of profile.

(f) The response to this part of the question was very variable. Many found the question easy and gave answers of between 5550 m and 5750 m in part **(i)**, between 1 in 10 and 1 in 11 in part **(ii)** and between 9^0 and 11^0 in part **(iii)**. In previous years candidates have found gradient calculations difficult, therefore part **(ii)** was structured to assist them. A significant number of candidates correctly measured the horizontal distance in part **(i)** but then used a different distance in part **(ii)**. This would seem to indicate that gradients remain a problem for many candidates.

Question 2

(a) In part **(i)**, most candidates correctly answered *Venezuela* but, perhaps unsurprisingly, many answered *Uruguay*. In part **(ii)** the position of Trinidad was generally accurately plotted on the graph.

(b) Part **(i)** was well-answered with most candidates noting the positive correlation or saying that *as one variable increases so does the other*. In part **(ii)** candidates were required to suggest a reason for the relationship described in part **(i)**. The better answers referred to greater industrialisation or availability of jobs or economic development or development of infrastructure in urban areas.

(c) Many candidates scored full marks in this part of the question simply by stating whether Argentina or Peru had the greater or lesser amount of each population characteristic. Candidates did not gain credit when they only described differences in shape of the pyramid or differences in changes in population between the two countries.

Question 3

(a) In part **(i)** the vast majority of candidates correctly identified the road as the B2. However candidates frequently failed to get both of parts **(ii)** and **(iii)** correct. The required answers were Luderitz and Helmeringhausen in (ii) and Luderitz in (iii).

(b) Some very good answers were received for this part of the question, using evidence from both the map and the photograph. Candidates noted that Route A was on tarred roads but Route B was partly on gravel roads. Route B was shorter and wider but might involve problems of vehicle damage, dust and discomfort. The possibilities of visiting intermediate towns and relative fuel efficiency were also discussed. Many candidates also referred to the relative merits of the scenery along the roads but this was not given credit.

Question 4

(a) The majority of candidates identified the highest flow in 2003 as 2.5 metres on May 29th.

(b) Few candidates were able to give three different reasons for the variation in river flows. Rainfall variations (either annual or seasonal), snow melt in mountains, variations in evaporation loss and variations in water extraction were most frequently quoted. Many candidates wrongly suggested that this was a way of calculating rainfall or global warming.

(c) Most candidates correctly estimated the number of days with these water hazards within the permitted tolerances of 20 – 25 days in part **(i)** and 22 – 26 days in part **(ii)**.

(d) The most common correct response was that the data could be used in flood prediction or controls. However, use in water extraction, irrigation and power generation were also frequently mentioned.

Question 5

(a) Very many candidates scored full marks on this part of the question by correctly identifying Sri Lanka in part **(i)**, Ivory Coast in part **(ii)**, Bhutan in part **(iv)** and by plotting two accurate dots on the South Asia graph in part **(iii)**.

(b) Many candidates scored three marks by correctly describing the relationship in part **(i)** and then by noting that the West African countries had a lower life expectancy and a lower gross national income. The fourth mark was available for describing the anomalous position of Ivory Coast or Afghanistan. Only the better candidates scored this mark. Some candidates failed to describe differences between the two groups of countries and instead described the relationship between the two variables within the two groups of countries.

Question 6

(a)   The majority of candidates correctly identified the settlements as the port, modern town and village B.

(b)   This was well-answered with candidates noting the damage to the bridge, the fact that the gravel road had been washed away, the flooding, mudflows and landslides which would make access difficult.

(c)   This part of the question focused on the causes of the effects of the earthquake. Most candidates noted that the flooding would be caused by the dam bursting or the reservoir overflowing, the landslides and mudflows would be caused by the weak sands and clays on the slopes above the village, and the sinking of buildings would be caused by the weak sand and clay foundations. Other candidates described the effects rather than explaining their causes and failed to gain credit.

(d)   Here candidates were required to name an area of the world where earthquakes occur. A great variety of earthquake areas on plate margins or oceanic hot spots were quoted and given credit. Candidates failed to score the mark when the area quoted was too vague, e.g. Asia, or where they simply said *plate margins* but did not name a geographical example.

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General comments

Generally candidates performed similarly to previous years but there appeared to be a higher percentage of candidates who struggled with the geographical demands of **Question 1**. Their knowledge of coastal processes was disappointing but they were better prepared for the environmental consequences of a factory, tackled in **Question 2**. Again heeding the command and focus words of each question would improve the performance of candidates and it would be beneficial if these words were underlined or ringed by candidates so they are fully aware of the demands of each question before they respond. Candidates should also include data in their answers.

Examiners specifically reported that the final sections of each question, the conclusion and the further data collection, were poorly completed. Preparation for this paper should include extended writing of a conclusion and evaluative comments about the data collection and possible extensions to the investigation.

Comments on specific questions

Question 1

This was generally answered less well than **Question 2** and lower marks were awarded. Longshore drift as a process was little understood therefore candidates struggled with the function of groynes, the focus of the fieldwork, and their impact on longshore drift.

(a) Examiners reported a very poor response to this question. It required a textbook style diagram of longshore drift to be drawn on Fig. 2 and the labelling of the prevailing wind at an angle to the beach and the movement of beach material from left to right. The box required an explanation linking the prevailing wind direction to determine the angle of the wave bringing material onto the beach (swash) and the return of the material (backwash) perpendicular to the beach under the force of gravity.

(b) Many candidates scored the first mark for suggesting candidates could share the workload and help each other by working in groups. The second part also was generally well answered by appropriately suggesting that by completing two profiles then a comparison could be made. The answer of simply 'more accurate' did not score unless it was qualified with clear reasoning. Although the data collection technique of using a pantometer was unknown to many, there was generally a satisfactory response with candidates recognising the need to place the instrument at the LWM, ensure it was vertical and read the angle of the slope by using the protractor. This process needs to be repeated to reach the back of the beach. This is not a common method but at least one Centre submitting their fieldwork during this session used this instrument. It would have been beneficial if candidates had read the information more carefully, focused on the function of the instrument (i.e. to read slope angle) and knew the purpose of a transect line in data collection.

(c) It was heartening to note that more candidates had protractors available for this question although precision was still an issue which restricted marks. Many candidates accurately measured 1.3 m height difference, although a common mistake was to use the width data for the calculation. The best responses for the task were precisely worded height or width differences and specific comment on the gentler gradient of beach 2(b). Candidates who supported their comment with data were also given credit.

(d) The bar graph was generally completed well by all candidates and there was successful calculation of the average width, although plotting a horizontal line at 10 m on the graph was less successful.

(e) The demands of this question were poorly followed and many candidates failed to score in this section. The key words directed the candidate to revisit the map and the table of results for all six data collection sites. The mark scheme allowed descriptive comment of the different widths of all the sites. The pattern which candidates should identify is that all **(a)** sites are wider and with higher angles than **(b)** sites. If data was quoted then marks could be awarded. Any explanation for this pattern again illustrated a very poor understanding of longshore drift as the movement of sediment along a beach, i.e. from **(b)** sites to **(a)** sites and that groynes trap the sediment causing the **(a)** sites to be wider and steeper.

(f) This question aimed to stretch the candidates' understanding beyond the data collection sites to beach X. Many candidates recognised that the beach would probably have less sediment so a lower width and height. Very frequently this was followed by 'because the marina would shelter the beach' but the 'describe' command word did not allow marks to be awarded. However in the next section which required reasoning for their decision, it was very common for this not to be written and many candidates failed to score in this section.

(g) The hypothesis was correct in that the groynes did trap sediment making the beaches higher and wider. However the more able candidates recognised that this also caused some sites to be narrower and credit was awarded for this. Examiners reported that the use of data was rare despite the clear listing of the demands of this section. This question often scored low marks because the candidates did not understand the role of longshore drift and groynes shown by the data. The limitations of the data were generally not commented upon or tended to consist of vague ideas about student error. Precision and the use of data would significantly improve achievement in this question.

Question 2

(a) The command words for this question were 'on the field sketch', 'label' and 'complete the sketch'. Although most candidates drew onto the field sketch the railway and an area to show the settlement, many ignored this instruction and either just added further labels or added words to the photograph. The precision of the responses was disappointing to examiners, with the most successful labelling being the working quarry area.

(b) The definitions of primary and secondary sources of data are a familiar question to this paper. Therefore the responses usually were rewarded with two marks although the less able candidates concentrated too much on the provided newspaper article and did not answer the question. The majority of candidates recognised that the factory brought employment. The systems diagram required the candidate to identify just the process within the cement factory and the outputs of the factory. The function of the factory is to produce cement and the process to do this is the combining of the raw materials by heating them in a furnace. Too many candidates listed extraction, transport and monitoring as factory processes. The identification of the outputs was more successful as cement and waste heat and fumes. Examiners report that rarely were the full three marks awarded.

(c) Systematic sampling allows the students to question local people throughout the settlement. It is also an easier method than using random sampling. The candidates often scored one mark in this section but precise reasoning was uncommon. Generally the pie chart was constructed accurately but often a title was not included or the key created did not match the one used on the graph. Again care and heeding the command words would improve scores. The accuracy and overall presentation of the graphs did vary considerably and some Centres had prepared their candidates well for this type of question. The mark scheme for the description of the pattern shown by the data includes that air pollution has the highest amount of concern but litter is not seen as important. Many candidates scored two marks here and the better responses grouped together sources of noise and avoided listing the results.

(d) It was generally pleasing to see the responses to this question and many candidates showed a good understanding of the issues. Acid rain, climate change and respiratory diseases were the most common answers and credit was given for further development of these problems. There was general confusion between ozone depletion and global warming and this was disappointing to read.

(e) This question required the candidate to note that the underground pipeline had no impact on the local people but both the railway and the road could cause problems. The candidates should have identified the noise emitting from railway and road but marks were available for comments on the impact of the transport beyond the ideas provided to them. This question was generally poorly completed, although the more able candidates often gained full marks.

(f) The requirements of this question were for candidates to think for themselves about the type of data collection the students may undertake. The key words within this question are 'own survey', 'the local environment' and 'describe in detail'. Examiners report that far too often any relevant ideas were very vague and imprecise. The most common response was for further questionnaires similar to those in **(c)** or linked to the health of the workers rather than the environment. Any details concerning how or why the data was collected were not included. An example of a good answer would be that the noise could be measured at different distances from the factory using a decibel meter. The days and the times would be listed, with reasoning and then further data collection about the soil or vegetation would also be outlined. Candidates should be more prepared for this style of question in future.

GEOGRAPHY

Paper 0460/05
Computer Based Alternative to Coursework

General comments

A small number of Centres participated in this Pilot, which was taken *in addition* to Paper 4. Generally candidates coped well with this examination. Candidates seemed to find the questions which involved matching up, labelling and completing graphs relatively easy (the computer marked sections). However, with the answers that required a description or an explanation (the Examiner marked sections) more detail and depth was often required.

The simulation was based on shopping patterns. It included a comparative study of two shopping Centres, one being the CBD and the other being a small shopping Centre in the suburbs.

Comments on specific questions

Question 1

This question was aimed at 'setting the scene' for the simulation. Most candidates answered this question well and gained full marks by understanding the three hypotheses.

Question 2

This question was to define the geographical terms used in a shopping investigation. Again, this was well answered and many candidates correctly matched up the terms and the meanings. A few, however, mixed up 'range' and 'threshold' which highlighted the need to learn the geographical vocabulary thoroughly.

Question 3

This question was to introduce the range of services and shops that would be surveyed in an investigation. Again, this was well answered and many candidates correctly matched up the examples with their correct group.

Question 4

This question was to simulate the completion of a land-use map. Quite a few candidates gained full marks but some candidates found this a little difficult and did not look closely enough at the photographs.

Question 5

This question was also to simulate the completion of a land-use map, as a student completing coursework would do to present the results. Many candidates only gained one mark here as some candidates mixed up the food shops with the café and restaurant, putting them all in the food service category. Some also thought that the electrical and furniture shops were personal services.

Question 6

This question was to simulate recording skills used in an investigation. This was well answered and many candidates correctly completed the missing tally and number.

Question 7

This question was to simulate the presentation of a graph. Again, this was well done and many candidates dragged the bars up correctly and accurately to gain full marks.

Question 8

This question was to encourage observational skills and to relate this to knowledge of city Centre shopping Centres. Although a large space was given for the 'free writing' of the answer, few made use of it and some candidates wrote very little. Others wrote a large amount but it was not very relevant to the question. The best answers referred to the many floors of shops, the attractive layout and the use of advertisements.

Question 9

This question was to reinforce the need to label the axes of graphs. Almost all the candidates correctly put two suitable labels.

Question 10

This question was to encourage the use of calculators. Again, almost all the candidates did this very well and gained full marks.

Question 11

This question was to encourage the candidates to look closely at pattern shown by the graph and explain it. The responses to this question were very mixed. Some candidates could identify the differences but found the explanation of them rather difficult. Others lost marks by repeating the same difference twice. They said that there were more pedestrians in the morning at shopping Centre B, they then said there were fewer shoppers in the morning at A. This is the same point so these candidates limited themselves to only one mark for the difference and only one for the explanation.

Question 12

This question was to encourage the candidates to think about fieldwork methods. There was a variety of responses from the candidates and most gained one or two marks. Candidates found answering the second part of the question easier and understood the idea that there were variations in pedestrian flows during the day. However, many of the answers for the first part of the question were rather vague and brief, some candidates just saying that counting for five minutes was 'just right'.

Question 13

This question was to demonstrate different fieldwork techniques. Almost all the candidates correctly placed two missing desire lines on the map.

Question 14

This question was to see if the candidates could show their understanding of the term 'sphere of influence'. Disappointingly, the candidates found this difficult. Most gained no marks at all, a few gained one mark, with even fewer gaining full marks. Candidates did not seem to understand that the line needed to go closely around all the X's for shopping Centre A, for example. Also, many missed the shopper in the southwest of the map, which was for shopping Centre A too.

Question 15

This question was to make comparisons. Many only gained one mark here by identifying that the sphere of influence for shopping Centre A was larger than B. Few went on to quote figures for the difference in the diameter/radius of each sphere or identify the irregular shape of shopping Centre A.

Question 16

This question was to simulate interviewing shoppers. Generally it was well answered and many gained four or five marks. However, a few candidates were obviously muddled between comparison and convenience goods and so lost marks.

Question 17

This question was to think about interviewing people. Generally it was well done, most candidates asking the obvious question "how often do you shop here?". However, some did not put their answer in the form of a question or asked a question that had already been answered in **Question 16**, such as "how did you travel here?" and so gained no marks.

Question 18

This question was to identify advantages and disadvantages of the two shopping Centres to shoppers. Most did this question quite well and scored two or three marks. However, many wrote opposites such as 'more shops' for an advantage for A and 'less shops' as a disadvantage for B, which was not creditable. Better answers were more detailed. A few also wrote answers which were related to shopkeepers, rather than customers.

Question 19

This question was similar to **Question 18** but was concerned with use of the investigation for opening a new shop. This was answered well, most candidates gaining three or four marks.

Question 20

This question was concluding the investigation. Disappointingly, it was not answered well. Most candidates gained only one or two marks. This was because answers were very brief and rather vague. Very few candidates quoted data (for example 261 pedestrians in shopping Centre A compared to 120 in B).

Question 21

This question was evaluating the investigation and suggesting possible improvements. There was a variety of responses from the candidates and most gained two or three marks. Some answers were good with many ways of improving the investigation such as interviewing more than ten shoppers, from a variety of age and gender groups, in order to get a more valid sample. Other good suggestions were to repeat the pedestrian counts on different days and for more times during the day, in order to get a clearer pattern of the flow of pedestrians. Weak answers were often very vague.