

Geography A

Advanced GCE A2 7832

Advanced Subsidiary GCE AS 3832

Report on the Units

June 2007

3832/7832/MS/R/07

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This report on the Examination provides information on the performance of candidates which it is hoped will be useful to teachers in their preparation of candidates for future examinations. It is intended to be constructive and informative and to promote better understanding of the syllabus content, of the operation of the scheme of assessment and of the application of assessment criteria.

Reports should be read in conjunction with the published question papers and mark schemes for the Examination.

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Chief Examiner's Report

General Comments

The performance of candidates has again been approximately equivalent to previous sessions. There was considerable variation between centres and within centres. This year particularly there was evidence of quality candidates underachieving as they produced pre-learnt answers that had limited relevance to the question set. This was especially common in 2683 and 2684 but also occurred in 2681. The top quartile of candidates produced work of an impressive quality showing a very encouraging level of knowledge, understanding and application with some excellent and detailed examples or case studies.

AS

Assessment is largely by short structured questions. Performance did vary across the components. Responses to 2680 (physical environment) were relatively weaker than 2681 (human environment) but less so this year. The weakest element remains the written section of 2682 (geographical investigation) possibly because it is at the end of the exams, at the end of the day, at the end of the week! As usual 2682 was lifted by the report component in which nearly 80% achieved at the highest grade.

A2

Assessment is largely by extended writing which allows effective differentiation. Performance was similar to past examinations but possibly fewer reached the highest levels as so many able candidates did not answer the question actually set.

As A2 is assessed via options it is possible for candidates to experience a limited range of geography. The usual pattern was repeated with few centres studying applied climatology and service activities in 2683 and the geography of the EU and managing rural environments are unpopular in 2684. This selectivity does re-emphasise the importance of the synoptic paper which draws together the strands and connections of the whole two year A level geographical experience.

Overall

There have been very few communications from centres expressing concerns about aspects of the unit examinations this session but concern was expressed, at AS level, that 2682 written paper did not contain the expected statistical question. This just re-emphasises that centres should not pre-guess the exam or have expectations of the same questions every exam. It does not serve their candidates or the study of geography well. Candidates should be reminded that at AS they can no longer write on the blank back pages but can still use additional sheets. Marks schemes have to be very flexible as candidates have very inventive minds and read into questions some quite original, and valid, interpretations.

There remain some common themes throughout all the components:

- Candidates must carefully read and answer the question set rather than produce prepared answers that lack relevancy such as the responses to Q.6 in 2684
- Candidates need to understand and use effectively geographical definitions and technical terms especially in 2680
- In short section answers candidates would be best advised to develop a few points in depth rather than many superficial ones
- Often the level of candidate's response is held back by the poor quality of English. The use of paragraphs is not well understood at A2
- Centres should ensure that candidates are familiar with OS maps and understand how to interpret them. This remains an area of underperformance in 2681 and in 2683

Report on the Units taken in June 2007

- More candidates should emphasise the spatial context of their work and stress location. Some need to refer to far more examples or case studies. A greater use of sketch maps at A2 would be welcomed.

Coursework at all levels also suffered some common limitations:

- Too many candidates produce over-length work often with excessive appendices or annotations. This reduces candidates' performance to level 2 at best. Too many candidates and centres are less than truthful about word totals
- Titles and/or tasks were totally inappropriate. Teachers should check they are feasible in the time and location available
- Candidates clearly do not understand the logic behind the tasks they carry out
- Excessive repetitive diagrams representing the same data
- Including **all** the questionnaires used within the appendices
- Candidates didn't always understand why they were using the statistical tests they were nor the implications of the results they achieved
- Centres should ensure candidates do not use plastic folders and greater care needs to be taken in filling in the cover sheets.

Particular Points to note

The performance of candidates showed evidence of centres responding to recent INSET with far fewer producing over-length reports or incomplete reports in 2682/02 and more effective use of data and map evidence in 2681.

The use of more part questions in 2682 does seem to have enabled candidates to score more highly but too many failed to score in one or more sections. The reduction in choice of questions in each of the options in 2683 had no noticeable effect on the overall 2683 results. The loss of the report in 2686 did depress the marks and this was allowed for at award.

General Comments

Candidate performance in this particular unit was very much in line with that of previous years. All four questions provided opportunities for candidates to show what they knew, understood and could do. As ever, some responded better than others but very few were unable to attempt questions or parts of questions. Adequate time appeared to be available and there was very little evidence of candidates being unable to complete the paper. Some very high quality work was seen and the best candidates displayed an excellent depth of understanding, especially of process-outcome linkages. Disappointingly, some of the weaknesses identified below have been regularly observed over recent years.

The main strengths demonstrated by the candidates were:

- Wide-ranging descriptive knowledge
- Effective use/interpretation of stimulus resources
- Sound time management allowing all questions to be completed.

The main weaknesses seen were:

- Poor knowledge and use of technical terminology
- A lack of focus on the key words in the question
- Not explaining cause-effect linkages fully or clearly enough.

Comments on Individual Questions

Question 1:

This question proved to be very accessible to candidates and for many it was their highest scoring part of the paper. The majority showed at least a sound grasp of the principles of water movement in drainage basins and the factors influencing the processes. The main weaknesses were in not focusing clearly or closely enough on the specific demands of the questions.

(a)(i) A high % of candidates correctly identified the lag time, but very few recognised the falling/recession limb. Many seemed to have misread the graph and gave peak discharge as their answer to B.

(a)(ii) Although most candidates were able to make valid references to interception and uptake, many related this to the loss of water from the system rather than to the delay in its passage to the channel. The best answers developed their identification of interception as a key reason by referring to subsequent leaf drip and stem flow which eventually allow water to reach the surface and then move towards the channel. Some confusion existed in understanding the impact of tree roots on the speed of water movement.

(b) The key word in the question “stores” was largely ignored by many candidates. Some broadly referred to the overall storage of water in the basin but relatively few wrote explicitly about groundwater store, soil store or surface storage. Some good answers were seen that explained the impact of dams on surface/channel storage. The use of a named example was very variable in its accuracy. Many named a place, such as a city, or an area, such as the Lake District, rather than a drainage basin. This often led to a lack of focus and detail in the response.

(c) Many candidates found the range of data in the resource something of a challenge, particularly as some of it did not match their preconceptions. This resulted in many struggling to make valid comments about the role of urbanisation and basin size. Good answers sometimes commented on the insignificance of these factors. Rather better use was made of the altitude data with a valid assumption made that higher altitudes would correspond to steeper relief. The mean flow data was often applied as a cause of the speed of water movement rather than as evidence of the influence of the other factors. The best explanations were of the role of geology, with many showing a clear understanding of the role of permeability in affecting water transfers. The very best were those that dealt with both basins and linked their explanations very directly to the different shapes of the two hydrographs.

The following is an extract from an L3 response.

The River Dart is in a granite basin, which is a factor that leads to it having a much shorter lag time and steeper rising limb than the Meon graph. Granite is impermeable and so percolation is very small. Most rain that falls moves as surface run-off, reaching the river very quickly. In contrast, the Meon is on porous chalk and so percolation is large and water is stored in the groundwater stores and only moves slowly by baseflow.

Question 2:

Although much of the content of this question was very familiar to candidates, many found it difficult to provide enough accuracy in their answers. An insecure grasp of key terminology was often evident and this led to a significant loss of marks in what should have been quite straightforward questions.

(a) Answers in this question tended to be rather vague and modifications to the environment were often very generalised. These sometimes consisted of little more than “change” and “alter”. The best answers were those that applied ideas relating to succession by referring, for example, to the addition of organic nutrients to the soil as plants die and decompose or plant roots binding the sand and increasing its stability.

(b) The weaker answers here made statements about salt tolerance, which were not explained. The best were explicit not only about the environmental conditions but also about how the plants have adapted in order to survive. Good detail was seen on the sunken stomata and curled leaves of marram grass, which help reduce water loss in dry conditions by decreasing rates of transpiration.

(c) A disappointingly small number of candidates were able to offer clear, succinct definitions of the two terms. Although many were aware that “plagioclimax” was something to do with human activity, very few could relate it to the succession sequence. Even fewer seemed familiar with the term “dominance”. At best there were vague references to importance; few referred specifically to the ability to out-compete other species. Those that did often suggested it was simply a competition between two species, rather than all of the species in the plant community.

(d) Answers here also tended to be of moderate quality, with many candidates just telling the story of the dunes. Many forget to focus on soils and vegetation but just the “sand dune”. Many candidates did not explain how the human activities caused the impact. How does trampling lead to destruction of vegetation? The mentioning of bruising and/or the lack of photosynthesis would have given answers more creditability. Words like “damaging” and “destroying” came up time and time again. Similarly, when discussing the succession of sea buckthorn, which many did, candidates did not explain the principles of competition to link to the dominance of the buckthorn over other species. In this case, the word “smothering” appeared very frequently.

The most commonly used named example was Braunton Burrows, although a range of others were also seen. Some were only vaguely located, for example “in Devon”. Those that made good use of their named example often did so by supporting their answer with evidence and in developing a clear focus on the specific impacts.

The extract below is typical of the weak, Level 1 answers seen.

In Brnton Burrows there is a lot of human activity. Hundreds of tourists come in the summer and they damage the plants in the sand dunes and cause erosion. The army also train here on some days and their tanks and soldiers disrupt the plants and damage the soil badly when they drive over them and run around on them in their exercises. Rabbits caused a lot of damage to the grass and so had to be got rid off by poisoning.

Question 3:

This was the lowest scoring question on the paper this year and many candidates had real difficulties in applying their knowledge and understanding to local energy budgets.

(a)(i) This question was answered well by the majority. It was pleasing to see so many answers making full use of the diagram to provide supporting data. The best answers even manipulated the data in order to make general comments as well as describing the processes in detail.

(a)(ii) Whilst most candidates had at least some idea of the meaning of the term “albedo”, relatively few were able to explicitly link this to the local energy budget. Many candidates gave examples of surfaces with high and low albedos, making full use of the stimulus resource. Better answers then contrasted this with the amounts of energy being absorbed at the surface. Relatively few, however, then made summary statements about the influence of this on the overall budget.

(c) A similar issue was evident in this question, with a lack of focus on the local energy budget often being a weakness. A very large proportion of the answers seen suggested that there was always more cloud at night than during the day. Even answers offered by apparently quite knowledgeable candidates failed to make the differences explicit. Many made reference to the fact that there was little incoming solar radiation at night, but did not contrast this to the day-time situation. There were also many who suggested that there is no out-going terrestrial radiation at all during the day.

(d) The theme continued in the final part of the question. Many built on their answer to (a)(ii) and concentrated on changes to the surface caused by human activity and the impact of this on the albedo. However, there was often little mention made of the impact of this on absorption and hence on the overall budget. Many weak answers had their focus at the wrong scale, referring to global warming and the destruction of the ozone layer. Most seemed to want to argue that the modifications were always very significant, and it was rare to see answers commenting on the fact that changes are often very minor. Examples of human activity were required, and usually provided. These did not need to be located, but as in the previous question, located examples often help in terms of both supporting evidence and a clear focus on the specific impacts.

In the extract below the candidate struggles to appreciate the required scale.

In big cities such as Manchester there are lots of factories and traffic. These cause pollution and this affects the layer of ozone in the air. This lets more solar heating in and not so much out making a bigger budget in the area. Global warming then happens and this makes temperatures higher all over.

However, the following extract is much better focused and has more accurate explanation.

Urbanisation in cities such as London has led to small but important changes to the local energy budget. Homes and people give off heat and this can increase air temperatures near the ground surface. This is especially true in winter when central heating systems are much in use. Brick buildings and tarmac road surfaces also absorb and store solar radiation, having a much lower albedo than trees and grass. This heat is slowly released at night as long-wave radiation and this makes near surface temperatures warmer, especially on cloudy nights as heat is trapped by water vapour in the air.

Question 4:

Answers to this question were very variable in their quality. Some showed a very insecure grasp of slope processes whilst others had a sound conceptual understanding of slope stability.

(a)(i) As in question 2, candidates’ knowledge of technical terminology was exposed as being very weak. Even candidates who scored highly on other parts of this question failed to provide a succinct, accurate definition. Many answers failed to recognise that mass movement is not a transportation process and suggested that running water was the key. Others took a very narrow view and referred only, for example, to soil movement.

(a)(ii) Most candidates were able to offer an appropriate type. Some answers, however, were too vague such as “fall”, or inappropriate, for example “avalanche”.

(a)(iii) Answers here were sometimes a little disappointing and suggested that candidates had not studied the photograph closely enough. The role of marine erosion undercutting the base of the slope was frequently neglected, whereas many based their answer on the role of human activity on the cliff top. Some took a fairly narrow view and suggested that weathering was the

major reason. These answers often failed to make a clear link between the weathering process and the resultant mass movement mechanism. A few very good responses applied their conceptual understanding effectively and referred to the relationship between shear stress and shear strength.

(a)(iv) This was a very straightforward question and many were able to secure high marks. There was some confusion between wetting-drying and other weathering processes such as freeze-thaw and even exfoliation. Biological action was generally well known with good answers referring to both biomechanical and bio-chemical elements. Weaker responses tended to make vague references to either acid rain or earthworm activity.

(b) The final part of the question discriminated very well. Examples were required, although they did not need to be located examples to satisfy the mark scheme criteria. However, those that did use located examples in their answer again tended to provide good supporting evidence and a clear focus on the impact of the relevant human activity. Many tried to make us of Aberfan as an example, although this was not always applied very effectively as the stability of the slope was influenced rather more by the stream beneath than the initial human activity of spoil dumping. Better examples were often those related to slope foot activity, such as road cuttings or defences against cliff erosion, such as in the extract below.

At Barton-on-Sea in Hampshire the clay cliffs were often unstable. This was caused by the sea eroding at the base making the slope steeper and increasing shear stress. To maintain stability sea defences were added at the base of the cliff in the form of large resistant boulders. These reduced erosion and helped keep the slope stable at a lower angle. Also, slumping occurred when the clay cliffs became wet, heavy and slippery. By adding drainage pipes in the cliff face water content was reduced and this stopped the slope from becoming unstable. Vegetation can also be added to slopes as this increases shear strength as the roots can bind the surface material together.

General Comments

In this session the topics examined were: population change through time including the demographic transition model; spatial variation of total fertility rates; counterurbanisation and socio-economic change in rural areas; migration and urbanisation in LEDCs and their effect on the urban environment.

Many candidates made good use of the resources provided. Descriptions of population trends through time (line graph of population change in Europe and Asia since 1750), explanations of changes in a rural settlement (1:25,000 OS maps of Hayfield in 1971 and 2004), and interpretations of the patterns of migrant flows (flow line map of internal migration in Egypt) were often written in detail and with clarity.

In fact there were a number of outstanding scripts in which all four Assessment Objectives were achieved to a high degree. It was remarkable, given the time constraints of this paper, how well some candidates performed. Their ability to analyse the unseen data, to interpret the questions and then apply knowledge and understanding in a wide range of topics, all in the one hour, was very strong.

Many of the comments in this report therefore serve to confirm the good practice which is so evident in many centres.

Nevertheless, for a significantly large proportion of the candidature further improvement could have been made. Not only was this a matter of understanding but also of basic examination technique. Many of the points which have been set out frequently both in previously published Reports to Centres and at INSET meetings continue to be relevant. These are perennial issues most of which are returned to in the comments on individual questions.

For example, all generic suggestions made in the January 2007 Report to Centres are applicable again in this June session and are worth re-emphasising in brief: definition of terms need to be learned; geographical terms need to be used correctly throughout the examination; explanations need to be more fully developed; and, knowledge and understanding of case material needs to be more detailed and more specifically applied to the precise demands of the question.

Many examiners reported that key words in the questions needed to be given more careful thought and attention.

In addition, two further comments may be of help to some candidates. The first concerns the quality of map reading. OS maps are the most frequently used single type of resource on this paper. Candidates should become more familiar with the use of OS maps in their studies of rural and urban settlements, especially at 1:25,000 and 1:50,000 scales. The ability to state grid references correctly with eastings before northings is a basic requirement but a common problem. Candidates might also consider the appropriateness of giving either a 4 figure or a 6 figure reference depending on the type or scale of feature under consideration. Furthermore, although a key is always provided, greater familiarity with symbols at both scales might save time and minimise the glaring errors and misinterpretations seen in Q2 this year.

The second is the 'wholly generalised response' in the two extended sections. The established norm is a maximum of 6 marks (mid level 2) awarded for a response which could apply to any urban or rural area. Marks cannot be achieved in level 3 if the answer is merely headed by a place name eg Cairo, Sao Paulo, Kolkata, North Wales, East Suffolk, or North Norfolk and then followed by discussion which could apply to any similar locality. Many responses would have

been lifted significantly by reference to further place detail eg named squatter settlement/urban district, physical feature, population figures, village names, and percentage age categories, all of which are to be encouraged as appropriate.

It may be helpful to centres to consider the responses provided for each part question below. These are not perfect answers; they have been selected to represent different levels in performance. The intention is that, in conjunction with the Mark Scheme, they might be useful in the preparation of future candidates.

Comments on Individual Questions

1 Population

Question 1 examined population change through time and the influences on total fertility rates. The stimulus material included a simple line graph showing the populations of Europe and Asia between 1750 and 2005 and, a table of total fertility rates for selected countries. On the whole, responses to parts a) and c) were good, but the demographic transition model in part b) was less well understood.

Q1a required comparison of the European and Asian population changes between 1750 and 2005. Most responses which were placed in level 2 referred correctly to the differing rates of change before and after about 1900 ie broadly similar increases before this date and a significant contrast after. Many candidates made good use of the graph by providing specific evidence from both periods in support of their answer. The very best responses provided more subtle description of the rates of change. For example between 1850 and 1900 the European population although smaller was increasing at a much faster rate than that of Asia. Many good responses also referred to doubling times. An example of a Level 2 response is given below:

In 1750 the population of Asia stood at 500 million whereas in Europe just 150 million. Both populations started to rise at a steady rate. By 1855 Europe's total had doubled but it took until 1910 for Asia's total population to double. However after 1910 Asia's population started to increase rapidly, from 1000 million to 4000 million in just 95 years. Europe's population however only rose by 250 million over the same period of time. Asia's population increased almost eight times its original value whereas Europe's population quadrupled.

Typical Level 1 responses lacked clarity: comparisons and reference to rates of change were more limited; some even included an attempt to explain. For example:

The population of Asia is always greater than that of Europe by at least 350 million people. During the 1940s the population of Asia began to dramatically increase. This is because the continent was developing industrially at this time so the quality of life improved and less people died. In Britain at this time the population increase slowed due to the war but has been gradually increasing due to advances in medicine and science.

The best answers to **Q1bi** demonstrated good knowledge of the demographic transition model, making clear links to population change through time with reference to at least two of the stages. Often creditworthy diagrams of the model were produced in the available space. One example of a Level 2 response was:

The demographic transition model shows the CBR and the CDR for a particular country over time. This can be used to work out the population growth rates. An understanding also shows how the CBR and the CDR influence each other, eg when the CDR drops and the CBR stays constant, then there is growth. It also explains that when the CBR and CDR are similar, then there is no growth. In the first stage, about UK 1750, there is limited population growth due to the high CDR and CBR. The CDR then falls, causing population increase. At about stage 4, the imbalance is redressed and $CDR = CBR$, causes stable populations.

Responses which demonstrated only basic understanding of the model were placed in Level 1, such as:

The demographic transition model takes into account the crude birth rate and the crude death rate which helps to explain population changes through time. It gives distinctive stages which can be related easily to situations that have occurred over time. You can almost define every country into one of the four stages.

Explanation of two limitations of the demographic transition model was required in **Q1bii**. The most frequently given answers related to: large scale international migration; dramatic influences on birth and death rates such as government policy; its Eurocentric characteristics; and, being outdated without a fifth stage. A Level 2 response is shown below:

One limitation is that the model does not take into account the impact of migration which for many countries now is a major indication of population change – not just the pattern of births and death rates. Particularly in the EU where greater freedom of movement is increasingly allowed migration will be a major factor in many population changes in countries. Another limitation is that the model doesn't take aid into consideration – some LEDCs may receive help or aid from MEDCs in their process of industrialisation, so stage 2 and 3 of the model may not be applicable to some countries where it is aid that helps them progress, so they reach stages 4 and 5 much faster and via a different route.

Where limitations were stated in a more basic way or where there was lack of clarity marks were achieved in Level 1 as in the case below:

The demographic transition model is based on MEDCs and how they developed over time through industrialisation. The same may not apply to an LEDC therefore as they have different factors of influence.

Factors affecting variation in total fertility rates were understood well in **Q1c**. Many candidates were able to explain two factors and make an explicit link to the appropriate rate. Most recognised the difference in rates between MEDCs and LEDCs making this an integral part of their answer. A wide variety of socio-economic factors were identified; a Level 2 response is provided below:

The LEDC countries shown have higher total fertility rates due to the differing role of women in these countries. Countries such as Niger, Nigeria and Kenya have total fertility rates of 8.0, 5.7 and 5.0 respectively as women are encouraged and expected to have many children and take care of the household whereas the emancipation of women in MEDCs has led to fertility rates of 2.0 and 1.7 in the USA and UK respectively. In these countries women have careers and fewer children because they start a family later. Due to higher infant mortality rates in LEDCs because of poorer health care services, fertility rates are higher since families have many children in the hope that some will survive. This is less of a fear in MEDCS due to good health care, sanitation and food supplies. Hence rates of total fertility are less in the MEDCs shown.

An example of a less well developed response, placed in Level 1, was:

They differ because in LEDCs such as Niger they do not have access to much contraception and if they do very few know how to use it, so more babies are born. In MEDCs such as the UK women work so they cannot look after too many children. This means they will have less kids.

2 Rural Settlement

Question 2 examined the causes and effects of population change in rural settlements. In the first section, two OS map extracts (Hayfield 1971 and 2004) provided the source material and, in the second, a more extended section afforded candidates the opportunity to apply their own case knowledge.

Q2a required definition of the term counterurbanisation. One example of a correct response was:

Counterurbanisation is a decrease in the proportion of people living in urban areas, leading to an increase in the proportion of people living in rural areas.

There were, however, a great number of attempts which did not show full understanding of this process such as:

Counterurbanisation is the movement of people from an urban area into a rural area.

Q2bi asked for map evidence of two changes in the built environment of Hayfield. There were many accurate and detailed responses. Most referred to examples of the physical expansion of the settlement in terms of additional housing. Others identified the relocation of the school, the redevelopment of the industrial site or loss and gain of specific services. For example:

The area around grid reference 038872 has grown in density of the built environment between 1971 and 2004, adding an estate of houses and a hotel. There has also been an increase in the built environment along the River Sett around grid reference 034871 which wasn't there in 1971, this follows the river and the A6015 replacing the Works.

An example of the less specific, more inaccurate responses was:

Hayfield has grown and now has much more buildings such as a petrol station. There are now more tourist attractions such as hotels and cycle routes.

Reasons for the changes identified in part i were required in **Q2bii**. There were many good responses based on commuting, retirement, the local tourism industry and planning issues. Explanations were often enhanced by further reference to information shown on the OS map extracts, evident in the following Level 2 answer:

These changes could be because Hayfield is an accessible rural area with good road links eg A624 that will converge in the town centre. As it is accessible it may have experienced growth due to counterurbanisation. The surrounding settlements are small and remote and so Hayfield may be a key settlement into which government funds have been invested enabling growth so that it will be a service centre for the surrounding rural villages. It may have experienced growth because of tourism eg the campsites and picnic areas (032871) and this will have led to increased demand for services and thus it will have grown and expanded. The old railway line running to Hayfield has been replaced by a recreation route suggesting it is a popular tourist attraction. This could be due to government investment especially if the works seen on the 1971 map eg 035870 have declined and the government wanted to regenerate the area.

By contrast some candidates seemed unable to apply their knowledge and understanding of the relevant topics and concepts to the data presented on the OS maps viz:

The first change occurred because their population would have grown so they've modernised. They had a lot of room to expand onto as well. They got more tourist attractions so they could make more money for the community.

Many candidates recognised that **Q2c** required an understanding of reasons for decreasing family size and the corresponding increase in number of households; hence the validity of answers such as:

This is due to single people or young commuter couples moving into Hayfield as opposed to the traditional large families which could all live in the same house so there has been a shift in the population structure to young single people who require more housing.

and

The number of households increases faster than the population because more people are living alone and fewer people are living in larger families due to later marriages, more divorces and an increased preference for single living.

The first of the two extended questions on this paper covered familiar ground. As always there were many highly competent responses, yet for some the application of detailed case knowledge to the question was a difficulty. Candidates chose a wide range of rural localities to support their answer including South Oxfordshire, Weardale and Teesdale in Durham, South and East Devon, North Norfolk, South Shropshire, Basilicata in southern Italy, the Isle of Wight, Iona and many immediate urban hinterlands. Unfortunately there were a surprising number of candidates who launched into rehearsed answers without reading the question carefully enough. There were also lengthy answers based on urban population change in Los Angeles and, inevitably, on population policy in China.

Three responses to **Q3d** are provided here to demonstrate aspects of the range in performance. The link between population change and its effect is a key element of the mark scheme.

A

In South Oxfordshire the population increased by 32% from 1961 to 1994 although the growth was mainly in towns (such as Thame – 132% growth over this period) and larger villages (eg Chalgrove – 1000 to 3000). This led to the creation of numerous new estates being created around the old village core, causing a reduction in community spirit – indeed one estate has no road connection to the core, instead it has access only to the by-pass. Most of this population increase has been caused by counterurbanisation from Oxford which was prevented from expanding by the greenbelt in the 1960s. This has caused house prices in the area to dramatically rise, meaning that local young people cannot afford them and have to leave the area. This also caused a change in the social make-up of the village – now only 3% of working age people work in agriculture – but 40% have professional jobs, and 50% work outside South Oxfordshire.

A quarter of the villages in the area have experienced a fall in population – a result of poor access and planning constraints (greenbelt and Chilterns AONB) preventing expansion so with falling family sizes, populations fall. This caused young people to leave the villages in search of work – leading to an ageing population in villages such as Ipsden (in AONB), and a decline of services as the population is lower than the threshold – over half of Ipsden’s services have closed in this period.

B

St Johns Chapel, in the north Pennines, is a small agricultural village which has experienced massive population decline. Its current population is 450. It is an agricultural village but because of advances in technology fewer farmers are needed. As a result many of the young males are moving away to urban areas to find work, which suits their skills and is well paid. Young females are also moving because they don’t want the agricultural work available.

The number of services in St Johns Chapel has also decreased. In 1950, there were 120 children in the village. Now there are just 38. Due to a lack of demand, there is no longer a primary school there.

St Johns Chapel is very isolated. It is 14 miles to the nearest secondary school and swimming pool, and two miles from the nearest library.

C

It has led to overcrowding in many cases. This puts a large strain on resources and can affect the culture in many places.

It could also lead to suburbanisation and the creation of 'metropolitan villages', which are rural in location, but are no longer rural in character. These are often known as commuter towns such as Harpenden, from where people commute to London.

However this also has advantages for the area. It brings more money to the area. It also creates jobs as people are needed to run the new services which are created.

3 Urban Settlement

Question 3 examined contemporary urbanisation in LEDCs using a flow line map of internal migration flows to Cairo as the resource.

In **Q3ai** descriptions of the geographical pattern of flows were mostly comprehensive; candidates made good use of the data on the map and many were able to identify two different characteristics with reference to numbers and / or place names. Below is an example of a Level 2 response:

More migrants come from nearby areas (eg Sharkia – c 25,000) than further areas (Alexandria – c 10,000); and almost all are from populated areas (about a total of 6,000 are not). There are relatively large numbers of in-migrants from Asyut, Sohag and Qena along the Nile considering their distance from Cairo (c 300 km) – more than from Minya and Behara which are much closer.

And the following was awarded marks in Level 1:

The migration flows to Cairo mainly come from the north and south. Very few migrate from the east and west.

There were some very good responses to **Q3aii** in explanation of the pattern. The influence of the friction of distance, intervening opportunities and step migration were often convincingly related to specific named localities on the map. The following response was placed in Level 2:

Fewer people migrate to Cairo over long distances due to the idea of frictional distance. It is more difficult to reach Cairo from a long distance as travelling will take longer and be more expensive so fewer people will choose to migrate long distances eg Aswan, 5,000. People migrating long distances are also more likely to be diverted due to the law of intervening opportunity and may not reach Cairo but find a different destination eg Qena or Sohag. Few people come from sparsely populated areas because population density is low there anyway eg New Valley.

A more basic, Level 1, answer was:

The built up areas have more inhabitants than the rural areas. Also people in built up areas have greater access to transport mediums.

In **Q3b** many candidates were fully conversant with the issues involved including the relative importance of both natural increase and internal migration in the urbanisation process. Many, however, began their answer with a limited understanding of the term natural increase itself and then managed to give only one reason why it leads to urban growth in LEDCs. Overall this was probably the least well answered part of the paper. An example of a Level 2 response is given below:

In urban areas there is often a youthful population structure therefore there is a high number of births in urban areas so the population of the urban area grows. There is also typically a high death rate due to poor sanitation, food etc so there is rapid growth and youthful structure. In rural areas a high level of natural increase results from high birth rates. As a result there is increased pressure on the land and the land is often over cultivated, over cropped or over deforested; as a result people move to urban areas so urban areas grow. The use of marginal land due to population pressure also increases rural-urban migration increasing the size of the urban population. Poverty rates in rural areas cause people to move to urban areas to seek better lifestyle and healthcare.

The final part of this module, **Q3c**, was the second of the two extended sections requiring more detailed case study knowledge. Again this examined the familiar ground of the effects of rapid population growth on the urban environment in LEDCs. Mexico City was the overwhelming choice of most candidates; depth of knowledge and understanding varied from outstanding to weak and inaccurate. A wide variety of other urban areas were used to answer this question, including Rio de Janeiro, Sao Paulo, Cairo and Kolkata.

The link between rapid population growth and change in the urban environment was the thrust of this question. Some candidates saw this as an opportunity to describe current urban problems with no reference to change and with no link to rapid population growth, ie without full consideration to the actual question.

An example of a Level 3 response is given below, followed by two others which show further range in performance.

A

In Mexico City the population doubled every 15 years from 1940 to 1980 causing the urban area to grow from 370 km² in 1940 to 3700 km² at present. To create space for expansion Lake Texcoco was drained and was built on. This causes dust from the lake bed to blow around the city, reducing air quality. Rapid population growth has led to many industries developing – 40% of Mexico's industries and 50% of its manufacturing is based here – around 40,000 factories coupled with 4 million vehicles leads to appalling air pollution. The WHO declared that air quality was satisfactory on only 20 days a year and ozone levels are the highest in the world. These problems are compounded by frequent long lasting temperature inversions over the city which trap pollutants and create a photochemical smog. Water is also a problem – 60,000 litres per second are used, 82% of which is pumped from groundwater – which is falling as fast as 40cm per year. This has caused subsidence of up to 10m since 1940. 90% of waste water is untreated and this pollutes the ground water and surrounding area as is it used for irrigation. 8000 tons of waste a day and 2.5 million tons of hazardous waste a year are created – 25% of which is placed in open landfills around the city and the rest of which is dumped – further polluting the groundwater with toxic effluence from industries.

B

In Mexico City, Mexico, the population has grown from around 1 million in 1900 to around 15 million today. Most of the new migrants come from rural areas of Mexico and are therefore unused to urban living. Shanty town and squatter settlements have developed as there is huge demand for housing for the 2000 migrants who arrive each day. Areas like Chalco typify this with poor quality of living and awful pollution levels in the Gran Canale which acts as the city's main sewer. Pollution in the city is like smoking 60 cigarettes a day.

C

Mexico City has population of over eight million. Massive urbanisation has occurred due to the rise in population. There are many different zones to the city. The core zone has a population of six million. It is very economically prosperous, with low unemployment rates and has good housing.

Report on the Units taken in June 2007

In contrast to this there are the transition zones such as Chalco. These are impoverished areas. They tend to have low populations of around 120,000. In these areas there is a poor standard of living. Around 32% of the houses do not have toilets.

On the periphery of the city there are shanty towns. They have a very poor standard of living. This mainly due to their situation, for example, they have no piped water due to the fact they are isolated.

Overall this paper elicited a very wide range of marks. There was no significant difference in marks between the three main sections of population, rural settlement and urban settlement.

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General Comments

Some questions proved less accessible to Candidates than in January 2007. Candidates accessed the full range of marks – very able Candidates produced excellent, detailed papers but there were more weak papers as lower ability Candidates did not access the marks available. Overall, there was an uneven performance across the paper by many individual Candidates and across the whole cohort.

The objectives of Question 1 (a) and (b) were to describe the fieldwork techniques that were used to collect data and the strategies used to minimise risks during the Personal Investigation. Differentiation was determined by the level of detail for a range of techniques and strategies with exemplification from the Candidate's own Investigation.

The objective of Question 2 (a) and (b) were to interpret a map extract in order to identify factors that would need to be accounted for when comparing contrasting locations and to develop appropriate sampling methodology at these two locations. Discrimination lay in the ability to (a) discuss appropriate factors with reference to the resource and (b) present an appropriate and correctly described sampling methodology with reference to a sample size.

The objectives of Question 3 (a) and (b) were to interpret a map showing two different sampling schemes in order to choose an appropriate method of presenting a set of data and to show an understanding how the data was collected. Discrimination was determined by the ability to (a) describe and justify appropriate methods of representing a dataset; and (b) understand limitations in data sets.

Candidates are reminded to **read the question carefully** as credit was lost easily: in Question 1 for not referring to their own study; in Question 1 (a) describing the sampling methodology rather than how it was collected in the field and describing how data was analysed; in (b) describing how risks might have been minimised rather than what was done; in Question 2 (a) discussing more than two factors; in (b) omitting reference to sample size; and in Question 3 (a) discussing non spatial techniques such as Spearman's or a combined bar chart or discussing spatial techniques that could not work with the data supplies; in (b) not using the data in the resource which clearly stated how ethnicity had been collected.

Throughout the paper the use of good geographical terminology was a key discriminator. Candidates are also reminded that the written text should be easy to read and that the correct spelling should be used for key geographical terms.

Time management: Nearly all Candidates had time to attempt all parts of the paper.

Rubric errors: the only misinterpretation of the rubric was to suggest more than two factors Questions 2 (a), commonly made by middle to lower ability Candidates.

Candidates found the level of difficulty for this paper harder than for January 2007 and June 2006. As previously, differences in the content and quality of responses reflected differences in how Candidates are prepared for the Geographical Investigations paper.

For all questions the accepted types of response were flexible, with credit gained either by considering a few issues in detail or by looking more ideas in less depth.

Summary of the Outcomes for Questions 1, 2 and 3

Nearly all Candidates clearly understood the requirements of Questions 1 and 2, with Question 1 (a) and 1 (b) being the most easily understood. Questions 3 (a) and 3 (b) proved challenging. All questions discriminated between Candidates well.

Question 1 (a) responses were excellent overall. Most achieved at least mid Level 2 and many entered Level 3 and gained full marks. There was good reference to several aspects of the data collection techniques. Types of sampling methods were often incorrectly identified.

Question 1 (b) responses were excellent overall. Many achieved at least mid Level 2 and many entered Level 3 and gained full marks. Human and physical risks were well discussed; most risks related to data collection rather than the data itself. Risks were sometimes implied not specified.

Question 2 (a) responses were good overall, with most responses in Level 2, with some in Level 3 and few in Level 1. Although factors were stated and map references made by most Candidates, the implications for an investigation were often not explained fully. Poor map interpretation skills were often revealed.

Question 2 (b) responses were quite good overall; most were in Level 2, some were in Level 1 and a few in Level 3. Systematic sampling was the commonest choice. Specific sampling sizes were seldom suggested. Many were let down by a poor sketch diagram. Types of sampling methods were often incorrectly identified.

Question 3 (a) responses were poor overall. Few entered Level 3 and many stayed in Level 1. Many did not read the question carefully. There were some very good choropleth responses. There were many irrelevant responses, eg reference to Spearman's rank and reference to housing.

Question 3 (b) responses were quite poor overall, with most staying in Level 1 or reaching mid Level 2. Although many recognised data compatibility issues such as date of data collection and sampling method, a lot of Candidates misread the question and tried to explain (erroneously) how to determine the relationship.

Candidates were particularly able to apply their experiences of the Personal Investigation in answering Question 1, but were not necessarily able to deal with the less predictable nature of Questions 2 and 3, which were not based on their Personal Investigation, but required application of their knowledge of the investigation process: site selection and sampling methodology in Question 2 and understanding datasets in Question 3. As is typical of this type of examination, Candidates performed well at particular questions, thereby leading to fewer very good and very poor marks.

Detailed Comments on Individual Questions

Question 1 (a)

Indicative content: Several approaches to this question were acceptable. Instruments and procedures used for measurement of variables could be described, eg river channel: width, depth, velocity, wetted perimeter, particle size; sand dunes: height change, vegetation type, vegetation density, vegetation height, wind speed, soil temperature, air temperature, pH, soil moisture, footpath erosion; long shore drift: height of beach material either side of groynes; wind speed; wave height and speed; movement of pebbles; and urban climate: wind speed and direction, air temperature; traffic flows; pedestrian flows. The design of qualitative / visual assessment survey forms could be discussed, eg type of land use; type of housing; age of housing; quality of housing; quality of environment. A questionnaire is an important fieldwork

technique, eg how the questionnaire content was developed (type, number and content of questions). Valid recording and preparation techniques included the annotation of maps in the field; the use of field sketches and photographs; design of data collection tables for use in the field; the calibration of equipment.

Qualities of A grade Candidates: Fieldwork data collection techniques are described in detail. There is likely to be reference to more than two distinct techniques, eg relating to measurement/recording data or preparation in the field for data collection, or even a pilot study.

Other Comments

Many Candidates made very good use of their own investigation throughout the answer, including references to pilot studies, the use of sketch maps, data collection tables as well as the more obvious measurements made with field equipment, often giving specific details such as timings and information about where and how measurements were made with correctly named equipment. Most referred to several aspects of their data collection techniques. Appropriate diagrams added to the quality of answers. Candidates who had undertaken physical projects found it particularly easy to produce in depth responses. Many otherwise able Candidates could not distinguish between systematic (not the whole area or methodical or by strata) and stratified sampling or between random and pragmatic sampling. A large number were not aware that stratification alone does not describe a full sampling strategy. Weaker Candidates deviated from the question by describing how to analyse collected data in the laboratory and how to analyse and present data; they tended to lack specific geographic vocabulary, eg wind thingy for anemometer, which suggests that they were not properly briefed on the importance of fieldwork equipment; others discussed sampling in isolation from the data collection.

Question 1 (b)

Indicative content: Risks could be broadly categorised as human or physically related factors. Human factors include personal safety, eg students worked in pairs at all times in case of unwelcome approach by strangers or aggressive response by interviewees and they planned to call police if there was a problem; the attitude of people, eg they knocked on doors of houses before taking photographs in order to prevent owners' complaining about invasion of privacy; they planned to call police if there was a problem; vehicle related strategies required someone to look out for a vehicles coming along road. Physical factors included access to the location, eg look up the state of the tide before going to the location; the weather, eg they kept an eye on the weather conditions as it would affect the time taken to carry out the data collection and could affect the ability to collect the data and personal safety; mass movement, eg they wore hard hats due to the danger of rock falls; temperature, eg the danger of cold water currents was minimised by wearing warm waterproof clothing and footwear able to grip rocks; the possibility of contracting a disease was reduced, eg after heavy rain the river water carried the risk of Lyme's disease, therefore their clothing covered up their bodies. Discussion of "statistical risks" relating to sampling and data collection strategies were valid.

Qualities of A grade Candidates: Two or more risks are identified. Strategies used to minimise these risks are discussed in detail. There is likely to be reference to more than two distinct risks and accompanying strategies. Risks may be physical and/or human relating to bias, personal safety, the weather, group management.

Other Comments

As with (a) the outcomes suggest that Candidates were very aware of procedures involved in carrying out their investigation. Risks generally focussed on data collection rather than the data itself: however, this approach was not an impediment to gaining full marks. Both human and physical factors were discussed well, with most Candidates considering both, typically noting problems relating to the weather, accessibility, disease, personal safety from people and vehicles. Although some of the risks appeared somewhat exaggerated, these were essentially well described responses. A few centres do not seem to discuss risk assessment in detail with

the Candidates, even though it is part of the Specification. Some Candidates discussed the strategies leaving the risks as implicit rather than specified. Some weaker Candidates strayed into a discussion of how they might have minimised the risks rather than what they actually did.

Question 2 (a)

Indicative content: The factors may have been related to the impact on the strategy and the outcomes, eg areas were selected to meet the requirements of the investigation; the height above sea level: eg the accumulation of water at lower down (but not water rising from the reservoir); the type and/or density of the vegetation; aspect: eg drier and wetter slopes; type/density of vegetation; the position on the hill side (bottom, middle, top) affects the accumulation of water down slope; the type of vegetation (rough grassland, scrub, coniferous) affects surface runoff and infiltration; other characteristics affected the surface runoff.; the angle of slope: eg expect steeper to have faster infiltration; type/density of vegetation. In addition practical implications included the height above sea level and the position on the hill side affects accessibility with the equipment; the type of vegetation (rough grassland, scrub, coniferous) / loose rock / angle of slope affect the ease of walking over landscape; loose rock affects the ability to take measurements; and general access is determined by the distance from paths and roads.

Qualities of A grade Candidates: Two factors are clearly identified. The explanation for why they need to be taken into account is discussed in detail, referring to strategy, outcomes, practical implications, and even the need to control some variables to enable comparison. There are several appropriate references to the map resource. The vegetation at site A is likely to be correctly identified.

Other Comments

There was a good spread of responses, ranging from those who exemplified their chosen factors well, to those who produced rambling responses that required a lot of “unpicking” to ascertain two factors and finally some made little or no reference to the map. Although factors were stated and map references made by most Candidates, the implications for an investigation were often not explained fully. Only the best Candidates actually made the link between the differences between the sites and the impact on the investigation. Responses typically considered accessibility, risk and being able to collect data in a day; the most common physical impacts were vegetation type, aspect, steepness and height above sea level. More mature responses often referred to the need to control the number of variables collected in order to enable a fair comparison between the two slopes. A worrying number failed to distinguish between a river and a reservoir; many erroneously identified area A as being sand and shingle, denoting a lack of basic geographical knowledge; and many were confused about the different implications of gradient and altitude. Quite a few referred to three or more factors.

Question 2 (b)

Indicative content: The sampling methodology could be a systematic grid along and up the slope which would ensure full coverage of all parts of slope, whereas random would not; or it could be stratified according to vegetation type or height above sea level; pragmatic sampling could be used in order to manage issues such as accessibility, safety and site characteristics. The sample size should be appropriate for the chosen type of sampling, so that it would be possible to gain full coverage of all parts of slope within the time and resource constraints particularly human resources. It could be defined in terms the frequency of sampling along a transect or belt. Credit was given for the rejection of alternative methods and sample sizes. The sketch diagram mainly contributes to the description of the sampling methodology.

Qualities of A grade Candidates: The description and justification of the sampling methodology and sample size is appropriate, fairly well balanced and with detail. The sketch diagram supports the text well. Suggested sample size is appropriate. The chosen sampling methodology is correctly described.

Other Comments

A number of good responses selected a technique having rejected alternatives (this was not a required approach to the question). Most opted for systematic sampling and suggested reasonable intervals for data collection. Justification was often less well addressed than the description of systematic sampling. Many chose pragmatic sampling on the sensible basis that the terrain would be difficult to sample from in a systematic manner. Specific sample sizes were rarely given, although it was often implied by suggesting the sampling interval. Quite a few Candidates confused horizontal distances with vertical changes in height – forgetting that GPS would be essential to sample change of height. Many Candidates failed to produce clear annotated illustrations of their chosen sampling technique. As with Question 1(a) many Candidates did not know the correct name for their chosen sampling technique. Weaker Candidates hedged their bets and did not finally select one technique and reject the alternatives they had listed. Other less able Candidates deviated into a description of how to collect the data in the field; a few even strayed into data analysis.

Question 3 (a)

Indicative content: An appropriate technique had to show or be able to show the spatial distribution of the ethnicity data supplied in the resource without reference to different types of ethnicity or housing. Preferably the technique chosen used the map in order to show distribution. A choropleth map is ideal as it can be interpreted to make visual assessment of differences between wards, it is easy to draw and it is appropriate for data that represents a whole ward with no indication of distribution within each ward; and wide range of data can be grouped into bands. A pie chart or a proportional circle or a proportional bar in each ward can be used to show the ethnic composition (according to the ethnic/non-ethnic proportions): from these graphs it is possible to make a visual assessment of differences between the wards; they are easy to draw; and they will fit into ward boundaries on map easily. Mann-Whitney was only acceptable if it was explained how differences between groups of wards could be analysed by dividing the dataset into two groups (eg north versus south) and then conducting the test.

Qualities of A grade Candidates: The description and justification of an appropriate technique to show spatial distribution of ethnicity is given in detail with reference to locating the given data on a map. The solution is most likely to be a choropleth map or pie or bar charts or proportional circles located in each ward. The technique does not incorporate housing.

Other Comments

As in many previous sessions Question 3 (a) required the Candidate to select and justify a suitable method of presenting a set of data. However, overall the responses were poor, with many Candidates gaining no marks. Candidates that understood spatial distribution gave very clear descriptions of mapping techniques (typically choropleth maps but also dot maps or a proportional circle in each ward), often accompanied by well annotated sketches. Description was generally better than justification, but both were nearly always addressed. The choropleth descriptions usually included sensible groupings and shading systems. Choropleth is seldom spelled correctly. Unfortunately, many were unable to recognise and understand the concept of spatial distribution, a basic geographical concept. Many did not attempt the question. Many did not read the question properly, which did not require discussion of housing or how to sample data or a discussion of how the data had been sampled. The question does not refer to relationships, so references to Spearman's Rank were irrelevant. The application of Mann-Whitney was only relevant if it demonstrated how the data could be divided into two distinct areas to test spatial difference. A single pie or bar chart does not show spatial distribution – however, individual bars located on a map do show spatial distribution.

Question 3 (b)

Indicative content: The two datasets are not suitable to conduct a statistical test of association as they have very different characteristics. The ethnicity is given at ward level, is a set of averages for each ward area, is a 100% sample (although in reality it is likely to be less), it is composed of data from all parts of each ward, it is collected by a professional organisation and it was collected in 2001. In contrast the housing data is made up of just four transects, it is intermittent data (every 1 km) from each transect, it is much less than a 100% sample, it only samples along main roads, it is only collected from one side of each road and there are a different number of transects and sampling points in each ward, and lastly it was collected in 2006. This means that a single graphical technique to examine the relationship has to be used. The answer can also refer to a discussion of geographical theory regarding these two variables. The responses can refer to each variable separately.

Qualities of A grade Candidates: The requirements for having appropriate data to examine a relationship between two variables are clearly understood, eg both variables must be quantitative and at least ordinal. Difficulties with the collected data are discussed in detail. The answer is likely to consider geographical theory or practical issues relating to the two variables. At least part of the answer does not discuss housing and the census separately.

Other Comments

Question 3 (b) required the Candidate to consider why data could not be used to test the relationship between two sets of data. The Candidate needed to interpret the information given the nature of the datasets and how they were collected – an important part of AS investigations. As testing a relationship is commonly used in AS investigations, the criteria for acceptable data should be understood. Most responses were in Level 2 with some in Level 1 and few in Level 3. Candidates that understood enquiry and analytical skills were able to access the question and produced some sound geographical arguments (eg related to quantitative versus qualitative data; data spread across the area; timing of data collection; applying geographical theory to suggest that ethnic groups are not tied to particular housing types), but many were unable to use the evidence to interpret what the data sets actually represented. Quite a few did not read the question properly as they described how, for example, Spearman's Rank could be used (although a good number did note why it was not a suitable technique). Weaker Candidates often erroneously responded in terms of considering how they would collect the data; they did not consider the information which stated that the data had already been collected, therefore the Census data could only be wrong in the sense that people might have given erroneous ethnic information on their Census form.

General Comments

Overall Standard: As in previous years the majority of Candidates entered Level 3, with very few remaining in Level 1 or 2. Few Reports did not represent all five stages – although in some cases the headings varied from the normal format or there were none at all. Candidates demonstrated substantial development compared to GCSE, particularly in the analysis and evaluation of outcomes. Most Candidates from most Centres presented clear and logically structured Reports. The quality of written English was generally high.

As is expected for AS Level, nearly all Reports were guided by the Centre or a field studies centre with group collection of data. There were considerable differences in the approach adopted by Centres, some of which were more successful than others. Whilst there is evidence of good practice at many Centres in terms of organising data collection and teaching methods, the necessarily heavily teacher directed approach offers less scope – but should not preclude – independent initiatives by students. However, an important role of this AS Report is to provide the basis for independent research at A2.

Content: There was a balance between physical and human investigation topics, encompassing a wide array of subjects and considerable field work activity. Due to the teacher led approach differentiation was achieved by assessing the Candidate's skill in manipulating the data collected. Candidates at some Centres produced far too many figures/graphs/photographs. Others included lengthy (20 pages) Annexes, often with material downloaded from the internet.

The essence of a good report was relevance and quality not quantity. It was organised and presented well. It examined no more than two hypotheses, which could be discussed in depth, rather than superficial description of numerous variables. Overall, the stated hypotheses were relevant and reasonably feasible for AS Candidates to achieve. The data collected and analysis related to the question that has been identified at the beginning of the Report. This included reference to any models and theories that had been presented.

When students were involved in a large group data collection exercise for a large number of variables, it was tempting to write too much – particularly irrelevant discussion of variables that were not relevant to individual Candidate hypotheses. Those who collected data for only a limited number of variables seemed to fare much better.

Supporting figures: As with the textual content, a few appropriate figures gained as much credit as many pages of repetitive poorly conceived and irrelevant figures. Thus, it was important for the reader to compare like for like variables on the same page – with the same scales on axes for graphs, eg for a river study the cross sections should all be on the same page; for a study of change in urban characteristics, pie charts or bar charts are best located on a map to demonstrate spatial variation. There was rarely justification for presenting the same data in several different ways, as this distracts the reader and does not assist with comparison between data sets.

Length of Report: Many Candidates did not achieve their potential: this was often because they did come to terms with the need to be concise. Candidates that exceeded the word limit were penalised and could not enter Level 4, as stated in the Specification. A substantial number of Candidates – particularly at certain Centres – vastly underestimated the word count.

Comments on Administration and Presentation

1) Rubric Error: Length of Report

The stated length word count was often substantially above 1,000 words, and there were many more cases where the stated word count was much less than the actual word count. This was due to miscounting or the use of continuous text in tables; annotations with continuous text content; or scanned diagrams with text that was an integral part of the Report that had not been included in the word count. Over length Reports did not enter Level 4 (13-15 marks). At some Centres few or no Candidates had conducted a word count and thus arbitrarily wrote 1,000 words in the appropriate space or did not fill it out at all. **To be fair to all Candidates the word count should be adhered to and an accurate word count supplied.** It should also be noted that concise writing is an important skill.

2) Format

- (a) Most Candidates successfully used the 5 stages format suggested in the Specification: Identifying a Question; Development of a Strategy; Collection of Data; Analysis, Interpretation and Evaluation; and Presentation of a Summary. Some used alternative headings which were recognisable as the 5 stages (eg combining the second and third stages; placing the Summary in stage 4), as were those using an essay style approach without headings although the structure of these Reports was often harder to understand.
- (b) Each Centre is required to provide one Authentication Sheet (CCS160) signed and dated by all relevant members of staff.
- (c) Each Candidate is required to provide a Coursework Cover Sheet (CCS202) signed and dated by the Candidate and a member of staff. A true word count – not an estimate – must be provided. The current CCS202 can be downloaded from the OCR Website.

3) Presentation

- (a) The preferred method of presenting the Report is for it to be **held together with a treasury tag**. There is no need for folders, wallets, clip files, paper clips, staples or plastic envelopes which all cause administrative problems and are often less easy to read. It is also hard to manage loose sheets and A3 sheets folded back and captured by the treasury tag. The inclusion of numerous field data collection sheets is detrimental to the Report – a summary of the outcomes should be neatly reproduced in the Report itself together with a template for data collection. Similarly, lengthy Annexes, often containing data downloaded from the internet, or handed out by Field Studies Centres as background information, are not required: if they contain material to be read by the examiner, it should be given in the five stages and be counted within the word limit.
- (b) A good **standard** of presentation is demonstrated as follows:
 - Easy to read text which has been **proof read**. [Handwritten reports can be just as good as badly proof read typed ones!]
 - **Continuous text** is used.
 - The sheets are in the **order** in which they should be read.
 - **Page numbering** is used.
 - Figures, photographs, graphs and tables are **cross-referenced** at the appropriate place in the text.
 - However, good presentation needs to be accompanied by good geographical content!

(c) **Maps, figures, tables, photographs and graphs** should:

- Provide evidence of the data collected.
- Specifically relate to the question and hypotheses chosen for investigation.
- Be neatly presented (eg appropriate shading graded to match “high” to “low”, using rulers) and given appropriate titles and labels.
- Be numbered so that they can be cross referenced with the text.
- Be relevant to the investigation, eg Field Studies Centres give Candidates a lot of generic information and this should be customised.
- Show an awareness of appropriate methods of representing data. For example:
 - A large scale map extract – with the scale and key given – to show the location of the investigation. This map or a larger scale one will show the location of sampling sites. A map of the UK is usually meaningless in the context of these investigations. The map should be referred to in the text. The quality of maps – a cornerstone of good geographical reporting – was disappointing. The absence of maps in numerous Reports was noticeable. Conversely, four location maps at differing scales (often without an identified scale) indicate limited understanding of the purpose of maps.
 - Appropriately annotated photographs.
 - One method is used to present a piece of information, eg bar chart and pie chart should not both be used to present the same data.
 - The same type of graph is used to present the same variables at two different sites.
 - Graphs of variables that need like for like comparison are placed on the same page with the same scales on both axes, eg all the cross sections of a river study.
 - Axes are drawn (the independent variable is on the x axis) and labelled correctly.
 - Line graphs should not purport to show a relationship where it cannot exist, eg if there are 8 randomly selected soil samples in each of two woodlands, sample 1 in wood A cannot be compared with sample 1 in wood B. However, if a systematic line transect is taken every 25 metres into each of these woods, comparing positions along the transects is acceptable.

Overall Qualities of ‘A’ and ‘E’ Thresholds

A grade: A complete well structured geographical investigation, with appropriate use of both primary and secondary data. The work is clearly expressed with correct use of geographical terminology and will be almost entirely free of errors in all sections. It should not exceed 1,000 words and may be less than 1,000 words. ‘A’ grade Candidates typically select two well defined hypotheses, enabling depth of discussion to take place, rather than superficial analysis of many hypotheses. Alternatively, a single hypothesis is tested, eg “*there is increasing species diversity across a sand dune*” and one or two additional variables are collected to support the findings. These Candidates do not include irrelevant material and the sections are balanced, eg Identifying a Question and Data Collection are too long at the expense of Analysis, Interpretation and Evaluation and a scant Presentation of a Summary. There is a clear understanding of the functions of figures etc to provide evidence of data collected, to relate to the hypotheses chosen for the investigation and to be neatly presented and appropriately labelled. There is an awareness of the appropriate methods of representing data.

E grade: A submission that is not a complete geographical investigation, with poor or no use of primary and/or secondary data. The work is very poorly expressed, contains errors and there is very little correct use of geographical terminology. Much of the work may not be correct. At the

'E' threshold the Report is incomplete, ie one stage of the Report is not identifiable from the text. Most commonly the Presentation of a Summary is missing and the Report presented may otherwise demonstrate C/D qualities. It is also possible that the material presented contains numerous errors throughout, eg there are numerous poorly defined hypotheses, with little scope for depth of discussion; irrelevant material and graphs are included and the sections are imbalanced, typically Identifying a Question and Data Collection are too long at the expense of Analysis, Interpretation and Evaluation (the explanation lacking depth and not necessarily relating specifically to the original question) and there is a scant Presentation of a Summary. There is limited understanding that figures etc relate to the hypotheses chosen for the investigation and need to be neatly presented and appropriately labelled. There is some awareness of appropriate methods for representing data.

Comments on the Five Stages of the Report

The subject matter of the Reports was nearly always appropriate, since the Candidates were advised by their Centre. Physical topics such as psammomeres and river studies tended to be both popular and executed successfully. Candidates are reminded that in a 1,000 word Report **there is no room for irrelevance or repetition**. A reasonable balance between the sections is necessary – a lengthy description of how to calculate a statistical test leaves little room for evaluation. Reports must clearly relate to and refer to a specific study location.

Identifying a Question

Indicative content: Succinct contextual information (including a relevant labelled map), a clear question and correct supporting hypotheses or aims – there is no need for more than two hypotheses. The null hypothesis states that no relationship is expected between two variables, whilst the alternative hypothesis states that a relationship is expected, and indicates the direction/nature of this expected relationship.

Qualities of A grade Candidates: Succinct contextual information (including a relevant labelled map), a clear question and correct supporting hypotheses or aims. The null hypothesis stated that no relationship was expected between two variables, whilst the alternative hypothesis stated that a relationship was expected, and indicated the direction/nature of this expected relationship. Two or three hypotheses were investigated.

Other Comments: This section was generally well presented, although it varied considerably in length. Almost everyone provided a hypothesis or clear question that they intended to test. Some better Candidates led into their question from theory, whilst others spent far too long on the theoretical aspects at the expense of later sections.

A substantial number of Level 3 Candidates used too many variables leading to substantially over length Reports or rather meaningless generalised Reports within the word limit. Theory is often reproduced from a book without noting its relevance to the study being undertaken.

Weaker Candidates: There was lengthy historical detail or an explanation of why the topic was chosen or a simple statement that the Candidate was interested in a topic and hoped to do well. Hypotheses were not clearly related to the question *or* their purpose was not understood well *or* they had no geographical substance; stated hypotheses did not correspond with the relationships considered in analysis – *or* even with the data collected. Alternatively numerous (eg 6 was not uncommon) hypotheses were proposed which could not be analysed in depth and often lead to an imbalanced Report with a lengthy Collection of Data section and limited Analysis, Interpretation and Evaluation. Some theory, for instance on urban models or settlement hierarchies, appeared but was only vaguely referred in the analysis section. The stage was highly imbalanced with little (or no) contextual information *or* a lengthy description of the context. The map, if any, was inappropriate and poorly labelled.

Development of a Strategy

Indicative content: The reason for selecting the investigation location is given. Background theory, such as a model, is presented and there may be justification for the expected outcomes in this section (alternatively it may be given in the Analysis, Interpretation and Evaluation stage). Risk assessment relevant to the site is desirable. Practical and theoretical factors inform the organisation of data collection materials. Not all these points are needed to gain full marks.

Qualities of A grade Candidates: The expected outcomes were justified in terms of theory, eg the discharge increases downstream due to increased inputs to rivers towards the estuary. The risk assessment specifically related to the study site and was realistic. Preparation for sampling and data collection was discussed and justified in the light of practical and theoretical considerations, eg devising data collection forms; selecting appropriate equipment; identifying constraints on where data collection could take place.

Other Comments: Many Candidates referred to risk assessment. However, overall this stage was often weak compared to the rest of the Report. Many Candidates commented only vaguely, or not at all, on their sampling strategies, or how their strategy for data collection was tailored to the available resources (eg manpower, time) or sampling strategy was not understood. **Weaker Candidates** overlapped this section with the next stage. There was an excessive description of problems arising from risk assessment, but with no suitable measures to combat problems. There was no reference to geographical theories or how the data collection was organised. Words were often wasted by discussing rejected strategies. Statements such as “*I wanted to collect as much different data as possible*” failed to consider how this could be managed in a 1,000 word Report.

Collection of Data

Indicative content: The sites/transects for measurement are selected and the type of sampling used (pragmatic, random, systematic, stratified) is defined. The sample size for each area, belt or transect and each site on is given and is appropriate, eg a few variables collected at 10 sites gives more meaningful results than many variables at 4 sites. The data to be collected is relevant to the aims/hypotheses: when groups collect many variables, individual Candidates should only refer to those relevant to their chosen hypotheses both in data collection and analysis. The method for collecting the data in the field is described. There is a summary of questionnaires and assessment forms used or examples can be attached.

Qualities of A grade Candidates: Not too long was spent on methods of data collection apart from the discussion of sampling issues. This was a well balanced section: the sampling location was identified; the type of sampling was clearly understood and described. The data to be collected was relevant to the aims/hypotheses. There was a concise description of how data was collected in the field. The accuracy of data collected was considered. Data was represented in an appropriate form by the use of, eg tables, graphs, charts, maps, sketch maps.

Other Comments: Questionnaires were often undertaken with very few people being interviewed. This section tends to be long at the expense of the Analysis, Interpretation and Evaluation. Where Centres had sampled numerous variables, irrelevant data was often described and presented in tables, but then not used. Conversely, most Candidates had no problem collecting numerical data, but not all stated it. Field sketches where included, were generally poor. More appropriate annotation of graphs and photographs was evident, eg to identify anomalies. Photos included were mostly relevant. Environmental quality testing was often present but not described: a copy of the actual survey form is useful; conversely, inclusion of all the completed survey forms is not required). **Weaker Candidates** either wrote in great detail about how data was collected (up to half of the Report) or provided almost no description at all or gave a confused description; they tended to discuss more variables than was relevant for the stated aim/hypotheses. Candidates were not aware of appropriate techniques, eg line graphs rather than scattergraphs; inappropriate use of pie charts.

Analysis, Interpretation and Evaluation

Indicative content: For each part of this stage it is clear which hypothesis or aim is being discussed. The outcomes are summarised and relationships, if any, are explored using secondary data and field evidence. All the data that has been collected is referred to. Statistical tests may be applied and the application of models to the data collected is referred to. Appropriate formulae are used and the units of measurement are given. The reasons for geographical theory not applying to the investigation are considered.

Qualities of A grade Candidates: The text was clear, relevant and related to all the data collected. There was a good attempt to explain relationships and anomalies – possibly with the use of field notes and clearly referenced secondary evidence. There was numerical evidence of how data had been analysed using descriptive statistics and/or a statistical test: appropriate formulae were used; the calculations were correct (eg in Spearman's Rank Correlation the two variables are ranked in the same direction); and confidence levels were tested (where appropriate) and interpreted. There was a clear discussion of the extent to which geographical theory was represented at the site. Analysis may have been supported by using annotations on the data collected and photographs. Where appropriate these candidates successfully compared secondary data, eg derived from the 2001 Census, with their own primary data.

Other Comments: The quality of this section was highly variable. This section often set the better Candidates apart from the weaker ones, however, since many better Candidates (offering high quality discussion of their results) were over length, the differences between good and weaker Candidates was not always reflected in the final mark. The discussion of anomalies has improved, although **weaker Candidates** tended to blame "anomalous data" for low Spearman's rank correlation coefficients, without considering other reasons. Analysis sections often had very little explanatory text to accompany data from graphs; this meant that a cursory comment was made for each graph or the outcome of statistical testing but the points were not drawn together until the Summary stage.

Statistical testing: Whilst most Candidates used some method of statistical testing, many regarded it as a hurdle to be jumped rather than as a way of enhancing their understanding of the outcomes. Many Candidates still used Spearman's with a very low sample size. Too often Candidates used a computer to do the calculations and did not understand the result – or did not even attempt to analyse the results. Often significance testing was not used and the significance tables were also not necessarily clearly understood.

Weaker Candidates gave a lengthy description of the outcomes, whilst relationships and anomalies were not noted or explained or simply ascribed to "inaccurate data collection". Interpretation consisted of poorly expressed, generalised statements and there was no reference to geographical theory – particularly models noted earlier in the Report. The meaning of some variables was not understood, eg confusing altitude and gradient. Statistical tests were incomplete. Mann-Whitney (difference between data sets) was confused with Spearman (association between data sets). [It should be noted that Mann-Whitney is used to determine whether two sets of data come from the same population – it does not decide whether the samples are "fair."] Computational errors were common, eg the formula for Spearman omits "1-.." or the two variables were not ranked in the same direction. Candidates simply stated that the study went well and outcomes were as predicted – even when looking at graphs presented earlier would have shown that the outcomes were not as predicted. Land use models were dealt with in a summary manner if at all. Those who used measures of central tendency were seldom able to demonstrate their relevance to the chosen hypotheses.

Presentation of a Summary

Indicative content: The Summary highlights the main outcomes of the investigation in relation to the aims, together with a short explanation of these outcomes and their limitations, leading to suggestions for improving a project.

Qualities of A grade Candidates: The Summary did not repeat information verbatim from earlier stages. There was reference to hypothesis(es) and/or theory or theoretical models which had been explained in the earlier sections. A clear summary of the outcomes and highlights limitations of the investigation was given. Viable suggestions were made for improving the project if it were to be repeated.

Other Comments: This is often the weakest part of the Report. Candidates added analysis and evaluation that had not been discussed in earlier stages. Evaluative statements often lacked depth, especially with regard to the way data was collected. Alternatively, the Summary consisted of only two or three lines with little substance – often due to the constraints of the word count, the preceding sections being too long. Another weak approach was to restate what was expected rather than the actual findings. In general, any evaluation was rather vague, eg “*More samples could have been taken and at different times of the year or on different days*” and was often focused solely on how the study could be extended.

General Comments

Summer 2007 was the second session at which the number of questions in each Option was two. It would seem that this has not impacted harshly on the performance of candidates, as the trends observed by the very experienced examining team were long established ones.

The candidates were spread widely across the mark range and, although fewer very weak scripts were present, it is also disappointing that really outstanding scripts struggle to emerge. Such examples of real excellence are characterised by scoring at Level 3 across all four Assessment Objectives in both sub-parts (a) and (b). Plenty of candidates reach the top Level in one or two areas but by means of a more intense engagement with the 'geography' of a topic, greater numbers would readily attain the highest scores.

The following points represent a synthesis of the generic findings of the examining team from their reading of the 3 000 scripts submitted this June.

- Scripts allocated to the upper quartile were characterised by effective planning that ensured knowledge and understanding were explicitly applied to the particular question set.
- The quality of prose is a key element in determining how successful the response is in answering the question.
- Effective use of sketch maps and diagrams can significantly enhance the communication of knowledge and understanding.
- The experience of direct observation from field-work can really aid young geographers when writing formal essay responses.

One point raised in the report on the January session and worthy of repetition here, as it highlights a widespread concern amongst examiners, concerns the variability in quality of an essay between sub-part (a) and (b). A significant number of scripts contain answers with one encouraging sub-part but an accompanying very disappointing sub-part. Questions 5 and 18 were all too commonly answered in this way, the details of which are given in the comments for these particular Options. Candidates should be encouraged to spend time planning both sub-parts of a question, before embarking on its writing, so that a candidate would realise when one sub-part was much stronger than its partner.

A final generic point needs emphasising before more specific comments are made and it is one stressed before both in reports of this nature and at Inset. It concerns the quality of 'place' in candidates' responses. All too rarely do examiners read responses where a candidate repeatedly offers convincing knowledge and understanding of real world examples. This is true both of the more substantive case study and the shorter reference to an appropriate example. References to this latter point can be found in the comments specific to individual Options.

Comments on Individual Questions

Option 1: Coastal Environments

- 1) This very popular question drew some most effective responses but was also the best example of a situation where candidates failed to read the question with sufficient care. That at least is the interpretation examiners wish to put on what they read, as the alternative, that students, just a short time away from studying in higher education, are unable to distinguish between plan and profile, is most worrying! The frequent sketching of cliff cross-sections in this sub-part meant that considerable numbers of quite knowledgeable students ended up with disappointingly low marks. Those who were secure in their understanding of the term 'plan' gave effective descriptions of the relationships between lithology and structure and the shape of the coast as viewed from above.

Discordant and concordant coastlines were known by many who supported their answers with sketch maps, usually of the Dorset coastline. Here was an example of where a more intense engagement with the 'geography' of the topic reaped dividends in terms of the precise relationship between accurately named geology and landform, bay, cove and headland for example. Candidates should be reminded that for their answers to convince, factual elements need to be correct. Only the most committed geographers amongst the entry extended their response into smaller scale features of a coastline's plan, geos for example.

Responses to sub-part (b) tended to resort to a catalogue of the factors influencing cliff erosion with minimal discussion of how these might interact in different ways in different locations to give different rates of retreat. The interesting and potentially most rewarding discussion concerning the balance between marine and sub-aerial processes was a discussion only entered into with conviction by relatively few candidates. Those who did, and were able to offer exemplification, tended to reach Level 3 with ease as they usually included variations in geology as part of their response. One perennial plea from examiners is for students at A2 level to have some knowledge and understanding of the variety of rocks within the limestone family. This is perhaps something that extension activities within a scheme of work might be able to incorporate. The weaker candidates took this sub-part as an opportunity to 'write all they could remember about' coastal management techniques. While such material is appropriate, when it was the primary focus of a response, it tended to result in an unconvincing analysis. However, there were some responses that employed material clearly observed on fieldwork to great effect. Whether or not this was in one of the more traditional settings such as Dorset, East Yorkshire or Pembrokeshire, or lesser known places, such experiences invariably led candidates to write with greater authority and conviction.

- 2) There were many answers to this question that offered both an encouraging focus as well as suitable exemplar material. In the first sub-part there were good numbers of candidates offering descriptions of a range of human activities that impact on coastal systems. Aspects of erosion, such as the effects of dredging and recreational pressures, and the impact of farming in terms of water quality and land reclamation were common. Where some candidates failed to convince was their focus, to the exclusion of everything else, on techniques of coastal defence. This carried their response so far but left it short of diversity that would make it a more complete description. The better responses included consideration of positive impacts and there were some who successfully linked concerns over anthropogenic global warming to rising sea levels and the impact that this is having on coastal systems.

Examiners were concerned by responses to this question in that large numbers of candidates appeared to choose it solely on the basis of sand dune studies and so offered less secure responses in sub-part (a) and indeed gave only limited responses to (b).

Sub-part (b) shifted the focus to the role of vegetation in the development of coastal landforms. The more convincing responses gave comprehensive and authoritative accounts of sand dune and salt marsh formation. Examiners were encouraged to read accounts from students who knew the names of key species and their specific roles in the accumulation of sediment. Less secure responses tended not to link explicitly the reduction in wind / water velocities with the deposition of small calibre particles. Only the more considered answers included secure material on dune slack vegetation. It was encouraging to read good numbers of scripts containing references to the positive and negative effects of vegetation on cliffs, an area where suitable links with elements of the AS Physical Core can emerge.

Fluvial Environments

- 3) Descriptions of water flows in river channels tended to be secure concerning different cross-sections but less sure in the context of plan. Responses to this first sub-part often included helpful diagrams, even with an element of 3-D. It was encouraging to read thoughtful comments from the more assured candidates that in the real world laminar rarely occurs but that it is a useful theoretical pattern to work from. The presence of eddying was perhaps the least well described and many of the descriptions of turbulent flow would have been strengthened with the addition of more detail such as eddies and the circular motion found when pot-holes are present.

Amongst responses to the second sub-part there were some splendid annotated diagrams which most effectively captured the essence of the relationship between riffle and pool sequences and meander development. Those who chose not to employ diagrams frequently struggled to compose the quality of prose required to explain meander development. Most highlighted the significance of helicoidal flow and the sinuous path of high energy water within the channel.

- 4) Variations in a river's width, depth and gradient were, by and large, soundly described. Some Centres had clearly spent some very effective time in the field introducing such changes along the course of a river to their candidates and giving them opportunities for practical investigation. A mark of a response that had clearly stepped up to A2 level was the inclusion of local variations in for example depth, such as the changes associated with pool and riffle sequences, the presence of rapids and waterfalls or the effect a lake has on the overall pattern. Convincing answers often contained references to braiding in a river's lower course.

Sub-part (b) was also tackled effectively by a good number of candidates especially when they took changing energy levels as their key idea and related this to fluvial erosion, transportation and deposition. Most candidates included here comments relating sediment calibre to velocity but did not always make the link with changing water levels. In this context examiners were particularly disappointed not to read more discussion about the significance of bankfull discharge and also highest flow, which are not the same thing.

Glacial and Periglacial Environments

- 5) This question exemplifies the observation noted by all the examining team of considerable variation in quality of response between sub-parts. In the particular context of this question, almost without exception, candidates performed significantly better in sub-part (b) than in (a).

Despite landscapes produced by ice sheets and glacial scour being explicitly stated in the Specification, very few candidates wrote convincingly in (a). In other circumstances their determination not to stray from a topic, valley glaciation here, would have been admirable, but it was the wrong focus. This is all the more disappointing given the surge of material becoming available as a result of increased attention paid to ice sheet behaviour in the light of growing concern about global climate change.

It was clear that the attraction of responding to the dramatic landscape depicted in the OS map extract was overwhelming to many candidates. In general their responses were convincing in description of landscape features, corries being the favourite, and secure in explanation of the role of ice in their production. Some effective annotated diagrams supported and enhanced answers. The best responses related knowledge and understanding directly to the map extract, paying close attention to the scale of particular features and their particular orientation. The main disappointment registered by the examining team was the absence of a clear acknowledgement that ice accumulated in and

modified a pre-existing landscape and that peri-glacial conditions immediately before and after glaciation played an important role in producing the landscape features of this part of the Grampians.

- 6) The second question in this Option was strongly focussed on process, a point that when recognised and adhered to by a candidate invariably led to the production of a high quality response. In sub-part (a), many scripts contained encouraging descriptions of mass balance, with the majority of answers making effective use of diagrams, although the quality of labelling left something to be desired in some cases. The least noted input was that of avalanching and its presence was one of the indicators of a higher Level answer. A great deal was made in some responses of seasonal advance and retreat but in too many cases this was all that the response consisted of. As with comments regarding ice sheets above, the quality and quantity of research available to A level students regarding glacier behaviour has been greatly increased by the current concern regarding global climate change. Sub-part (b) continued the process theme, focussing on the ability of glaciers both to erode and deposit. One of the common issues examiners faced was the cavalier way candidates used terms interchangeably, notably weathering and erosion! There was a tendency here for candidates to adopt a 'write all I can remember about' approach and so a catalogue of landforms was generated. It was disappointing that too many candidates did not recognise that glaciers deposit throughout their length so that many corries contain glacial sediments and that sub-glacial channels resulting from erosional processes are found in lowland zones.

Hot arid and semi-arid Environments

- 7) Descriptions of the ways in which hot arid and semi-arid environments can be defined generally fell into one of two categories, those who knew the ways and those who did not. The more secure responses were well versed in describing the water balance and often quoted Thornthwaite's general aridity index. A good many candidates were in too much of a hurry to offer explanation for the location of arid environments, a topic that was the focus of sub-part (b).

The discriminating factor in sub-part (b) tended to be the quality of detail and accuracy when explaining the distribution of arid environments. Towards the upper end of the range of responses were those who not only knew the theory behind the factors but also set it very firmly in a spatial context. Such answers were frequently accompanied by appropriate and helpful sketch maps and diagrams. The very best responses made the thoughtful observation that most deserts are the product of a combination of factors.

- 8) This was the less popular of the two questions and most of those choosing it struggled to offer convincing responses. Many were insecure regarding their definition of land degradation, tending to ignore the key element of human influence. Their focus was all too often on erosional processes in general and, while some of this material was relevant, it could have been made more so had a link been established with human activities. Some scripts stood out due to their detailed exemplification and this was a particular observation when considering sub-part (b). Many answers made little or no effort to compare one location with another, for example, arid environments under greater population pressure than others or a MEDC location as compared with one from a LEDC.

Applied Climatology

Hardly any candidates chose to offer responses to these questions, 9 and 10, so comments that have some general application cannot be made.

Agriculture and Food

- 11) This question attracted the majority of candidates tackling this Option. Many of these appreciated the nature of the influences exerted by physical environments, such as that shown on the Ordnance Survey map extract, for example, steep slopes, high rainfall and thin soils. Where some candidates failed to make the most of their material was in the lack of explicit mention of the influence of factors '... on agricultural systems.' For example, responses that made clear the link between steep slopes, the restriction on machinery and the implications for arable farming, were much more convincing than those simply stating the prevalence of steep slopes and the limitations this places on mechanisation. It was disappointing to read rather too many scripts referring to the advantages of the lake for irrigation.

Modifications of climate and soils undertaken by farmers were generally well known and frequently led to some effective answers. Most responses were wide ranging in their approach and included some helpful exemplification. The area examiners hoped would be more securely explained was the specific impacts of particular modifications. Simply stating that greenhouses / irrigation / fertiliser can be used without linking directly to an increase in agricultural production was not as effective as, for example, making points about changes in micro-climates within greenhouses or poly-tunnels. One common error was to spend several lines describing impacts of the Green Revolution, such as high yielding varieties, which are not modifications of the physical environment but rather adaptations to it.

- 12) The relatively small number of candidates tackling the second question in the Option tended to offer less than convincing responses. Understanding of the basic farming system with its direct and indirect inputs was shaky, fertiliser, for example, was frequently described as being direct. It was disappointing that so few recognised the fundamental input of solar radiation. There was considerable opportunity for descriptions as to how this varies spatially. Given current thinking about energy use, it was disappointing that so many candidates' notion of sustainability seemed improvised and not particularly rigorous. Sustainability could have been discussed as physical, economic or social but rarely did a response offer more than a rather superficial discussion.

Manufacturing Industry: Location, Change and Environmental Impact

The numbers offering in this Option seem to be in steady decline, but those who do answer here tend to write with authority and substance.

- 13) This was a popular and generally well answered question. The range of environmental impacts was well known with the level of detail tending to be the discriminating factor. Some had studied specific environmental issues but others were less convincing when they simply wrote of '... industry causing air or water pollution.' The better answers linked environmental impacts directly with industry, whereas weaker responses tended to make vague assertions about air quality in urban areas, a day in Mexico City was variously equated with smoking a prodigious number of cigarettes, for example. In the accompanying sub-part, most candidates were familiar with and confident when discussing the tri-partite nature of TNCs and could relate this directly, and with persuasive examples, to locational patterns. Perhaps the most significant factor helping the more successful candidates was their recognition of the growing trend for TNCs from NICs and LEDCs to become involved in manufacturing in MEDCs, what some journals are terming 'reverse colonialism'.

- 14) This question was tackled with slightly less conviction than the previous one primarily because candidates struggled with sub-part (b). In (a), however, the main trends were known, such as the decline in heavy industries and the growth at the lighter end of the manufacturing spectrum. Locational shifts as responses to globalisation were also well described. Understanding of economies of scale was, however, a real disappointment. There were those who seemed to stumble onto creditable answers with their discussions of rationalisation but often examiners were left making the links with economies of scale and location and so little credit could be given to candidates. The role of linkage and agglomeration / localisation economies was particularly weakly understood, which is especially disappointing as it lends itself to some interesting considerations of particular regions.

Service Activities: Location, Change and Environmental Impact

- 15) Descriptions of the main changes in the nature of retailing tended to be quite successful, albeit that nature was not always the main focus. The question left open to the candidate the context, urban or rural or both, and most offered general comments that were to a greater or lesser extent applicable to either spatial context. Sub-part (b) was generally answered with authority, as candidates clearly demonstrated their knowledge and understanding of factors that have led to changes in retailing. The more convincing explanations looked at themes such as suburbanisation and counter-urbanisation in which to set retail change. Confident use of terms such as threshold and range helped give answers authority. The better responses also managed to include material concerning change coming from the retailers, economies of scale for example, but also changes in consumers relevant for retailing.
- 16) Only a few responses were offered to this question and they tended not to be successful. Sub-part (b) was generally more convincingly attempted than (a), with disadvantages discussed in more detail than advantages.

Tourism and recreation and their Environmental Impacts

- 17) This tended to be the more popular of the two questions in the Option. Most responses were able to identify correctly several social / economic changes. The discrimination came in how well such changes were related to the development of tourism. Simply suggesting that ‘...people have become better off...’ was not as convincing as when attention was drawn to the rise in disposable income and how this allowed people to afford holidays. More thoughtful responses also recognised that many changes are both social and economic, for example, the growth in paid holiday time. The mention of improvements in transport was welcome but only really earned much credit when explicitly tied in with social / economic change. Developments in rail transport were best deployed by candidates when they mentioned the growing affordability of rail travel especially during the latter half of the nineteenth century. It was encouraging when scripts made accurate reference to special excursions and works outings. Few recognised the social revolution involved in widening private car ownership, as well as the economic changes necessary to bring this about. As ever, it seems that too few candidates have a secure grasp of the chronology of change.

The accompanying sub-part asked for the focus to be placed on the role of natural resources in attracting tourists to particular locations. Generally responses here lacked rigor and many drifted into simple catalogues of physical features without either offering details of those features nor relating them clearly to tourism. More convincing answers made reference to climate as a resource, for example, hot and dry for beach tourism, snow for skiing, but here figures and seasons would be helpful details. Examiners were pleased

to read discussions of how, in some locations, physical resources are managed so as to sustain tourism. It was also good to read details of particular places and in this context, national parks either domestic or foreign, made for helpful exemplification.

- 18) The more successful descriptions of ways in which governments in LEDCs promote tourism tended to utilise detailed case studies. These were at their most convincing when secure in their place details. However, too often claims about government action could not be substantiated and candidates were keen to allocate almost any development to government. For a good number of candidates the tourist industry in Kenya is a government monopoly! The more convincing responses were careful in their discussion to focus on developments that were clearly government sponsored. In this context infrastructure such as airports and ports and national tourist board advertising were suitable areas for inclusion. Also valid were descriptions of the establishment of national parks by governments, as these often aim to allow tourism to operate in ways that are symbiotic with the physical resources.

In sub-part (b), candidates were more secure when discussing 'crisis' rather than 'change'. There were effective discussions of the impact of terrorism both on individual locations such as Bali and Egypt, but also its effect on the confidence of potential tourists and their decisions as to whether to leave their country at all. Although less common, there were many thoughtful answers mentioning political change in locations such as Eastern Europe and Eire and Northern Ireland that have had positive impacts on tourism to these regions.

General Comments

Candidates produced a wide range of performance. This examination proved quite challenging to candidates who frequently failed to read the question set carefully enough. The group that achieved the top grade did so by directly answering the question, using detailed examples and case studies and making obvious synoptic links. Those more marginal candidates had two or more of these essential elements missing. There were too many in this group reflecting poor preparation by the individual candidates or most typically a failure to keep tightly relevant to the question being answered. All too often candidates tried to produce pre-learnt answers eg Q.4 was seen as the problems created by shanty settlements and these could be overcome. The failure to read all the elements in the question was more pronounced this examination and explains the disappointing results that some candidates must have achieved.

The questions on this unit are open-ended and evaluative so requiring careful thought and planning. Plans also help examiners trace the logic of the candidates thinking. It was encouraging to see that most candidates do present brief plans and it was those answers that tended to have a tighter better focused structure.

The responses are marked by component and candidates' responses varied greatly between these components:

- 1) Knowledge of content – more successful candidates demonstrated detailed knowledge of case studies, relevant concepts and geographical terms. Some weaker candidates made no reference to any location apart from 'eg Africa' type exemplification. Candidates should appreciate that this is a geography examination so some concept of location or/and place is essential. Without this clear grounding in the real world candidates can not expect to do well.
- 2) Critical understanding of content – this was the more effective component for the majority of candidates who demonstrated a clear appreciation of cause-effect and an understanding of the connections between different aspects of the subject (including synoptic connections). Clearly the basic concepts are well taught and understood by candidates.
- 3) Application and evaluation – this is the crucial component as it requires the higher level analytical and discursive skills to apply the understanding and knowledge to answer the question set. It is the evaluation aspect that usually distinguishes the better candidate and this examination was no exception. The higher achieving candidates evaluated arguments, concepts and statements in detail with some encouraging insights based on synoptic understanding, usually drawn from AS. Weaker candidates tended to agree with any quote regardless of the scale, location or time period. Many candidates could still improve their responses by using a less descriptive approach in their answers.
- 4) Communication – this varied tremendously as in most years. This is an essay paper and so requires lengthy extended discursive writing. Weaker candidates found even the most basic forms of communication difficult. Spelling was of particular concern as many could not spell place names eg *Missipi* or geographical terms eg *Hazzard* so rendering answers ineffective. The misspelling of basic words like there (confused with their) and where (were) continues to be common. Weaker candidates also struggled with the concept of the paragraph. Maps and diagrams were often included, which had little relevance to the discussion, as an attempt to meet the criteria of 'in different formats'. Another problem is the increasing use of inappropriate expression:

An answer to Q12: 'Hurricane Katrina bashed up New Orleans.'

Others confuse basic geographical terms:

'The high death toll of the 1970 tropical cyclone in Bangladesh can be put down to the typography of the coast.'

At the other end of the scale stronger candidates wrote with a fluency and organization that they, and their schools, should be proud to have produced in examination conditions. Candidates should be reminded that a total of 16 marks are available on this unit specifically to reward effective communication so it is important to present their work in a readable form with a clear introduction and conclusion and in a structured format. Unfortunately some candidates still provide introductions that state the obvious:

'Using examples, I am now going to consider how responses to the perceived level of danger can vary. I will first consider crustal hazards, such as volcanoes and earthquakes.'

Such an introduction suggests a low level response to an examiner!

Candidates must appreciate that their answers should:

- **Relate directly to the question set.** Some offered pre-learnt answers eg on the development of shanty towns for Q 4 which had only passing relevance to the actual question.
- **Give examples.** Stronger candidates quoted detailed knowledge of locations and some drew relevant maps. Weaker ones gave vague references; eg for Q 6 examples of traffic congestion were exemplified by 'eg London'
- **Be clearly synoptic.** Most of the questions had clear possibilities for synoptic links eg Q5 could have linked into material from 2681. The link should be seamless so the discussion flows.

Selection of questions

This is of continued concern as so few candidates and centres elect to do the EU and rural management options. Nearly all candidates do the hazards option and this examination this produced nearly 95% of candidates doing questions from this option, chiefly Q12. The urban management section was equally popular and Q 4 was excessively popular.

Comments on individual Questions

Option 1: Geographical Aspects of the European Union

This remains an unpopular section but centres that do this seem to perform well.

1 To what extent have the intentions of the EU's regional policy been met? [60]

This question presumes that candidates are aware of what the EU's regional policy is and the various agencies that deliver it. All too many got confused and ascribed regional development goals to the CAP or CFP:

'The Common Fisheries Policy gives aid to the more remote fishing regions whilst restricting those of the core countries such as the UK.'

Such an inaccurate answer also demonstrates that some candidates confuse regions with countries. The use of the term 'core' suggests a way into this question by looking at the tensions between core and peripheral regions (in terms of location, economy or social aspects) to explore the intentions of the policies delivered by with their varying degrees of success.

This would appear to be a question that candidates either knew well or didn't.

- 2 'The EU has responded effectively to the problem of pollution in transnational drainage basins.' Consider the validity of this statement.[60]

Most candidates knew about and understood pollution in some area of the EU but many did not base it in a transnational drainage basin. Some were blatant in this:

'Pollution in the Thames has been reduced in recent years.'

Whilst others were just unsure:

'The river Ruhr is a transnational drainage basin as ultimately it drains into the North sea – a basin shared by a number of EU states.'

Most candidates focused on the Rhine and detailed a number of pollution incidents with the response – effective or otherwise. It was those candidates that explained why the level and type of response varied that achieved at higher levels:

'The EU has not acted particularly strongly or with any true purpose on other polluted rivers around Europe. The Rhine was dealt with only when the pollution and problems which the pollution caused could not get any worse.'

The majority of candidates stuck to water pollution but some ventured into air pollution which was perfectly acceptable. Unfortunately this gave some the green light to write at length on Global warming or the destruction of the ozone layer. Few candidates really appreciated the political implications of 'transnational'.

- 3 For **either** a former mining area **or** a declining manufacturing region in the EU evaluate the effectiveness of the strategies used to regenerate the area. [60]

This was a very straightforward question but not popular in an unpopular section and many chose to combine the two types of area by referring to South Wales, Liege area or the Ruhr. Again it was the effectiveness of the strategies that was the crucial focus of the question rather than a description of the details of the relevant case study. In some cases the notion of regeneration was replaced by 'cope with decline'.

Most candidates gave a list with examples of a range of relevant strategies rather than evaluate their relative success. Higher achieving candidates suggested that success varied over time, between sub-areas and depending on the view point of the social group:

'In South Wales strategies have been very successful re-generating the run down docks of Cardiff Bay but the remoter valleys have seen little re-generation and suffered further decline by out-migration to growth areas such as Cardiff.'

Option 2: Managing Urban Environments

- 4 'The rapid growth of large cities in LEDCs creates more problems than benefits.' How far do you agree with this statement? [60]

This was a popular question and most saw this as the 'shanty town question' so spent excessive time describing the growth of these areas and how governments were dealing with the problem rather than directly answering the question set.

Some candidates made perceptive comments:

'Rapid growth of large LEDC cities is often too fast for the government to cope with so the shortage of housing is not met and dealt with.'

But then this was not developed into an explanation of why the government couldn't cope. Few candidates went beyond the city to look at the wider problems or benefits, created by rapid growth, for the surrounding countryside or the nation as a whole:

'Excessive urban growth draws in young active populations from the local rural areas so stripping them of their working population. This in turn leads to economic decline as crops can't be harvested and industries lack workers.'

High level candidates did distinguish that it is not a simple 'problems versus benefits' discussion:

'Often the environment bears the brunt of the negative costs and so does the poorest proportion of the population.'

On the whole most candidates see LEDC cities as a sea of hopeless problems. Many provided exhaustive lists with endless figures illustrated the dire consequences. It was only the higher scoring candidates that recognized there were some benefits for individuals or even the government of concentrating population. Some took a philosophical view:

'All countries go through a stage where at first cities grow rapidly and are sources of problems but these in turn form the basis and incentive for the development of the country so that eventually benefits outweigh problems.'

5 Discuss the implications of the changing demand for housing in MEDCs. [60]

This question was open to a number of interpretations – changing demand could cover increased demand (quantity), type of demand (quality, size etc) and locational demand. The majority of candidates chose the latter approach and looked at the increased demand for housing in rural or sub-urban areas.

Some candidates found the present tense of the question confusing so wrote largely historical answers:

'The demand for housing has greatly altered in MEDCs within the last few hundred years.'

Many candidates assume, as in answers to Q. 6, that the examiner has psychic powers and knows the figures quoted refer to the UK.

'The government has said that there is a need for an extra 40,000 homes a year to be built before the year 2020.'

The majority of candidates saw this question as one inviting a description of the resulting suburbanisation and development of Brownfield sites. These certainly can be seen as implications of the changing demand for housing but then too many launched on to accounts of controlling urban sprawl and the role of the greenbelt and forgot the thrust of the question – changing demand.

- 6 'Traffic congestion is the greatest threat to the urban environment in the 21st Century.' Consider the validity of this statement with reference to **either** LEDCs **or** MEDCs. [60]

This was a popular question but too many candidates saw this as an invitation to explain how traffic congestion is being tackled or why congestion occurs. Some failed to appreciate that this was an 'either or' question so selected exemplification from both LEDCs and MEDCs.

A common problem was that many candidates really discussed traffic generated problems rather than focus on threats posed by congestion. Typically air pollution was blamed on congestion:

With all those cars fumes, carbon dioxide and sulphur dioxide, are produced which produce photo-chemical smog in cities eg LA.'

A better response was:

'Congestion slows traffic so engines are idling and its then when cars and lorries are most inefficient so produce the most fumes. More traffic more fumes.'

Few candidates tackled the question of whether it was the greatest threat and of those that did the majority agreed often invoking global warming and urban micro-climates as definitive proof. More sophisticated candidates either looked at other threats such as urban decay/counter-urbanisation or sheer population growth in LEDCs or suggested traffic congestion was the biggest environmental threat whilst other factors posed bigger social or economic threats. Candidates should be reminded that they are unlikely to access the highest levels of marks unless they do consider the validity – ie evaluate.

Option 3: Managing Rural Environments

- 7 'Modern intensive farming has a greater impact than traditional farming on rural landscapes.' How far do you agree with this view? [60]

This was not a popular question in this section as probably few really understood the nature of 'traditional farming'. A small number of candidates saw this as slash and burn in the tropical Rain Forest and candidates should be reminded that the specification states clearly it should be based in MEDCs.

Most brushed over traditional farming and focused on modern intensive farming producing long lists of woe and destruction to the environment:

'Modern farming relies on chemicals – fertilisers, pesticides and herbicides. These get into the drainage system so end up polluting our water supply. The result can be blue baby syndrome.'

Whilst acknowledging that modern intensive farming can be destructive of both the physical and social environment of rural areas it was the higher level answers that either compared this with the traditional mixed or pastoral farming systems or pointed out that increasingly modern intensive farming is reducing its impact via set-a-side or intensive organic farming. Such candidates questioned the very notion of 'intensive':

'Modern farming in the EU is increasingly less intensive due to the CAP so has less of an impact on the environment than it did 20 years ago.'

Exemplification proved difficult for many although some did contrast the changes in farming on the South Downs from sheep to intensive crops. One centre used the North American prairies as their example but found it difficult to suggest an example of traditional farming:

'Buffalo hunting was the traditional farming system that resulted in the millions of buffalo being wiped out until there were only 40 left. Clearly this is an example where traditional farming had a massive impact on the environment.'

- 8 'The growth of second home ownership is a major threat to rural communities.' Consider the validity of this statement. [60]

This was a popular question and most candidates understood the reasons behind the growth of second home ownership. The majority then went on to list the resulting problems stemming from a high percentage of second homes in an area. Few candidates went beyond the negatives brought by second homes especially the issues of pricing out of locals and a loss of local services. The chief limitations of such answers were the lack of detailed exemplification although some candidates chose examples of weekend cottages in French Villages or second homes in Spain. In these cases it was difficult to have knowledge of a full range of threats apart from Anglicisation.

Some confused second home ownership with tourism so ascribing a host of problems perhaps unfairly on second home owners:

'With more visitors coming to the area the level of litter increases and the roads clog up with visitors' cars especially at weekends.'

Few candidates went beyond a list of problems to evaluate whether it was a major threat. Those that did stated it was a major threat and left the evaluation there. With such wording there is an expectation that candidates suggest that in some areas it is a major threat and some it is not or that it might vary over time or with the scale or even with the viewpoint. In some areas there are more major threats which in turn may encourage the development of second homes:

'The decline in upland farming is the real threat. Farms are no longer economic so sell up putting the local farming community out of work. In turn this causes rural to urban migration leaving empty cottages and barns.'

- 9 'The designation of areas as National Parks causes more problems than it solves.' Discuss this viewpoint. [60]

This was a straightforward question that required candidates to weigh up the problems that designation as a National Park causes against the gains in terms of the existing problems that such a designation solves. Relatively few candidates seemed to be aware of the latter aspect and too many looked at the way problems caused by the National Park are being solved.

Many candidates offered a range of problems especially those arising from the conflicts between land uses and between conservation/management strategies and the need for the local population to make a living:

'The development of Quarries is restricted in the Park to protect the fragile environment but this then limits employment so increasing male unemployment.'

Exemplification was often a little thin and consisted largely of 'eg Peak District' type comments. Some candidates exemplified from areas that are not National Parks such as

the North Downs or based their case study abroad including Yosemite in the USA. Whilst welcoming non UK examples candidates find it difficult to give the same level of detail needed in such questions as this.

Option 4: Hazardous Environments

- 10 To what extent does the response to the perceived level of danger vary in hazardous environments? [60]

This proved to be a challenging question for many candidates probably due to careless reading of the question. The stress was on explaining why the level or type of response varies between hazardous environments. Most candidates were aware of a variety of responses ranging from 'Do Nothing' to building earthquake proof buildings. More effective answers sought to classify these into before, during and after groups. Others picked up the notion of perception and offered a more subtle approach:

'It is when the hazard is unexpected that the levels of response are lower.'

At times cause and effect were confused or unclear:

'Mt St Helens eruption in 1989 was wrongly predicted and as a result the wrong side of the mountain exploded, where evacuations had not been resulting in a death toll of 67.'

Again few candidates really tackled to what extent. Some saw this as another opportunity to contrast LEDCs and MEDCs linking the different level and type of response to the level of capital and technology available:

'No proper response to the Boxing Day Tsunamis in the Indian Ocean could have been done as the area lacked the resources and technology to detect the wave let alone evacuate millions of people at short notice.'

It was the higher achieving candidates who suggested that the response varied with the frequency, history or severity of the event or with the nature, location and density of the population. Some included politics citing the response to Hurricane Katrina in New Orleans.

- 11 Evaluate the success of strategies used to reduce the impact of tectonic hazards. [60]

Strategies used to reduce hazard impact were generally well known, often classified into prediction, planning responses, minimising impact and reducing the after effects. These were generally well linked to the nature of tectonic hazards although some candidates repeated much the same material for earthquakes, volcanoes and tsunamis. It was the evaluation of the relative success of these strategies that was crucial. Some offered weak evaluation:

'This shows that despite measures to prevent the disaster the strategy was unsuccessful.'

If only the candidate had then explained the reason why it was unsuccessful. Some candidates did explain various factors that influenced the varying success of these strategies:

'People vary in their perception of the likelihood of an eruption, especially if there has not been a recent one, so may not evacuate an area if told to by the government.'

Again many saw it as an opportunity to contrast LEDC and MEDC response:

'It is only MEDCs that can afford to earthquake proof buildings as it costs a lot of money to build such complex buildings.'

This was not an invalid approach but candidates had to be clear, as in the example above, why this impacted on the level of success. Many saw that ultimately strategies would not withstand a severe tectonic episode often quoting the Kobe earthquake as proof.

- 12 'The impact of hurricanes and tropical storms reflects an area's level of development more than the severity of the hazard's event.' Discuss this viewpoint. [60]

This was the most popular question in this most popular of sections. This was often a very effectively done answer well supported with detailed exemplification. Candidates should be reminded that if a storm is quoted its date helps locate it in time (and thus development). Too many simply wrote: *'Hurricane Mitch hit Central America.'* Some candidates wasted time/space with lengthy introductions based around the meteorology of hurricane formation or a general discussion of hazards:

'The diagram above (Dregg 1992) shows the hazard and the vulnerable population. The closer the hazard and the vulnerable population become presents a disaster. If the hazard or vulnerable population become larger, then the resultant disaster will too get larger.'

The most effective answers used a comparison of two hurricanes of the same strength impacting on an LEDC and an MEDC to show the impact of the level of development and then used an example that showed an exception – usually Katrina's impact on New Orleans. Katrina was used to prove a number of points:

- A severe hurricane can overcome a developed area
- It was so bad due to the poverty of the area (ie LEDC within an MEDC)
- Other factors were also important:

'The impacts can also be linked in with other aspects of geography such as upland and low land environments, for instance the atmospheric hazards that swept Bangladesh and New Orleans had greater impact because the majority of the population were settled below sea level.'

When candidates exemplify it is important that they give the date of the event. All seemed to know the name of Hurricane Mitch or Andrew but not all could put a date to them. It is important at this level as candidates should appreciate that a Hurricane hitting an area in the 1960s might have a different impact than if it had hit in 2005! Populations do grow, technology advances and urban areas expand.

Again it was the candidates who questioned whether it was a simple relationship between the level of development and impact that scored at the higher levels.

General Comments

Examiners felt that the general standard of work presented was, if anything, slightly worse than in previous years, with fewer examples of work of the very highest quality. Nonetheless, there were some outstanding studies that combined understanding of the inquiry procedure, application to broader geographical ideas and concepts and a clear sense of the place being studied. A good study also continues to be characterised by completing the circle of inquiry by providing answers to the original questions based upon the data collected.

There continue to be a number of administrative matters that schools and candidates sometimes fail to address. A significant number of centres failed to include the centre authentication sheet, which is now essential, as a grade cannot be awarded without it. A few centres failed to include the cover sheet and some did not include the attendance register. A small number of centres still submit their studies in an inappropriate form. Studies should be bound or tied together in a simple fashion, which makes it easy to read, but they should not be presented in hard folders and should not be placed in plastic file pockets. Presentation should not exceed A3 and material of this size should be folded neatly. These comments are very similar to those made last year, but some centres continue to ignore them.

The organisation of the study remains a problem for some. There are five clear assessment criteria and candidates are well-advised to organise their material around these criteria. Candidates do need to note that the criteria do differ in significant respects from those for AS, which are inappropriate at this level. However, although presentation and analysis are identified as two separate components in the mark criteria, candidates should be encouraged to regard them as complementary. Analysis should be referring to the material presented to answer the questions/hypotheses posed. This is much more effectively done if the presentation and relevant analysis are integrated, rather than separated by many pages. I would reiterate the advice that candidates should be encouraged to number the pages of their studies and to give reference numbers to their presentation (eg Figure 1, Map 3). This helps examiners to see more clearly how presentation and analysis relate to each other and, therefore, to give the candidate the appropriate mark.

This year, the practice of putting representational material in appendices or at the end of the study has continued. Material presented in graphs, photos or maps is an essential part of a study, accounting for approaching 20% of the mark under the revised mark scheme. Essential presentational material **should not be placed in appendices**, where it is likely to be ignored or overlooked and, therefore, not gain the credit it might be worth. A minority of candidates, and indeed some centres, continue to include in the study, either in appendices or occasionally in the body of the study, the whole set of questionnaires or data recording sheets used. This is not necessary; one example would suffice.

Two issues of concern to examiners surfaced once again this year. The first is the use of shared data by candidates, whether this was collected as part of a Field Centre visit or as part of school-based fieldwork. The second is the length of some studies.

While there may be good risk assessment and practical reasons for organising data collection through groups, centres need to make their candidates aware that this is an individual study and that, in formulation and methodology, the individual input needs to be clearly apparent to the examiner. In many cases centres enable candidates to identify their individual contribution through different data and/or different hypotheses or questions. However, there are still a minority of centres that pursue the use of grouped data too far. Situations where a whole centre of significant size collect and share data are not acceptable in an assessment component that is entitled a **Personal** Investigative Study. It is very difficult in these circumstances for examiners to discriminate between candidates. Where centres have tried to tackle this problem by ensuring

candidates are looking at different questions or hypotheses, this leads to some contrived questions or hypotheses. Candidates often also include irrelevant data collection and presentation in their studies, because it has been part of questions that other students are examining. This does not help the students concerned, because it indicates a lack of planning. Group work should not involve more than 3 students in collecting similar data. Where more than this number are involved mediocre studies tend to be produced.

Once again, it is pleasing to report that most centres had guided their candidates to produce studies to meet the word length requirement, but there remain a significant number of studies that were over length, a transgression sometimes compounded by the candidate declaring a clearly false word count on the cover sheet. In a minority of centres this occurs on a regular basis and centres need to be aware that heavy penalties are possible under the current mark scheme. There continues to be an increasing trend for candidates to attempt to overcome the problem of word count by including substantive material in tables. This was particularly common in descriptions and explanations of data collection, but more often than not these consisted of full sentences, simply surrounded by boxes. While this is a valid means of presenting this information, the words used in the table should be regarded as part of the word count. In addition, the use of such tables does not always explain the methodology as clearly as it might do, because of the sometimes artificial nature of the headings used.

In some cases, the problem of over length is self-imposed. There were many instances of candidates including unnecessary words:

- sections in both the introduction and the methods that were virtually identical and involved considerable repetition;
- the expression of aims in three separate ways: aims, followed by hypotheses, followed by null hypotheses – only one of these is necessary;
- descriptions *and explanations of the choice of methods to present information – these are not necessary.*

It has to be stressed, however, that a significant number of candidates produced high quality work, showing an individual element and a good understanding of the underlying geography applied to a particular place.

Comments on individual questions

In the case of the Personal Investigative Study there are no individual questions to be considered. However, the assessment criteria provide appropriate headings under which to discuss candidates' performance. At this point, it is worth comparing performance of candidates under the five different assessment headings. This year, examiners generally noted that the performance on Formulation and Data Collection were the strongest sections. Data Representation was again much more variable, with a surprisingly wide range of marks awarded, given the facilities available for computer-generated graphs and maps. The weakest section in general, was that involving Summary and Evaluation, with many candidates not affording it the weight it warrants in the assessment criteria. It needs to be stressed strongly that the Summary and Evaluation section is of equal weight to all the others and should, therefore, have a similar word count.

Formulating a question or hypothesis capable of being researched and understanding the limitations imposed on geographical enquiry by the resources, including data available. Designing realistic strategies including risk assessment.

It is clear from both examiners' comments and the studies themselves, that this remains the most crucial stage in developing a successful investigation. The most successful studies are characterised by topics that:

- have a clearly focussed question, supported by a limited number of subsidiary questions or hypotheses that are in some way related;
- have a conceptual or theoretical background that is clearly linked to the overall aim and its subsidiary parts ;
- have a clear locational context: the study is about somewhere.

This year there were rather more studies that restricted their own potential by having a question of very narrow focus, more suited to AS than to A2. Studies that examine how just one variable varies spatially provide limited scope for detailed analysis at A2 level. Examples of such studies include 'changes in vegetation height with distance inland in a sand dune ecosystem' and 'changes in environmental quality with distance from the city centre'. In these and similar cases, the studies would give themselves much more scope by examining factors that might influence such change, such as abiotic factors in the first instance and socio-economic characteristics in the second. With honourable exceptions, studies that attempt to assess the impact of one thing on another continue to be relatively unsuccessful. Successful examples invariably identified measurable criteria as the basis of assessing impact, and several considered the spatial variation in impact successfully.

The use of hypotheses is a productive means of focussing a more general geographical question or idea and many good studies use hypotheses in a very effective way. Such studies phrase the hypotheses in a form that is actually clearly researchable, such as:

"Temperatures in a deciduous woodland are lower than those in an open grassland."

"Socio-economic deprivation decreases with distance from the centre of a town."

The use of hypotheses is not, however, without its potential pitfalls and a significant number of candidates in this year's entry repeated mistakes in hypothesis use that have appeared in previous years. In particular, candidates should be advised to avoid:

- too many hypotheses: the identification of 5 or more hypotheses is too many and will inevitably lead to a lack of depth in the analytical and concluding sections. A maximum of three to four hypotheses (or questions) is recommended;
- hypotheses that contain a "due to" or "effect of" clause are not testable, because it is impossible at this level to establish a causal relationship;
- vague hypotheses such as "there will be differences between X and Y".

It remains true that the better studies are soundly based in some geographical theoretical or conceptual framework. According to Assessment Criteria Descriptors, at Level 1, "limited reference to relevant geographical theory and concepts", while at Level 3, "clear, explicit links to relevant geographical theory and concepts" are expected. The absence of such references remains the most significant weakness in many of the studies that do not score highly. The inclusion of such conceptual material also has benefits for other elements of the studies. Reference back to theory and concepts helps studies be more analytical and evaluative, gaining credit under the last two criteria. Some studies show no awareness of wider geographical ideas at all. An example would be a study examining the sphere of influence of a particular centre. This is a clearly researchable geographical topic at a suitable scale, but needs some conceptual basis to develop it in a wider context. Concepts of distance decay and competition would be relevant here.

Furthermore, any theoretical and conceptual ideas need to be applied to the question being studied. A significant number of studies include theoretical material whose relevance to the main aim of the study is not clear. Several examiners noted the indiscriminate lifting of loosely relevant material from the Internet. To gain credit, theoretical and conceptual material needs to be used either to establish reasoned hypotheses or questions, or to justify hypotheses/ expectations put forward. It would also be helpful if candidates clearly referenced the sources of

such theoretical material, as this can then be recognised as relevant secondary material to the study under the 'Programmes of Data Collection...' heading.

The most successful studies also show some sense of place, conveying clearly that the geographical ideas and concepts being examined are related to the real world. Examples would include urban deprivation studies that identify areas that are more or less deprived than might be expected and provide descriptions and explanations that give a flavour for the defining characteristics of those areas. So too would sand dune studies that identify anomalies in changes inland and relate those to specific features of the physical and human landscape.

The criteria for this section also contain reference to "realistic strategies", and candidates continue to waste words in this area. This can be dealt with very briefly with an outline of the data to be collected. For example, in a study of how deprivation varies within an urban area, a candidate need only identify the different measures of deprivation to be used, the sources of the data for those measures and the locations of the places to be sampled. Detail about the justification and implementation of these methods can then be placed in the methodological section. It is apparent that many candidates waste words here by repeating material in the introduction and then in the methodology. The addition of a relevant risk assessment would then complete the strategic planning. The key word in relation to risk assessment is relevant. Many studies adopt a rather formulaic approach. The most effective assessments are those that are concise and consider a limited number of specific and realistic risks, including steps taken to minimise them. A significant number of studies did not include any risk assessment; candidates need to be aware that they are an integral part of strategic planning.

Finally, centres are advised to ensure that the studies students embark upon are feasible, geographical and of a suitable scale and scope to allow access to the higher levels within the mark scheme.

Carrying out programmes of data observation, collection and recording using selected sampling strategies.

There are four principal issues in relation to data collection: the volume of data collected, consideration of reliability and accuracy, including sampling issues, the description of the practical methods employed and the balance of primary and secondary data.

The volume of data collected is crucial in several respects. It relates clearly to questions of reliability and accuracy but it also has knock-on effects for later sections. The weakest studies are invariably based upon a small data-base. Quantity of data clearly links with reliability and accuracy. The majority of candidates do collect sufficient data, but there are a significant minority who do not. This can be manifest in a variety of ways: too few questionnaires, insufficient sample points, and insufficient readings at different times. To illustrate, 10 questionnaires to identify a catchment area of a centre is not enough to provide any reliability to the results; similarly four sites down a river are insufficient to show change and certainly not enough to justify any statistical testing, such as Spearman. One afternoon's fieldwork as a few candidates indicated, is not enough to produce sufficient data to complete a successful study. At the other end of the scale are the minority of candidates who collect too much data. This does not involve too large a sample size, but too wide a range of data, so that the candidate ends up swamped with facts and figures. Such studies end up being highly descriptive, with no words or time to develop the higher analytical levels necessary. In many ways this relates back to the planning stage – some candidates need to be much more selective in the data they collect or, having collected, take the decision to discard it and exclude it from the study altogether. This is most prevalent in questionnaires, with the inclusion of irrelevant questions, or ones which are not subsequently utilised in the analysis.

Candidates have, encouragingly, begun to pay more explicit attention to reliability and accuracy. This has been addressed by successful candidates in a number of ways: the repetition of readings to produce averages; a large sample size; more than one transect in a spatial study. For example, a study examining the urban heat island effect that is based upon one day's readings at twenty sites along a transect, has very limited reliability. Successful studies replicate the data collection on different days and at different times. It is difficult to give hard and fast rules about the amount of time that should be spent on the fieldwork element of investigation, but it is unlikely that meaningful results can be collected in less than two days.

Sampling is specifically mentioned in the assessment criteria. The better studies describe and explain their sampling framework in the context of the study being undertaken. There is a tendency, in less successful studies for the discussion of sampling to be generic. The different approaches to sampling do not need to be described in detail – candidates should be encouraged to identify clearly the method chosen, and then to justify it in the context of the specific study. Candidates should also be encouraged to include maps or diagrams demonstrating the spatial elements of the sampling framework. These should be integral to the written text and show the scale.

This year, a number of examiners commented upon the weakness of the description of the practical aspects of data collection. This was probably more common in studies based upon the physical environment. Candidates would mention the use of a piece of equipment, but fail to elaborate on its actual use. Examples include such phrases as *"I used a soil auger to collect soil samples"* and *"I measured temperature and humidity using a whirling hygrometer"*. To judge how accurate and reliable these methods were, an examiner needs to know how such equipment was practically applied, such as height above the ground and length of time readings were taken for. The better studies include annotated photographs demonstrating the application of such techniques.

As in previous years, the description of secondary data remains relatively weak. The following quote from a study illustrates this vagueness:

"Secondary data was obtained from the meteorological office in X"

It is important to state exactly what data was collected, to establish its relevance and to quote the source accurately. It remains true that very few candidates go into any detail about exactly where the secondary data were obtained. In relation to Census data, for example, the source will often be dismissed in a part sentence referring to the Library. The exact nature of the data obtained and its precise source need to be identified and referenced in the Bibliography. The same is true for all other secondary sources, especially maps downloaded from the Internet, which are rarely referenced. The advice given last year is reiterated here: *"Candidates would benefit from being given advice about how to reference, using standard approaches such as the Harvard system."* There was also an increasing tendency this year for candidates to mention secondary sources in the methodology section, but to fail to use any secondary such information in the analysis.

Clearly, in some studies, especially those investigating the physical environment, the primary/secondary balance is appropriately dominated by primary data. Here the best studies make clear the significance of the often supportive nature of the secondary data: maps establishing sampling sites; background theoretical material; even statistical formulae: this should be properly referenced. In contrast, a minority of studies showed an imbalance through the over dependence on secondary data.

These comments notwithstanding, this element remains probably the strongest of the five assessment headings. Successful studies describe the detail of the methods employed concisely and without repetition, but importantly justify the choice of methods and their implementation. With less successful studies, explanation is lacking and it is sometimes unclear

how the data collected relate specifically to the aims of the study. A final comment relates to the way in which candidates express this component. The best invariably use the past tense, which is correct, as this section should be reporting how the data collection was implemented.

Representing data using the most appropriate methods

Presentation remains a strong element in most studies and the additional element contained in the new mark criteria “the quality of written communication in the study as a whole is extremely sound...” has benefited rather than penalised studies, because the vast majority of studies do communicate their findings effectively.

Examiners identified four other aspects which, if addressed, would improve performance on this element. First, the increase in the use of maps downloaded from the Internet has continued. These clearly have a place in helping to locate studies and are to be encouraged. However, a significant number of candidates include such material without apparently thinking about its value. Many such maps lacked scales and appropriate titles, or reference in the text.

Second, the use of ICT continues to help candidates to produce good material, but there remains a tendency at the lower levels to ‘press a button’ to produce a graph, with little thought to its appropriateness and relevance; this is particularly true of studies where comparison is a key element. Unthinking use of ICT produces graphs that do not enable easy comparison, when this is the main aim of the study. Good studies present comparative graphs side by side, using the same scales and techniques. Indeed, one of the biggest concerns of examiners is the unfriendly nature of some of the material that is supposed to be compared.

Third, the effective use of annotated photographs highlighted in previous years continues to be a positive feature of this element. However, some candidates still include a myriad of photos, whose relevance is never made clear, either by annotation or reference in the text. Photographs are useful and informative, but in moderation; they need to have a purpose.

Finally, once again, those candidates that integrated presentation with analysis through specific reference to the presentation scored significantly better than those that referred to presentation in a more general sense. Extensive blocks of presentational material separated from the analysis make it difficult for examiners to establish relevance. In the same context, there were more candidates this year placing relevant presentational material in appendices. **Presentation material should be placed in the body of the study.** It is difficult to envisage any relevant presentation that should be placed in appendices!

Analysing the data using appropriate techniques

There persists a tendency amongst candidates and, it appears, centres to believe that statistical testing is the be all and end all of analysis. This is far from the reality. Statistical testing should not be the first stage in analysis, as far too many, even of the more successful candidates seem to think. Statistical analysis should follow a common sense examination of the data, which should identify trends, differences, relationships and patterns. This is the first stage of analysis that many, even the most capable, seem to ignore. This helps to explain why some studies do not score as highly as might be expected, because a basic stage has been ignored. Once trends, differences, relationships and patterns have been established, statistical analysis becomes valid – **it is a tool not an end in itself; it will only gain credit when used appropriately.**

The value of measures of central tendency (mean, median, mode) and dispersion (range, inter-quartile range and standard deviation) remains under-utilised by many candidates, when it would be more appropriate than tests such as Spearman and Chi-square. It was pleasing to see these statistics used more effectively this year than previously. Where statistical tests are used, the best studies explain why they were used, show evidence of the calculations made (this is

something that could and should be legitimately placed in an appendix) and use the results to inform the analysis. Occasionally, tests are used but no reference is made to them at all in the textual analysis: this makes it very difficult to give much credit, because no interpretation of the results is involved. There was also a tendency with a minority of candidates to fail to establish null hypotheses. If such statistical tests are to be used, candidates must establish them in the correct form and subject them to significance testing.

Despite previous statements in reports and at INSET, statistical tests are still often used in inappropriate circumstances. A significant number of candidates do not demonstrate an understanding of the limitations of the tests. In relation to Spearman's Rank, many candidates use the test when there are too many tied ranks – this makes the test invalid. Others apply the test when there are too few samples – using it with 3 or 4 pairs is really pointless. Chi-square is another misused test. This test is inapplicable if too many expected values are 0 or less than 1. As a general rule, candidates should be advised not to use a test if they don't understand it.

A point which emerged this year was the use of statistical testing without any referencing in the text. If a statistical test is to be used, it has to be discussed in the analytical or concluding section, The simple inclusion of the calculations of such a test carries little weight in the analysis, because it has not been interpreted

Successful studies are characterised by analysis that clearly relates back to the original aims and sub-questions/hypotheses, examines the data in detail and uses statistical analysis in an appropriate and considered fashion. These studies were characterised by the identification of anomalies to the expected pattern.

Drawing conclusions and the critical evaluation of their significance and reliability

Candidates need to be aware that this section carries equal weight to all other sections. Even amongst the most successful studies, this section tended to be the one that scored less highly and the one in which least words were written. There are three key elements to this section

- a summary of the findings of the study that relates back to the original aims and quotes material from representation and analytical sections: it should be possible for an examiner to read the concluding section and understand exactly what the focus of the inquiry was and what was discovered about this;
- some evaluation of the study in the context of the original conceptual/theoretical ideas presented in the introduction: candidates should examine the extent to which their findings support these broader ideas, and suggest reasons for any anomalies;
- some evaluation of the methodology employed, which might identify limitations and/or improvements that could be made: this should go beyond the simplistic "more is better".

To an examiner, one of the key elements here is 'closing the circle'. Has the candidate, on the basis of the evidence presented, answered the original question posed? Have the result been explained, in relation to either background geographical theory or concepts or local factors, or both?

The best studies have a realistic evaluation of the limitations of the study and how these might have affected the results. Too often such evaluations are over simplistic, with phrases such as "*if I had more time I would have taken more samples*".

It was in this section that a penalty for over length had to be imposed. While the vast majority of centres encouraged their candidates to maintain the word limit, there were a few centres that clearly abused this. These centres should be aware that further penalties are possible within the current criteria to penalise candidates for lack of conciseness under Criteria A.

Concluding comment

It is clear that examiners generally feel that most candidates produce high quality work, based upon considerable effort both in the field and in the subsequent write-up. There remain, however, many ways by which candidates can improve their studies and these have been identified under the different components of the assessment criteria. It needs to be stressed, however, that this should be a **personal** study and that the large-scale use of group data is not an acceptable approach. Candidates can share in the data collection process, but they must be able to identify their individual contribution, not only to data collection, but also in the identification of a question and in the subsequent analysis.

General Comments

The number of candidates taking this option has risen considerably. The re-structuring of the paper, which culminated in the demise of the field work report, has made it more attractive to many centres, as has the resemblance to the proposed fourth paper of the new specification.

All examiners reported an improvement in the performance of the candidates. Indeed, many of the more successful candidates produced answers that showed flair, understanding and a pleasing grasp of investigative techniques. This appears to have been built up through a programme of integrated field work over several years, where candidates are taught sound techniques, are encouraged to identify and investigate problems and are fully involved in the planning and execution of these exercises. Where field work has been more centre driven and didactic, the candidates did not appear to have the ability to think for them selves, nor could they think around problems and issues to the extent that allowed access to the higher marking levels.

There were many examples of excellent, small pieces of field work, often taking half a day to collect the data and integrated into the 2683 and 2684 options within the A2 examination framework. Many candidates drew on these experiences to exemplify their answers in the discursive sections, in contrast to those who struggled with these more demanding sections. The advice is that all centres must strive to maintain a programme of field work, enabling candidates to achieve their potential in all aspects of the specification.

Many candidates still sacrificed marks through a failure to pursue a stated point and so raise their answers to a higher level. Poor understanding of the command words was evident; in particular the command "justify" was either ignored or given very little consideration. The majority of candidates also ignored the fourth bullet point under "information for candidates" on page 1 of the question paper. Sketch maps and diagrams were rarely included, often resulting in long winded and confused explanations. Perhaps a return to basic skills is called for!

Questions

Question 1 sought to test the early parts of the investigative process.

1(a) showed that many Centres had listened to the INSET advice and their candidates were well equipped to identify possible investigations. The justification proved more problematical and obvious points such as grid references and place names were ignored.

1(b) most candidates had a good grasp of sampling methodologies. There were some excellent examples of sophisticated sample designs with a clear understanding of the range of techniques that could be employed and the need to collect representative samples of the data. The degree of sophistication ranged from computer generated random numbers to pin sticking in the map. Sometimes the methodologies proved impractical in the field; perhaps more field work experience would help. A surprising number of candidates failed to link part (a) to (b).

1(c) was a good discriminator as many of the weaker candidates dealt solely with a risk assessment. Those candidates who had been involved in the decision making design process necessary before field work can be undertaken were in their element and used their own experiences to attain level 3 answers. They produced discursive answers, incorporating a mixture of sound common sense and detail from field work undertaken. Very rarely did any candidate mention research or back ground reading; perhaps we all need to stress this a little more.

1(d) highlighted that data reliability is poorly understood by many candidates. Most ignored the topic completely and so their marks were limited to level 2. Again this was a good discriminator and the most able could look beyond the obvious two points. It is a difficult concept for most but nevertheless an important one and a valuable tool for any investigation.

Question 2 was the least popular option but those who attempted it often scored well. Part 2(a) was well answered, with many candidates linking their answers to the data provided and talking about the subjectivity of the data supplied. Level 2 answers were quite common.

In 2(b) many candidates failed to understand "relative merits" and so missed the needs for a comparison, which limited their marks to level 2. The graphs were designed to be poor examples and many candidates did not spare their criticism of the two figures! The worst answers were nothing more than two lists showing no links nor attempted comparison. Many candidates were happy with stating the obvious and needed to look beyond the mundane in order to access level 3.

Part 2(c) was tackled on many levels. The weaker candidates confined their answers to mean, median and mode; often confusing the terminology and failing to show how it could be applied to the data given. Some resorted to mathematical proofs which did not show any linkage to the question or the data. The better candidates extended the use of the mean to include standard deviation and the median with the inter-quartile range. This was a level three indicator. The key discriminator was the level of justification given. Many candidates ignored this requirement completely.

Part 2(d) produced bi-polar responses. Candidates either knew about regression, producing excellent answers linking the mathematical elements to the geographical application of the techniques and arguing when it was applicable OR they failed to appreciate what was needed and talked about Spearman Rank or Chi Squared. Some candidates resorted to a purely mathematical proof which was capped at Level 2. The technique is clearly stated in the specification. The fact that it can be used as a predictive tool to extend graphs or to allow trends and patterns to be identified was a key discriminator at the level 2 / 3 boundary.

Question 3 was the most popular and required the candidates to analyse the information given in the resource booklet. They often let marks slip through a failure to view the material carefully. Sometimes it was apparent that a cursory glance had only been afforded the tables. Part 3(a) needed a good quality justification to access level 3. The better candidates drew upon their AS urban work to furnish such material. This allowed many to provide a good quality paragraph which included some reference to expected CBD characteristics.

Part 3(b) seemed straight forward but many responses lacked detail and so missed out on Level 3. Many candidates talked about the need to look at a map but never mentioned what type or why. Goad maps, census material, Kelly directories, Thompson directories and even Yellow Pages all contain valuable sources of secondary data. How these could be used in urban field work is surely an obvious avenue of teaching this topic. Weaker candidates did not know what secondary data was and interpreted the question as additional primary data that they would collect to support what had already been obtained. This was quite a common error and tended to be polarised to a number of Centres.

Part 3(c) asked for an appropriate statistical test. This required an answer that had its foundations in the 2682 AS paper. Mann Whitney "U" or Chi Squared were the appropriate tests that were expected. They needed to be explained and justified. Again the justification proved to be the key discriminator and many excellent answers were seen showing a pleasing grasp of the topic and some excellent teaching. Unfortunately this was also mirrored by the opposite scenario. There were a significant number of Centres for whom this question created real issues. It was most disappointing to note that little if any progress has been made from AS and the same misunderstandings highlighted in previous reports on 2682 still manifest themselves at A2.

Report on the Units taken in June 2007

Spearman Rank was still offered by a significant minority and they were polarised into a small number of Centres. This indicates that teaching of this topic still needs to be tightened up.

Part 3(d) encouraged both discursive and synoptic answers, allowing candidates to exhibit their geographical skills and knowledge. This was an excellent discriminator and, as such, produced a wide range of answers. We all really enjoyed reading some of the better answers. They were a credit to themselves and their Centres and showed some excellent teaching and preparation. Many used the data supplied and linked it to existing models and theories as a starting point for their answers.

This new format seems to have been successful and will continue until the end of the specification.

**Advanced GCE (Subject) (3832, 7832)
June 2007 Assessment Series**

Unit Threshold Marks

Unit		Maximum Mark	a	b	c	d	e	u
2680	Raw	100	68	61	54	47	40	0
	UMS	120	96	84	72	60	48	0
2681	Raw	75	51	46	41	36	32	0
	UMS	90	72	63	54	45	36	0
2682 01	Raw	60	39	36	33	30	28	0
2682 02	Raw	15	12	10	8	7	6	0
2682 Opt A	Raw	60	60	39	41	37	34	0
	UMS	90	72	63	54	45	36	0
2683	Raw	90	68	60	52	45	38	0
	UMS	90	72	63	54	45	36	0
2684	Raw	120	84	76	68	61	54	0
	UMS	120	96	84	72	60	48	0
2685	Raw	90	76	68	60	52	44	0
	UMS	90	72	63	54	45	36	0
2686	Raw	90	59	51	43	36	29	0
	UMS	90	72	63	54	45	36	0

Specification Aggregation Results

Overall threshold marks in UMS (ie after conversion of raw marks to uniform marks)

	Maximum Mark	A	B	C	D	E	U
3832	300	240	210	180	150	120	0
7832	600	480	420	360	300	240	0

The cumulative percentage of candidates awarded each grade was as follows:

	A	B	C	D	E	U	Total Number of Candidates
3832	25.6	46.6	65.6	80.9	91.1	100.0	4,703
7832	29.9	60.9	82.7	95.5	99.5	100.0	4,174

8,877 candidates aggregated this series

For a description of how UMS marks are calculated see;
http://www.ocr.org.uk/exam_system/understand_ums.html
 Statistics are correct at the time of publication

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