GCE

Geography A

Report on the Units

January 2008

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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.

OCR will not enter into any discussion or correspondence in connection with this Report.

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REPORT ON THE UNITS

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. There is an increasing trend to entering candidates in January, possibly to reduce pressure in the summer, so fewer candidates are those re-taking. 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 the gap does continue to reduce. The written section of 2682 (geographical investigation) performed strongly compared to the other two written AS papers. As usual 2682 was lifted by the report component in with over 50% achieving at the highest grade.

A2

Assessment is largely by extended writing which allows effective differentiation. Few candidates were entered for 2684, the synoptic paper, but a large number took 2683. Performance was similar to past examinations.

As A2 is assessed via options it is possible for candidates to experience a limited range of geography. The summer pattern was repeated with few centres studying applied climatology and service activities in 2683 and the geography of the EU and managing rural environments remain unpopular in 2684 although not to the same low level as in the summer. This selectivity does re-emphasise the importance of the synoptic paper which draws together the strands 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 again expressed, at AS level, that the arrangement of the papers for electronic marking in the near future, restricted the space for both candidates and examiners. Candidates should not write on the blank back pages but currently they 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.10b in 2683
- 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. This is particularly noticeable at AS level in the short structured answers. The use of paragraphs is still 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 at AS.
- 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 AS level 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.
- 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.

Papers 2680 and 2681 will be scanned in for markers to mark on line this summer. It is important that candidates do only write within the allocated space as instructed.

2680   The Physical Environment

General Comments

Candidate performance on this Unit was in line with that of recent January cohorts, although the mean mark was a little higher. As ever, there was a wide range in the quality of the scripts seen by the examiner team.

Virtually all candidates were able to attempt all parts of each question and it was rare to see parts not attempted. Legibility was usually good and most work was able to be read easily by the team.

As usual, Question 1 tended to produce the best mark for the majority of the candidates. However, Question 3, often the lowest mark achieved, was answered rather better on the whole.

Unusually, there was some evidence of candidates not managing their time effectively so that the final question was sometimes incomplete.

Candidates should be reminded that in order to produce high quality answers and hence achieve high marks on the unit they should:

- read the question carefully, recognising the specific demands of the wording
- use appropriate geographical terminology and a formal, academic style of written English
- explain the statements they make, especially when attempting to link cause and effect
- support their answer with evidence from located examples when required
- learn definitions of key terms.

Comments on Individual Questions

Question 1

1   **(a)**   **(i)**   Most candidates were able to score at least some marks here. Store A was sometimes too specifically identified as "trees" whilst B was frequently "rock". The "water table" itself is not a store, but the uppermost level of the groundwater store and so this was not credited. The flows were usually identified more accurately, although some saw "throughflow" as infiltration or percolation; vertical rather than lateral flows.

        (ii)   Answers were disappointing here and there was much confusion between infiltration (into the soil) and percolation (into the bedrock). The best answers referred to the specific subsurface routes, such as water moving through pore spaces or joints during percolation and groundwater flow. Some focused too much on the above ground flows, especially when dealing with saturated soils. There was a common misconception that if the ground or soil is saturated, then no sub-surface flows can occur.

    (b)   **(i)**   Most candidates gave the correct lag time, although some appeared to measure the time interval from the start of the storm event.

        (ii)   The best answers here provided an overview of the shape, usually described as "flashy". Rather too many answers gave a description of changing discharge over time, without recognising the key components of shape, such as rising and falling limbs, peak discharge and lag time. A number of answers dealt with the precipitation pattern instead of, or as well as, the discharge.

(ii)   Some excellent answers were seen to this part of the question. The best explained a longer lag time by referring to not only the initial interception of precipitation, but also its slow transfer via stemflow and leaf drip. Similarly, a lower overall peak was explained with specific references to processes such as uptake and evapotranspiration. A small number confused afforestation with deforestation and so were limited to Level 1.

The extract below is from an L3 answer that provided clear explanation and good links to the hydrograph:

"The increased vegetation cover means that a higher % of rainfall can then be intercepted. This water then takes longer to reach the river as movements by stem flow and through fall are slower. This also allows infiltration to occur as the rate of water arrival at the surface is slower and less than the infiltration capacity of the soil. As the water moves slowly to the river the lag time will be longer."

2   **(a)**   **(i)**   Whilst most candidates were able to identify at least one flow, many were less secure in their knowledge of outputs. Some were confused with inputs, whilst others did not relate their answer to nutrients at all.

(ii)   This key term was not well defined. Although most candidates had some idea that it related to organic matter, there was uncertainty as to whether this was living, dead or both. Many simply used the term "mass" again in their definition, rather than clarifying what this meant. Very few referred to dry weight and /unit area expressions were not always seen.

(iii)   This question was not answered well. Many candidates made very simplistic statements about the biomass being large because there are a lot of trees. Better answers showed some idea of nutrient recycling and uptake, but very few indeed considered the role of photosynthesis and energy fixation.

The example below shows how the question was sometimes answered very well:

"In a deciduous woodland there is a large number of plants and trees at various layers. This density and variety leads to a large store of nutrients. The litter store is usually smaller as there is quite rapid decay in the spring and the rapid uptake on nutrients from the soil in the growing season keeps the soil store small. The dense vegetation absorbs the sun's energy and coverts it into biomass by photosynthesis."

(b)   Virtually all candidates were able to gain a mark for identification of a valid human activity, but beyond that answers tended to be very descriptive and often focused upon the stores rather than the flows. Some good answers were seen in which candidates linked one flow to another through the cycle.

(c)   Candidates found it difficult to provide a sufficiently clear focus on the question and so tended to reach Level 2 rather than Level 3. Lots of good description of changes in species with distance from the sea was seen and some progressed to Level 2 with explanation of why plant communities become more diverse, taller and denser over time. However, most explanations tended to relate to the amelioration of conditions over TIME due to, for instance, stabilisation of dunes and additions of dead organic matter to the soil. Few made it explicit how this was affecting the SPATIAL pattern. This was a disappointment and was a limiting factor on overall performance of some potentially strong candidates operating towards the top of the mark range.

3 (a) (i) Many candidates scored full marks on this part of the question, recognising the general pattern in the variation of increasing temperature towards the centre of the urban area, and also linking evidence to specific land uses. The best answers also showed an awareness that the rate of temperature change also varied, for example near open water.

(ii) Many candidates had problems with the scale of the situation, providing much detail about the role of humans in what was really global climate change. Many explained the high temperature of the CBD with reference to heat generated by industry, even though areas of industry were shown further out. References to the nature of urban surfaces such as concrete and tarmac were seldom fully developed; it was quite rare to see answers dealing with absorption and re-radiation.

(b) (i) Many answers failed convey any sense of the scale of an air "mass", whilst many others had the scale wrong, referring to "pockets" and "parcels" of air.

(ii) Many correct answers were seen, although there was some inaccuracy in the terms used eg Mediterranean and Atlantic. Air Mass 2 better known than Air Mass 5.

(iii) Many candidates scored Level 1 marks and very few accessed Level 2. Lots of basic descriptive statements were seen, often not even focused on the differences, but simply describing the characteristics of each air mass. Some were sidetracked onto weather conditions rather than air mass characteristics. Those that offered some explanation referred to the origin and/or the track, but very few applied understanding of processes such as evaporation or radiation.

(iv) Answers to this part of the question were disappointing and few candidates had a secure grasp of the processes involved. Many could offer little beyond the fact that the temperatures were low, with many not even recognising that they would need to be sub-zero. Very few referred to dew point temperature or condensation. This was the most poorly answered part of the whole paper.

The answer below is one of the better ones seen and there is a sound understanding of process evident:
"This air mass will be bring cold air from the higher latitudes with some moisture picked up from the North Sea. At night, clear skies mean that the ground radiates heat and may cool to sub-zero temperatures. Moisture in the air condenses as dew point is reached and this freezes onto the ground, aided by the lack of sensible heat transfer in the calm anticyclonic conditions."

4 (a) (i) Most candidates scored two marks here, although quite a number were too vague in the answers. references to America, the Pacific Ocean and the Pacific Plate were far too vague and one suspects that some candidates failed to spot the term "shallow focus" in the question.

(ii) Most answers showed at least some appreciation of plate boundary activity, although many related their answer to constructive or conservative margins. Although they were not assumed to have knowledge of this particular location, the pattern of the depth of foci should have enabled them to determine that subduction was taking place. Relatively few candidates accessed Level 2 as they were either unclear or uncertain about pressure build up and, more typically, the sudden release of pressure. The majority explained with reference to friction as "plates became stuck".

(b) (i) Although the figure was clearly identified as granite, there were a number of candidates who names carbonation or hydration as their chosen process. Some good answers were seen on hydrolysis, but those who opted for freeze-thaw often fell short of full marks by not recognising the repetition of the cycle as being necessary.

(ii) A disappointingly small proportion of candidates appreciated the significance of the joint spacing. Those that did tended to leave their answer undeveloped and few got as far as explain that water could enter joints and weather a larger surface area of rock as a result. Some spent a little too long explaining the causes of the joints, dealing with cooling and contraction and pressure release, whilst some suggested that the initial joints were CAUSED by freeze-thaw, rather than enlarged by the process.

(c) Answers to this final part of the paper were of very variable standard. Weak answers tended to deal with vague human activities such as "pollution" or tenuous links via trampling and footpath erosion. The best answers were those that established very clear cause effect linkages which were explained with reference to specific processes. A good example of this was sometimes seen in answers linking acid rain to rates of carbonation, with good detail provided of the conversion of calcium carbonate to calcium bicarbonate. It was possible candidates to argue that deforestation increases rates of weathering, by exposing rock to fluctuating air temperatures, thus increasing rates of physical weathering OR that it decreases rates by removal of tree roots which decreases rates of biological weathering. They key in either case is to argue the point logically and link to the specific process.

The extract below is from a L3 answer that does provide explicit links to weathering processes:

"Burning fossil fuels in factories and industries releases carbon dioxide into the air. This is absorbed by water droplets and so the acidity of rainfall is increased. On limestone this rainwater can then weather limestone more rapidly by carbonation as calcium carbonate is converted into soluble calcium bicarbonate".

2681 The Human Environment

General Comments

After fifteen examination sessions, since January 2001, the style of questions and the overall structure of this paper are likely to be very familiar to many centres and candidates. At this stage the content of the specification is well known and it is evident that it is covered comprehensively in most centres. Nevertheless, the outcome in terms of candidate performance in this module remains diverse; this particular January examination paper effectively produced a very wide range of marks amongst the candidature.

In the light of these comments therefore the general remarks, below, are similar to those of previous reports. The intention is to place emphasis on a number of issues which have arisen in this examination session and which also have been recurrent during recent years.

There were a number of high quality scripts at the upper end of the mark range. These better answers were characterised by:
* detailed analysis and interpretation of the resources
* clarity in the written explanations, where quality of language and correct use of specialist terms enabled candidates to write concisely and precisely
* explanations which were supported by brief examples, even in the shorter sections.

In addition, in the two extended sections, good practice included:
* application of detailed case study knowledge
* explicit links / references to the exact demands of the question
* preparation of brief plans, providing structure and clarity
* evidence of fieldwork, which tended to reinforce and enhance understanding
* relatively small but effective, well labelled, sketch maps and diagrams.

Problems remain for those candidates who achieved marks in the lower ranges:
* failure to respond correctly to specific command words
* lack of precision in definitions
* limited development of explanations beyond simple statement of basic factors
* inability to apply understanding of basic principles and concepts to the 'unseen' data provided
* limited use of specialist terminology
* thoughtless reproduction of rehearsed answers without adaptation to the specific question set, especially in the two extended sections.

In particular at this lower level, in the two, 10 mark, extended sections, many candidates produced 'generalised' responses. For example, if the only place knowledge offered was the word 'Thurston' or 'Chalgrove' and the rest of the answer was applicable to any rural area, then it was identified as 'generalised'. It has been long established that this type of answer is awarded a maximum of 6 marks, ie in Level 1 or Level 2, see all previous mark schemes.

These general comments are discussed further and exemplified as follows. This section also includes candidates' responses to specific questions. The answers provided, in italics, in this particular report were not necessarily awarded full marks. They are copied verbatim including errors, spelling mistakes, misconceptions and varying degrees of accuracy in terms of factual information and grammar. Used in conjunction with the mark scheme they may be helpful to centres in preparing candidates for the remaining three sessions in which this specification will be examined. It might be instructive for pupils to attempt a marking exercise for each of the parts. With reference to the discriminators, which are stated in the mark scheme, they should first decide on the level; a mark should then be awarded within the level depending on the

further requirements of the mark scheme. In this Report to Centres one answer per question is provided for this purpose. In that of June 2007 a similar approach is taken where more than one response for each of the part questions is provided; this also may be of help in identifying different levels of achievement.

Comments on Individual Questions

1   Population

Question 1 examined: changes in population structure through time; influences on life expectancy and birth rates; and, the causes of international migration. By and large, candidates demonstrated good understanding of these relatively familiar questions although there was some difficulty in describing population structure in Q1a.

For **Q1a** the main stimulus material was the two population pyramids of Zambia in 1980 and 2006; the changes in population structure through time illustrated Zambia's progress through demographic transition and comparison was invited. Marks awarded tended to be mostly in Level 1, partly because candidates did not seem fully aware of the requirements of the command word 'compare'. Often there was reference only to differences, with little recognition of the similarities. Of greater concern was the failure of many candidates to summarise the patterns; this is a long established requirement of describing questions on this paper. Many responses referred only to individual bars in the graphs or more vaguely to birth and death rates. Some candidates attempted to include unnecessary explanations. The better responses did include comments on the youthful, elderly or more 'economically active' sectors of the population. There were also many sensible responses in which significant age groups were referred to such as the under 24s or the over 64s.

Between 1980 and 2006, there has been a significant increase in the proportion of the population aged under 24, with 1.0 million females and over 1.0 million males being aged 0-4 in 2006, whereas 0.58 million females and 0.59 million males were in this age category in 1980. In 1980, therefore, the birth rate was high as in 2006, but the infant mortality rate may have decreased, meaning that more babies survive past their first birthday. In 1980, there were fewer than 0.2 million males aged 25-29, whereas in 2006, there were over 0.4 million males and over 0.4 million females in this age category. There has been little change in the over 64 groups, with less than 0.1 million surviving to this age.

Q1b required brief explanation of Zambia's the low life expectancy. Specific knowledge of this country was not needed; answers could include generic reference to LEDCs at a similar level of development and most candidates took this approach. Many demonstrated good understanding with clear statement of a factor, plus explanation of the reason, followed by further development or even related exemplification of the point.

Zambia is a less economically developed country which has poor sanitation and therefore water borne diseases such as cholera can be easily contracted. Since they do not have the medicine available to prevent and treat this disease, many people may die as a result, hence the low life expectancy.

Q1c was well answered. Fig. 1, a table showing the crude birth rates of selected MEDCs and LEDCs, provided data for a wide range of national CBRs. These figures were specifically referred to in the better answers. In the Level 2 answers, candidates demonstrated good understanding of two reasons; they also made explicit links between the reason and the impact on the birth rate. Level 1 answers tended to include only one reason and often there was no specific reference linking that factor to its effect on the CBR or indeed to level of development.

In LEDCs, the infant mortality rate is much higher than in MEDCs, therefore the birth rate is much higher as families need an insurance that some of their children will survive to adulthood, as it is likely that at least one child will die before the age of one. In MEDCs, women are often educated much better than those living in LEDCs consequently they may choose to have a career first then have a small family later in life whereas for women in LEDCs this may not be an option as such education is not available to them.

The first extended question on this paper, **Q1d**, was relatively straightforward in its requirement to explain the causes of international migration, yet there were many totally inadequate responses. In particular a surprising number of candidates were intent on reiterating a response to a past question which they had learned by rote and which they were determined to write out regardless of the question. The extent to which some candidates showed no regard to the precise wording of the actual question set is a worrying trend reported by assistant examiners. Surprisingly there were answers on the effects of rapid population growth on urban areas in LEDCs, complete answers on the Chinese policies for birth control, full responses on the consequences of migration, accounts of the population distribution of a country and even the effects of counterurbanisation. These answers were written out in full without any reference to the question at any stage. There were also some slips by those candidates who in their haste perhaps more understandably misread the question as internal migration but these were relatively few.

On the other hand and more reassuring there were some outstanding responses in which candidates were able to demonstrate their understanding by applying a wide variety of examples to illustrate a range of social, economic, political and physical factors. Frequently cited examples included Mexicans moving to the USA, Turks to Germany and Poles to the UK. The post war movement of Italians to Bedford and the post apartheid movement of South Africans to Australia formed the basis of other good responses.

There are a variety of reasons why migrants may choose or be forced to migrate across a national border. For example, migrants from Poland may choose to migrate to England because they perceive it as having greater employment opportunities, better education for their children and better housing than would be available to them in their home country. They are, therefore, economic migrants as their incentive to migrate is driven by capital reasons. In some cases the perceived benefits of greater prospects such as higher wages are not necessarily a reality. Other reasons for migrating may be that due to a natural disaster, such as a tsunami or volcanic eruption, people may be forced to leave their home country in order to survive. If the location of their home town lies close to a national border, they may feel that they have no option than to cross it in order to be safe and flee from the danger. Some migrants may feel threatened living in their home country and so migrate in order to flee from persecution due to their ethnicity or religion. For example, during the Second World War Jews who feared persecution fled to countries to escape persecution. This is an example of international migration when those from Germany fled to France or England.

2   Rural Settlement

Question 2 examined the concepts which underpin the distribution of rural settlements within the functional hierarchy; it also required candidates to show an understanding of population change in rural areas and disadvantages brought about by this change.
Overall this was the least well answered question of the three on this paper. Many candidates found difficulty in explaining the relationship shown on the scatter graph in Fig. 3 and others were unable to develop their explanations of counter urbanisation in any convincing way. Furthermore, and for the second time on this paper, in the extended question many candidates failed to adapt previously rehearsed answers to the exact requirements of the particular question set in this instance.

Q2ai required definition of the term the range of a good or service. Most candidates had some idea of the notion of distance travelled to obtain services but often responses were imprecise; the concept of range involves the maximum distance people are prepared to travel. A surprising number of candidates erroneously referred to this term as the variety of goods and service found in a central place.

The range is the maximum distance that a customer is prepared to travel in order to obtain a good or service.

Q2aii was answered well by most candidates. The scatter graph in Fig. 3 illustrated the relationship between population and the number of shops and services in rural settlements in part of East Suffolk. The scatter of points on the graph showed a positive relationship and most candidates were able to identify this in terms of the higher the population of a settlement, the greater the number of shops and services.

The relationship shown is that as the total population increases, the total number of shops and services provided increase too.

There was however much greater difficulty in explaining this relationship as requested in **Q2aiii**. A common misconception amongst nearly all but the best candidates is the broad idea that threshold populations are the same as the settlement population, therefore larger settlements have larger thresholds. The reality is that shops and services, which tend to require a minimum number of customers in order to remain economically viable, are able achieve their threshold more easily in the larger settlements. This depends on the nature of the shop or service in terms of its relative order; high order (requiring a large threshold, often met only in the larger centres) or low order (requiring a lower threshold population, often able to survive where populations are small). There are anomalies such as large settlements with a dormitory function which support few services (often because many of the residents commute and shop in the nearest urban area) or small settlements with a tourism function where many shops and services are supported by visitors. Few candidates were able to explain the concept of threshold population and it was extremely rare that reference to different orders of functions or anomalies, such as those indicated on Fig. 3, was made.

If there are more people in a settlement then more higher-order services threshold population can be met (ie the minimum number of 'customers' a service needs to remain viable) and so the more higher-order services there are. Also as the population gets larger the more services there can be of the same order as these can meet additional threshold populations - ie there can be more than one butcher / baker in the settlement.

Q2b asked for two reasons to explain counterurbanisation. Limited development of explanations was often the main reason why a number of responses were confined to Level 1. The majority of better responses provided full accounts of such factors as movement away from the negative externalities of urban areas, retirement migration, the benefits of rural environments for raising families and, increasing personal mobility and the ability to commute to work.

1. Due to an increase in personal mobility people living in MEDCs may choose to reside in accessible and rural areas, rather than urban areas, because they can benefit from the pleasant environment, whilst being able to travel to work and access services in the rural area using their car, for example.

2. Due to advances in technology, the level of teleworking has become more common, meaning that people no longer have to necessarily travel to their place of work as they can benefit from technology such as broadband internet, in order to work from home.

The final part of this question, **Q2c**, was a 10 mark extended section. Candidates were required to explain the disadvantages brought about by population change in an MEDC rural area or areas. Exemplification included amongst others: Iona; St Johns Chapel; Aliano; Thurston; the Gower peninsula; the Framlingham area; the Isle of Purbeck; and, Longnor. These diverse localities are all valid and afforded candidates the opportunity to discuss a wide variety of population changes.

There were a number of high quality answers; the socio-economic changes taking place in rural areas which have experienced problems as result of loss or gain of population were well covered. Candidates achieving the highest marks moved beyond simply outlining change or rural problems. Their answers referred explicitly to the way in which these changes had become disadvantages and often these were identified with respect to effects on specific groups within the rural communities involved.

The problem for many candidates as in Q1d remains one of application of their place knowledge to the precise demands of the question. There were many answers in which a previously prepared response was reiterated and no attempt was made to relate it to the specific context of this particular question. This is a further reminder that at the very least, candidates must be prepared to adapt and modify rehearsed answers with respect to the question set; few marks can be awarded in AO3 (application of knowledge and critical understanding to unfamiliar contexts) as a result of thoughtless reproduction of previously learned answers which do not answer the question.

The rural region of Lincolnshire is relatively inaccessible with very little dual carriageway and no motorway, yet its population is rapidly increasing. The village of Whaplode lies on the A151, a major link between Spalding and Holbeach and the services that it provides, including 3 fast food takeaways, 2 public houses and 2 petrol stations, reflect characteristics of a commuter settlement. As a result, those who are retired, for example, have lost services which would be of greater benefit to them, including a Post office. This makes it increasingly difficult for them to access their pension fund, for example. The village of Holbeach Hurn, which is situated 4 miles away from Holbeach along a narrow, unclassified road, has experienced significant population decline in recent years. This is a relatively inaccessible village, where the value of 47.5% of residents owning 2 or more cars does not necessarily indicate wealth, but rather social exclusion. In order to travel to work, they require their cars, which may be old, but as there is no bus service they have no other means of travelling to their place of work. The Post Office closed 7 years ago and the closing of the local primary school preceded this. The lack of services here has lead to a lack of employment and so the residents must travel to work by car. Consequently, social exclusion has resulted, with those who can afford to, leaving the area, meaning that the elderly remain.

3   Urban Settlement

Question 3 examined: the concept of urbanisation; the provision of housing and jobs in LEDC cities; causes of urban growth; and, the environmental problems arising from urban growth. The information provided in the insert was a simple line graph of the population growth of Mexico City between 1905 and 2005. Scoring was relatively high on this question and it is pleasing to report the progress made in development of explanations of urban growth including both net migration gain and natural increase. The term urbanisation, however, is still widely misunderstood.

Q3a required a definition of urbanisation. Many candidates incorrectly believe this term to be synonymous with urban growth; most were unable to state clearly that it is the increase in the proportion of people living in towns and cities in a country or region, and not simply the percentage of urban dwellers per se. Others were even more confused, and to illustrate the problem four responses which were by no means untypical, are provided below:

Urbanisation is the increase in the proportion of people living in towns and cities in a region or country.

Movement of people to urban areas from rural areas to city centres.

Moving to a centralised urban area.

Urbanisation is the movement of people to an area where the majority of people are employed in either industry or service industry.

Q3bi was answered well. By now most candidates have become familiar with the correct procedure for describing a line graph such as that shown in Fig. 4 (population of Mexico City 1905 to 2005). There was frequent correct reference to overall growth and, more significantly, to changes in the rate of growth, each change being supported by actual figures / dates from the graph.

The population has started to increase from 1905 (where the population was 1.5 million) in an exponential fashion (doubling every 10 years) every year until 1979 when the increase in population changed from being exponential and decreased in terms of the rate of growth until 1995. From 1995 the rate of population growth increased again but began to 'flatten out' in 1999 until 2005 where the population was 18 million.

Q3bii required candidates to explain two possible reasons for the growth in population shown in Fig. 4. Specific knowledge of factors causing population growth of Mexico City was not required although this is a well known example and many candidates provided much detailed information. More important was the understanding that urban population growth in any city is caused by net migration gain and natural increase. Where these two factors were explained marks were awarded in Level 2. A common Level 1 response included discussion of internal migration only with reference to one or two push / pull factors.
The best answers linked net migration gain to the young age of most rural migrants and to the relatively high birth rates and decreasing death rates within the urban area. This would be applicable to many large urban areas in the developing world leading to exponential increase in the rate of population growth (at least until more recent deceleration).

Urbanisation growth in LEDCs is due to a poorer standard of living in rural areas with lack of health or education facilities. Therefore people move to urban areas in order to improve their education, in order to get a better job, and also because the city has a large informal work sector which means a job can be created whereas in the rural areas the only employment is in agriculture. Population growth could also be due to natural increase with the number of births being greater than the number of deaths. Because of the high infant mortality rate women have lots of children but the death rate is beginning to decrease because of better access to health facilities in the urban areas causing an increase in population.

In Q3c candidates were asked to explain why provision of housing and jobs is difficult in LEDC cities.

Q3ci dealt with housing issues; many candidates were able to offer reasons such as the rapidity of population growth, the poverty of the rural migrants and the poverty of the urban authorities. Responses such as these, if well explained, were placed in Level 2. The reluctance of many urban residents to move out of squatter settlements and into low cost housing developments was another reason for the difficulty in housing people in all but the most basic self made shacks. The lack of space available for housing development near to employment opportunities was another frequently cited answer. The more simplistic answers which perhaps provided little more than a description of housing conditions in LEDC cities were placed in Level 1. Understanding was often enhanced in those answers which included brief reference to specific named intra-urban localities in support of the explanation.

Because many of the migrants arriving in the cities do not have enough money to pay for houses provided by the authorities in the urban areas. The authorities also do not have enough money to build enough houses for the large numbers of migrants because many of the cities urban dwellers live in shanty towns away from the detection of the authorities which means they do not pay tax so there is not enough money to provide housing.

Q3cii dealt with the employment issue in LEDC cities. Again there was much reference to the false perception of opportunities in urban areas by rural migrants coupled with the very rapid rate of population growth. The limited skills of many rural migrants and their low level of education / qualifications were other frequently given reasons.

The vast numbers of migrants cannot all be provided with jobs especially because many of them are poorly educated due to lack of facilities in the rural areas and well as unskilled because the only other employment experience is in agriculture. This is made worse by the informal sector of work which employs most of the migrants because people do not pay tax because it is cash in hand therefore the authorities do not have much money to put towards new jobs for the migrants.

Finally **Q3d**, a question which has appeared in a number of extended questions was asked here in a 6 mark shorter section. It asked for explanation of two environmental problems arising from urban growth in LEDCs. Inevitably a more concise answer was required but this presented few problems to the better candidates, except where the link between urban growth and environmental problem was not made.

There was good understanding of problems such as air pollution and the effects of squatter settlement expansion on deforestation, disposal of domestic waste and sewage and landslides. In many instances candidates supported their answer with credit-worthy intra-urban place specific detail of Mexico City or Cairo.

Air pollution has arisen in LEDCs due to urban growth as industries have grown in response to the relatively large demand for work and the large work force and so particularly the air quality has decreased due to the influx in pollutant gases (carbon monoxide, sulphur dioxide) from factory chimneys that have arisen due to this large cheap workforce. Water pollution has arisen in LEDCs due to the squatter problem primarily as authorities cannot provide sewage pipes / facilities as they are developing too quickly and the authorities are too poor to expand the services to these areas. Waste gets dumped into canals / water and drinking water becomes polluted due to this, causing a high incidence of disease.

In summary, on this paper as a whole, higher marks tended to be achieved for Question 1 (population) and Question 3 (urban settlement); Question 2 (rural settlement) produced more limited scoring.

2682-01 Geographical Investigation (Written Paper)

General Comments

The questions proved more accessible to Candidates than in June 2007. Candidates accessed the full range of marks – very able Candidates produced excellent, detailed papers and there were fewer weak papers as lower ability Candidates were able to access some of the marks available, except in Question 3 (b). Many Candidates demonstrated a good grasp of the relevance of their own investigations, which was utilised in Questions 1 and 2. Geographical theory and skills were well understood by many Centres, suggesting close attention had been paid to preparation for this written skills paper in addition to the personal investigation. 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 show purpose of stage 4 in the investigation and to justify a graph used in the investigation. Differentiation was determined by the level of detail for the depth of discussion in (a) and the justification of the selected graph in (b).

The objectives of Question 2 (a) and (b) were to show how maps and photographs can be used in a geographical investigation. Discrimination lay in the ability to explain and justify their usage.

The objectives of Question 3 (a) and (b) were to select an appropriate form of sampling for a given topic and to suggest how measures of central tendency could be used to analyse such data. Discrimination was determined by the ability to (a) describe appropriate representative methods of sampling; and (b) discuss how to the method of finding the mode, mean and median and to discuss their attributes.

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) for describing data collection; in Questions 2 (a) and (b) for saying how maps and photographs cannot be used in and investigation; in Question 3 (a) for collecting data from across the whole city rather than the centre; and in Question 3 (b) for considering central place theory and measures of dispersion and statistical techniques.

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 maps for Questions 2 (a); this was made by few Candidates.

Candidates found the level of difficulty for this paper similar to January 2007 and easier than June 2007. 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. Questions 3 (a) and 3 (b) proved more challenging. All questions discriminated between Candidates well.

Question 1 (a) responses were excellent overall. The full range of marks was covered, with most achieving at least the middle of Level 2 and many entering Level 3 and gained full marks. There was good reference to stage 4, but many otherwise excellent responses did not refer to their own investigation.

Question 1 (b) responses were excellent overall. The full range of marks was covered, with most achieving at least the middle of Level 2 and many entering Level 3; few remained in Level 1. This was an easily accessible question for almost all Candidates, with few selecting inappropriate graphs or charts. Scattergraphs and bar charts were commonly suggested and were well justified.

Question 2 (a) responses were good overall. There was a good spread of responses, with most Candidates entering Level 2, a good number in Level 3 and few remaining in Level 1. The best responses tended to select one OS Map and one topic based map. Awareness of the exact content of 1:50,000 and 1:25,000 maps is often limited.

Question 2 (b) responses were good overall; with responses mostly in Level 2, some in Level 1 and some in Level 3. The application of photographs was commonly in terms of explaining data collection techniques and supporting the interpretation of the data. Less developed responses typically suggested photographs gave evidence that the Candidate carried out the work.

Question 3 (a) responses were moderately good overall, many Candidates being in Level 2, few in Level 3 and a lot in Level 1. Stratified and systematic sampling were frequently confused and many do not understand that stratified sampling must be accompanied by another type of sampling. Many did not read the question properly as they chose to sample across the whole city. Many suggested strata but did not correctly justify how to achieve these strata in the field.

Question 3 (b) responses were poor overall, with many gaining no credit at all, some staying in Level 1, a few entering Level 2 and very few in Level 3. Many did not understand the question. Although some discussed measures of central tendency, many talked about sphere of influence, central place theory, what the data shows, measures of dispersion and statistical tests.

Candidates were particularly able to apply their experiences of the Personal Investigation in answering Question 1; although not required to do so, many also referred to their Personal Investigation in order to answer both parts of Question 2. Candidates were less able to deal with the Question 3, which was not based on their Personal Investigation, but required application of their knowledge of sampling methodology and understanding datasets as part of the investigation process. 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: Analysis includes the use of descriptive statistics (eg central tendency, measures of variation) and analytical statistics (difference between samples (Mann-Whitney), association between samples (Spearman's, Chi-squared); it can also be the use of satellite images, air photographs, GIS, simple statistical software and ICT; it is important to consider only appropriate or relevant data from that collected (ideally only relevant data was collected in the first instance). Interpretation is undertaken to provide the outcomes of the investigation by considering what the results of the analysis mean, eg patterns, relationships, differences, links, anomalies; it identifies possible explanations for these outcomes, ie the impact of factors upon

data. The final part of this stage is evaluation which considers whether the findings meet the investigation objectives and offers reasons, eg inappropriate sampling, adverse weather, factors previously unaware of; it relates outcomes to geographical theory. The explanation of outcomes may be considered part of evaluation rather than interpretation. Alternatively, evaluation may be regarded as part of the summary, ie consideration of the performance of the investigation at all stages, ie the choice of question for investigation, the strategy used, the data collected and the analysis and subsequent interpretation. The relationship between analysis, evaluation and interpretation and other stages of an investigation is important. Regarding the question for investigation, the evaluation shows whether this has been met and if not why not. The strategy determines the data to be collected for subsequent analysis and interpretation: evaluation considers whether and why this was a good approach. Analysis makes direct use of data collected, whilst the evaluation considers whether and why this was a good approach. The analysis, interpretation and evaluation feed into the final summary including suggestions for improvement.

Qualities of A grade Candidates: The explanation of the purpose of stage 4 is discussed in detail. Two or more of analysis, evaluation interpretation and linkage between stage 4 and the other stages of an investigation are considered. The functions of the three components are clearly understood. The Candidate refers to his/her own geographical investigation.

Other Comments:

Many made good use of their own investigation throughout the answer. The most able Candidates covered analysis, interpretation and evaluation in a logical manner, understanding the purpose of each component of stage 4. Many also made appropriate links with one or more other stages of the investigation. Middle ability Candidates concentrated on fewer components of stage 4 and gave less detailed explanations or repeated one or two points in several ways; in particular many Candidates laboured their references to statistical tests. Some did not specifically allocate function to the component, whilst others were rather confused. Quite a few erroneously discussed data collection and representation as well as the appropriate discussion of analysis using statistical methods. Weaker Candidates gave even less detailed answers and tended to stray into what they found rather than the purpose of this stage. Many otherwise able Candidates failed to gain high marks as they did not refer to their own investigation. Throughout the cohort interpretation was the least well understood component.

Question 1 (b)
Indicative content: Appropriate graphs or chart type include: bar chart, histogram, or compound versions of these; pie chart; proportional circle; cross section or profile; line graph; scattergraph; dispersion graph; located graphs; or a tally chart. The characteristics of the graph or chart include a title, a key, labelled axes with units of measurement. Other characteristics include the essential shape/features of graph/chart, eg points, bars, lines, segment of a pie chart, joined up points, a line of best fit, anomalies. These may be used as part of the justification which also typically refers to ease of use; ease of construction; how the graph or chart shows a relationship, the spread of data or change in conditions on transect; a graph may also be used for the interpolation of data, eg from a line of best fit.

Qualities of A grade Candidates: The description and justification of chosen representational technique is discussed in detail. The labelled diagram includes nearly all of the required features. The justification discusses how data can be interpreted. The Candidate refers to his/her own geographical investigation.

Other Comments:
Very few Candidates did not attempt to draw a diagram. A wide range of relevant graph types were included, scattergraphs being the most common, followed by bar graphs, line graphs and pie charts. The inclusion of the word "chart" in the question meant that techniques such as tally chart had to be accepted; this may also have led some Candidates to erroneously suggest the

use of tables. The most able Candidates drew diagrams that included most of the important characteristics of a graph or chart. Their justification went beyond saying that it was easy to construct and interpret the information to suggest how it could be used for statistical interpretation. Scattergraphs and bar graphs lend themselves well to justification (correlation, line of best fit, anomalies, preparation for Spearman's Rank Correlation Coefficient). Few Candidates did not refer to their own investigation. Middle ability Candidates tended to present fewer features of their chosen graph or chart (typically omitting the units of measurement, scale, title; independent and dependent variables on incorrect axes) and to have weaker justification. Some confused scattergraphs with line graphs. Weak Candidates showed an inappropriate technique or gave little justification for an appropriate technique. A few Candidates did not understand the term 'graph' and produced choropleth or isoline maps.

Question 2 (a)
Indicative content: The type of map may refer to scale (eg the Ordnance Survey at 1:5,000, 1:10,000, 1:25,000 or 1:50,000) and/or subject matter (eg geological; soil; land use; Goad). The map could be smaller scale such as found in atlases and can make use of a region within a country, the whole country, regions within continents, whole continents or even global. They may be topic: based atlas maps of the climate, geology, land use, physical geography, ocean currents, vegetation or population. A map may be surveyed by the Candidate – and it could be as simple as a sketch). Techniques that use maps as base layers include: choropleths, isolines, flow lines and located graphs. There should be an appreciation of what is appropriate for a particular scale, eg at 1:25,000 the general location of a site for investigation is identified; the route to sampling sites (road network) is decided, as is the selection of specific sampling sites (including feasibility); they are used for risk assessment and to give information about access to sites; they are used in strategy, data collection and analysis, evaluation and interpretation stages. A region of country on a smaller scale map shows location and can be used to compare locations; it is useful as base map for adding data, eg flow lines; it may be used in the strategy, data collection and analysis, evaluation and interpretation stages. An appreciation of what is appropriate for a particular subject matter can be made, eg Goad Maps show detail about land use in large urban areas; they are usable as the basis for adding data or updating the Goad Map; they can be used in the data collection and analysis, evaluation and interpretation stages.

Qualities of A grade Candidates: The explanation of how to make use of two types of map is discussed in detail. The map types are named. The uses made of the maps are relevant to the scale and/or topic of the maps, eg a 1:50,000 map is less detailed than a 1:25,000 map, but still includes all roads; choropleth maps are used for area based data.

Other Comments
The most common map types suggested were OS maps at various scale, Goad Maps, choropleth and isoline maps. As ever, choropleth was not spelt correctly. Few had no knowledge of maps other than what they had used in their personal investigation. One Candidate even referred to topological maps such the London Underground. Many wrote about sketch maps well. Higher ability Candidates identified two different maps (typically an OS and another type) and clearly understood their function and how to apply them in a geographical investigation. Many suggested the stage(s) in the investigation in which maps can be used. Candidates that discussed OS Maps at two different scales were well aware of their characteristics. Maps overlaid with a technique were often accompanied by a drawing of it. Some middle ability Candidates did not understand scale (eg suggesting that villages are not shown on 1:50,000 maps, and their suggestions for the use of maps were somewhat limited. Others confused isoline and choropleth maps. In the case of choropleths, they did not understand the need to have area data as the base map. Many discussed the use of maps to establish change over time. The use of maps in the strategy stage was commonly referred to, with the objective of ensuring that accessible, risk free sites were selected. Weaker Candidates did not offer an appropriate or any name for their chosen map types. Their explanation was limited in range and depth of suggestions. Some confused aerial photographs with maps.

Question 2 (b)

Indicative content: The type of photographs include the following: published, eg book/journal, internet; aerial; unpublished, eg school, field studies centre; the Candidate's own or his/her peers. Photographs must have the following: a title indicating content and location; appropriate annotations (brief text not complete sentences); the scale should be apparent (by using people or clearly sizable objects such as cars) or added a scale next to the photograph; a cross reference from the point at which they are mentioned in the text is important. Photographs may be used in the strategy stage: secondary data may be a source of information to assist with planning the investigation; the photograph may not actually be part of the final report. In the data collection stage photographs taken when collecting data could be the Candidate's own or from another source; they can be inserted in the investigation alongside (or following) other data so that their relevance to the investigation is clear. In the analysis, interpretation and evaluation stage photographs provide supporting evidence to help explain the outcomes of the investigation, eg to show anomalies, to show why the results did fit with expectations.

Qualities of A grade Candidates: The description and justification of use of photographs are discussed in detail. The Candidate is likely to consider the application of photographs in different stages of the investigation as well as presentational issues. Exemplification of the use of photographs from personal knowledge clarifies the response.

Other Comments:
Few Candidates noted the specific need to give a title and reference number to a photograph, although many did note the use of annotations. Many could not resist referring to the phrase "a picture paints a thousand words." Reference to aerial photographs and satellite imagery was a welcome contribution from some Candidates. Higher ability Candidates methodically considered how photographs can be used in several stages of the investigation, thereby referring to a range of possible uses. Middle ability Candidates typically said that photographs can be used as proof that they did the work! More realistically many said that the photograph gave evidence of how the work was carried out (particularly referring to the equipment used) and as support for their interpretation of the results. The description of the use was usually not as clear as the justification. There was a tendency to be vague. Some weaker Candidates deviated into a discussion of why photographs are not suitable for a geographical investigation or why they did not use photographs. The limited development by these Candidates often referred to information the examiner about the study area – and a few suggested that it gained empathy from the examiner! A few Candidates did not attempt this question, but this was not a Centre wide characteristic.

Question 3 (a)

Indicative content: The sampling approach needs to cover the following types of information. It must be carried out at the city centre [it is hard to justify at residential areas as this would require a large dataset and it would not be possible to know how far to sample from the city]. The sampling type can be a transect, grid or random. The selection of sampling points can use systematic, random, stratified systematic, stratified random, or stratified opportunistic [stratification is most suitable based on land use or mode of transport locations]. The sampling of shoppers at the chosen points can be systematic, random, stratified/random or stratified/opportunistic [stratification can be based on gender or pre-set age groups]. The number of sampling locations and their distance apart can be considered. The sample size may be given as a figure or indirectly through the discussion of duration, times of day and days of week for sampling at each point. Simultaneous sampling with a group is a valid approach. A questionnaire is most appropriate form of making contact. Rejection of alternatives is credited.

Qualities of A grade Candidates: The description of data collection method is discussed in detail. The data collection method is appropriate and logical, eg samples are made at the city centre, strata are possible (age strata are hard to achieve in this context); sample size is referred to (including indirectly when referring to duration of taking sample) and it is appropriate. The Candidate understands the difference between stratified and systematic sampling. The representativeness of the methodology is clear.

Other Comments:
Many Candidates still confuse systematic with stratified sampling and pragmatic with random sampling; furthermore many do not understand that stratified sampling has to be accompanied by another level of sampling such as pragmatic, random or systematic. Higher ability Candidates selected a sampling strategy that was appropriate and practical. They chose a suitable sample size either by suggesting a number of questionnaires or indirectly in their discussion of the times and method of sampling. Good answers were often the simplest, eg several sites in the CBD sampled systematically several times per day several times a week; gender stratification was easily justifiable. Many middle and lower ability Candidates deviated into a description of the content of a questionnaire, which was not required for the question. They often produced difficult, unworkable schemes, eg they looked at sampling across the whole city; they selected strata based on the age of shoppers (rather than a more workable suggestion of an equal number in a range of age categories); others had several strata that would require a large sample. Some considered sampling at different transport mode terminus locations but they usually did not look at all modes. Using car tax discs was a poor solution. The weakest Candidates simply 'name dropped' sampling methods but did not explain what they were.

Question 3 (b)
Indicative content: The mode is the most frequently occurring value. It can be used to identify the bimodal distribution of the resource; it is not affected by the extreme values of the resource; since the resource is grouped data, the mode is not very precise as it depends on size of groupings; it cannot be used for further data analysis. The median is the midpoint of a dataset arranged from highest to lowest; it is not affected by extreme values; equal weight is given to each item regardless of value (high, medium, low); it can be used for some further data analysis. The mean is the sum of all values in a dataset divided by number of values; it is distorted by extreme values – it is best if there is a normal distribution and it is not widely spread – which is not the case for the resource; it is unreliable when dataset is small – this value is not given for the resource; it can be used for much further statistical analysis. The relationship between measures is useful: the resource has a positive skew: the mean is greater than the median which is greater than the mode; to be a normal distribution: mean = median = mode. This question is not about the detail of deviation, variability and dispersion.

Qualities of A grade Candidates: The explanation of how two or more measures of central tendency assist with analysis is discussed in detail. The Candidate goes beyond describing how to find the mode/mean/median, eg extreme values and the use of central tendency in further statistical analysis are discussed. Figure 1 is referred to.

Other Comments:
Central tendency was not understood by many Candidates, even those who had performed well in the remainder of the paper. Inappropriate responses included a discussion of central place theory, the sphere of influence, a description of what the graph showed, the use of measures of dispersion and standardisation, and the application of Spearman's Rank Correlation or Mann-Whitney to the data. Most Candidates referred to the figure, but this was invariably in the context of an inappropriate discussion of central tendency. Better quality answers described how to find each of the mean, mode and median and then discussed their limitations. A few understood the problems presented by the use of the grouped data in the figure. Less able responses usually did not discuss limitations and invariably included measures of dispersion and standardisation. The weakest creditworthy responses simply list the three measures or described how to find one of them.

2682-02 Geographical Investigation (Report)

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. Geographical terminology is assessed and care must be taken that the correct terms are used, eg discharge is not the same as velocity.

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.

There was evidence that insufficient time was spent on data collection, eg three sites on a river study or 20 questionnaires assessing sphere of influence will not give very useful results.

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

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.

1   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.

2   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.
- If *statistical tests* are carried out they must be referred to in the text.

- If graphs and other ***materials are scanned*** in, care should be taken to maintain quality (legibility/clarity).
- However, good presentation needs to be accompanied by good geographical content!

(b) ***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; sand dune transect data.
  - 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 and Candidates are unlikely to achieve high marks with a weak stage 4. 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. A title should make sense and be achievable, eg 'Channel width will increase with river length' does not imply that width measurements compared at various intervals down a river.

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 made sensible reference 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. If geographical theory is referred to, it was not commented on in this stage or later in stage 4. Words were often wasted by discussing rejected strategies. If a Centre carries out multiple field days from which each Candidate selects one, care must be taken that the strategy makes sense, eg the sea is not a risk for a study of an inland urban area. 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. Sampling procedures were not justified.

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 as the latter did not attempt to explain results (including patterns, relationships and anomalies); 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. Many Candidates made good use of annotated photographs. 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 (if at all). If data has been collected, it must be referred to in this stage, eg a questionnaire may be supplementary to the investigation, but if carried out, it should form part of the analysis. Conversely, irrelevant data should not be collected, eg pH and soil moisture are not relevant to wind speed across dunes.

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. Many Candidates incorrectly refer to rejection of data rather than the null hypothesis – the data is not necessarily incorrect, but it may not satisfy the predicted outcome.

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) wais 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 and/or hypotheses and geographical theory, 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.

2683 Options in Physical and Human Geography

General Comments

Of the 2, 400 candidates who sat this session's paper there was a wide variety in the quality of response. All members of the examining team were pleased to read good numbers of encouraging scripts in which substantial knowledge and authoritative understanding were clearly evident. Those scripts that did not match this high standard, in large part, simply failed to answer the question set. The exam highlighted a number of points, all of which have been noted before in previous reports but which bear repeating.

- Scripts that contained convincing descriptions and explanations were sharply focussed on the question set, displaying an appreciation of what knowledge and understanding to apply to the particular context of the question.
- Moderate and weak scripts were characterised by a 'write all I can remember about the topic' approach.
- Some candidates are making effective use of diagrams and sketch maps to communicate knowledge and understanding. The complete absence of such visual communication in a large number of scripts results in complicated and often unclear descriptions in particular.
- Too many responses contain little or no references to examples and examiners struggle to find any 'place' to credit.
- Some candidates communicate with a clarity of language that is most impressive but others do not and are hindering their attempts to answer through a lack of precision of expression. Examiners continue to voice their concerns about the overall quality of spelling, punctuation and grammar. There are also too many scripts with no evidence of the planning of answers.

Comments on Individual Questions

Option 1: Coastal Environments

1 There were many fine descriptions of the causes of relative sea level change. It is most heartening to read accounts that convey such authoritative knowledge and understanding that leave the reader in no doubt as to the candidate's engagement with the topic. The best descriptions not only dealt with glacio-eustacy and glacio-isostacy but also were able to describe how, for example, there was both a rise in sea level and a rise in land in an inter-glacial but that rates of change were different. This gave, therefore, interesting patterns of relative change. Level 3 responses are also tending to include comments about tectonic influences and the effects of large scale sedimentation in major river estuaries and deltas.
   Explanations of the role of sea level change on coastal landforms were generally competently handled. There was a tendency for responses to offer good descriptions of a variety of coastal landforms but not make explicit the link with sea level change. There were also too many candidates straying inland to discuss rejuvenation features associated with rivers.

2 There were good accounts of the origins of coastal sediments from many candidates but characteristics of sediments were less well handled. Comments about fluvial origins of sediment and material originating from marine processes were prevalent. Candidates were also mainly competent in their description of the on-shore movement of sediment due to post-glacial sea level.

Explanations of the variety in beach profiles varied quite considerably in quality. There was plenty of material on waves but considerable muddled persists. Candidates writing in terms of energy input onto a beach tended to be most persuasive. The calibre of material was mentioned by many in terms of angle of rest but fewer were secure in their understanding of the role of permeability. Likewise the role of the water table under the beach is too little considered. There were those who confused plan with profile, something that should not happen at A2 level.

Option 2: Fluvial Environments

3 Descriptions of the patterns of flow found in river channels were generally satisfactory although the details were not always well described. Many answers were well supported with effective diagrams that helped convey the essential differences amongst the flows. The weaker responses tended to become caught up in describing the route of the thalweg along a channel.

Although there were plenty of sound explanations of the affect human activities can have on discharge, impacts on sediment load were less secure. Activities such as urbanisation, changes in rural land-use, forestry and agricultural for example, and dam construction were discussed by many; very few included abstraction. In general there was a n absence of convincing exemplification. It was disappointing that so few candidates organised their responses around the ideas of changes in the energy of a river system leading to adjustments in the system.

4 This, the less popular of the two questions in this Option, was not well answered. Too little field-work was referred to in sub-part (a). Once one has spent a day paddling along a stream with tape measure, ranging pole and a method of measuring velocity, it should be possible to write a really convincing account!

The second sub-part was no better dealt with. Discharge relationships seem poorly understood and in particular, all examiners expressed their concern that so few candidates recognised the importance of bankfull discharge. There are those who continue to confuse discharge and velocity.

Option 3: Glacial and periglacial Environments

5 This question focussing on sediment transport was set deliberately in a wide context, that is, glacial environments. Candidates had, therefore, a wide variety of ways to include and it was disappointing that so few included glacio-fluvial. In particular, the movement of sediment in flowing water on, within and under ice was not well described. Comments about supra-, en- and sub-glacial as regards transport directly by ice were common.

The following sub-part also left the way open for a diverse range of landforms to be included and here again, glacio-fluvial received too little attention. The link between type of depositional landform and the whole period of glaciation was picked up by those whose knowledge and understanding was substantial and authoritative. A good number of responses effectively deployed diagrams here and it is encouraging to see increasing numbers of candidates appreciating the likely scales of landforms.

6 There were some helpful descriptions of frost shattering and solifluction in response to this question focussing on weathering and slope processes in periglacial regions. Candidates rightly emphasised the significance of the active layer with the more secure answers including sensible estimates of the rate of some mass movements. Omissions tended to be amongst the more rapid movements such as rock fall and rock avalanching.

There were those writing about the factors leading to ice mass growth and decay that restricted their answer to dealing with ideas about mass balance. This took them so far but Level 3 responses extended their consideration to include ideas such as the earth's orbital eccentricity, changes in tilt, sun spot variations and the role of volcanic dust in the atmosphere.

Option 4: Hot arid and semi-arid environments

7   There were plenty of well executed diagrams of different types of sand dunes offered in answer to sub-part (a). Barchan, star and seif dunes were the most common. The higher level responses gave physical dimensions that added to their authority and substance.

Sub-part (b) was, by contrast, disappointing. Examiners were surprised not to read more frequently of the roles of wind speed and constancy; wind direction was mentioned by the vast majority of candidates. The transport of sand through suspension and saltation was not often mentioned but a scarcity of vegetation resulting in sand availability was usually included.

8   Descriptions of the use and misuse of water through human activities included some useful material about the impacts of irrigation upon soils. However, too few responses were secure in their coverage of the details of 'ways'. Thus the potential of describing the variety of ways of storing water, of exploiting stores such as the use of 'fossil' water and the different techniques of irrigation was not often exploited.

Examiners were anticipating some wide ranging and detailed discussions about the role of water in producing landforms in arid environments but such offerings were rare. Even the descriptions of the landforms tended to be rather superficial and there was an absence of labelled diagrams, the inclusion of which might have added significantly to responses. Explanations of the role of erosion were less convincing than discussions of transport, for example the movement of sediment in the formation of playas, pediments and alluvial fans was not often well understood.

Option 5: Applied Climatology

The very small number of scripts containing answers to either of the two questions in this Option make summative commentary difficult.

9   Candidates tended to either be convincing in their discussions about wind throw or forest climates or not. With regard to the former, comments about antecedent rainfall and extreme weather were commonly included. Explanations about the distinctive nature of forest climates focussed on issues of temperature and humidity with wind speed only mentioned by the more secure responses. It was disappointing that more was not made of seasonality here.

10   Candidates tended only to give a rather narrow range of problems that air pollution episodes cause for humans. The focus here was mainly on respiratory issues, which although being appropriate, is not the whole picture. Few candidates extended such a point to include the economic impact of people off work both for the individual and corporately. Comments about the impact of poor air quality on transport were rarely included.

Option 6: Agriculture and Food

11   The modification of ecosystems by agriculture was the focus of this question. Candidates had a tendency to list the ways in which farming has modified the landscape rather than taking the specific factors of productivity, species diversity and sustainability from the

question as the structure. Much was made about yield when discussing productivity and lead to some helpful points being made. Species diversity was less well handled with very few candidates pondering the possibility of the significant diversity in species under a traditional mixed farming regime. Sustainability was the least well described as vague assertion tended to be employed. A description in terms of energy balance is perhaps a more fruitful approach.

Although examiners suspected that candidates felt comfortable with the topic of (b), few responses made clear the links between relief and agricultural systems. There were many accounts of changes associated with relief, altitude and slope angle (terracing) most common, aspect rarely mentioned. Convincing responses were those that made clear the change from arable to pastoral associated with an increase in slope angle, with the Level 3 responses going further and mentioning differences between types of pastoral, such as dairy and hill sheep for example.

12 Descriptions of the global pattern of nutrition were, by and large, good. The weaker responses dealt with mal-nutrition only while more substantial answers gave details concerning under- and over-nutrition as well. Some only dealt with famine with gave the response a too narrow focus. Examiners were disappointed by the lack of 'place' detail included here with too much reliance placed on simple LEDC / MEDC comments. Differences amongst LEDCs have much potential for raising the quality of a description in this context.

As with the Question 11, (b) required an explicit link to be established between technology and agricultural system for higher Level marks to be awarded. Comments about 'green revolution' were common which was appropriate and took the answer forward providing that details of the technology were given, that is the genetic breeding programmes for various staple crops and the technologies required to support the varieties in the field, irrigation, pesticides and fertilisers for equipment. Intermediate technology was rarely considered and occasional use was made of greenhouses and poly-tunnels. This latter point is a real issue in some regions and while the question did not require discussion of the environmental impact of such technology, much could have been made about the spread of strawberry growing for example.

Option 7: Manufacturing Change: Location, Change and Environmental Impact

13 Although the Specification is clear on the subject of 'peripheral regions', the interpretations put on this term by significant numbers of candidates led them to generate limited descriptions. Such candidates tended to see any region undergoing industrial change as worthy of inclusion and some interpreted peripheral as 'suburban'. The better responses were able to offer discrete descriptions of both spatial and economic characteristics and had strong 'place' knowledge.

In sub-part (b) the more successful responses located their explanation very firmly in the real world and so gave convincing accounts of specific actions. In this context there were some effective discussions focussed on South Wales, North-East England and for a minority the Mezzogiorno.

14 Descriptions of the influence of markets on manufacturing locations were highly variable. There were some very good responses offering accurate and detailed exemplification. Some of these made the very thoughtful point about changes through time, for example in the context of the brewing industry. The inclusion of a consideration of the scale of the market was a clear Level 3 indicator with strong answers making the point about the global and regional market influences on the vehicle industry.

Explanations of the global shift in manufacturing all too easily slid into ramblings about cheap labour in LEDCs and expensive labour in MEDCs. More focussed responses took this fundamental point but extended it to include the recent movements of manufacturing from NICs to LEDCs and evolution of the global market with growing demand from countries such as China and India. The role of the cost of transport enabling global movement of goods was a significant omission from many scripts.

Option 8: Service Activities: Location, Change and Environmental Impact

15   Few candidates wrote about the principles of bid-rent and trade area analysis and those that did tended to write ineffectively. It was particularly disappointing that recent trends towards the suburbanisation of services such as retailing, were not seen as necessitating a reappraisal of bid-rent theory.

Explanations of the influence of economies of scale on patterns of retail location were similarly lacklustre. As ever, with such questions, the critical element for assessment is the quality of the links between the factor, economies of scale, and spatial patterns.

16   This was the more popular question by far in this Option. However, few candidates were secure in describing the characteristics of all three types of service locations. Generally candidates were more comfortable when writing about office parks and regional shopping centres; they were less convincing when focussed on edge cities. With the latter, it is perhaps most appropriate for discussion to be set within the North American context.

Candidates, in the main, were effective when explaining the opportunities and problems of service decentralisation. Factors such as employment, effects on different groups within society, transport and land prices were all competently handled. As observed before with questions asking about positives and negatives, and not only in this Option, it is the former that dominate candidate's answers, something they should perhaps try to balance more evenly.

Option 9: Tourism and recreation and their Environmental Impacts

17   It was clear that nearly all candidates tackling this question were acquainted with the concepts of the resort and enclave, although some examples were less convincing. Most conveyed the idea of an enclave as a focussed, discrete development with little interaction between the tourists and the local area. Resorts were likewise well described and it was encouraging that most responses offered sensible examples. Two, equally valid interpretations of tourist zone were possible; only one was required for Level 3 marks. A linear development of several resorts as seen in parts of the Mediterranean, or where zoning of activities is implemented as on Lake Windermere or in Yellowstone National Park for example were possible interpretations.

Explanations of changes to the pattern of holiday destinations needed to make clear the link between factor and change to the spatial pattern to be convincing. In this context, accurate place details were helpful. Increases in wealth, the better responses used disposable income, and paid holidays were common factors. The more authoritative answers could place changes in a correct time line and very often confused chronology was an indication of a weaker response.

18   It was clear that many candidates relished the opportunity to write about changes to domestic tourism in MEDCs from the 19th century onwards. It was clear to examiners that most of these responses would have greatly benefited from some planning as too often what was generated lacked focus and detail. In particular place details could be muddled as could the chronology of change. It is disappointing when, at A2 level, candidates confuse the 19th century with the 1900s. There was an unhelpful preference to deal with

seaside resorts, in particular when moving into the latter 20th and early 21st centuries. References to urban and rural tourism, and indeed the revival of some of the traditional seaside resorts, were ripe with possibilities in this context. For some, the temptation to offer extended explanation proved too much.

The role of governments was well handled in theoretical terms but too few managed to add real conviction to their answers through factual detail. Vague assertion about '… the Kenyan / British / Costa Rican …' government did not advance an answer much. Likewise generalities about wealth needed more persuasive arguments linking this with improvements in health and education for example, as well as offering comments about the raising of tax revenues to pay for investment in social capital. It was good to read accounts mentioning the use of tourism by governments to support conservation projects and to read of the value of projects such as European City of Culture and Britain in Bloom competitions to aid tourism.

2684 People and Environment Options

General Comments

Candidates produced a wide range of performance. This examination proved quite challenging for some candidates who 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 fewer in this group in this examination reflecting better preparation by the individual candidates or most typically a better than average tendency to keep tightly relevant to the question being answered.

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 continues to be of particular concern as many could not spell place names eg *Missipi* 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. 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 is 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 the impacts of natural hazards are determined by both human and physical factors.'

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 control of urban pollution for Q6 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 Q9 many assumed their answer was obviously about the UK but never stated it.
- **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.

Those candidates that achieved the highest grades:

- Demonstrated consistently good performance throughout the paper
- Showed detailed locational knowledge especially in the extended answers – there was a clear sense of place
- Exemplified, even within shorter section answers
- Used appropriate and accurate geographical vocabulary
- Showed they understood cause-effect relationships.

And above all:
- Answered the question set

The selection of questions was far more even this examination with Q.9 proving very popular but again few centres do the EU. Interestingly for a January exam with a small entry every question had some takers.

Comments on individual Questions

Option 1: Geographical Aspects of the European Union

1   Discuss the view that the single European market has intensified the problems of peripheral regions in the EU.   **[60]**

The limited number of candidates that attempted this question were not clear on what the term 'Single European market' meant so included a whole range of aspects of joining the EU:

'With the freedom of movement in the EU vast numbers of the populations from the newly joined eastern European nations have flooded westwards stripping these peripheral areas of the most qualified members of their societies.'

The stress is on the single market for goods, services and labour and the resulting backwash effect although the more able candidate may identify some elements of spread or trickling down with some peripheral areas gaining so reducing their problems:

'Peripheral areas in southern Europe such as Greece have gained greatly as the single market has opened up vast northern European markets for their agricultural produce and attracted huge numbers of tourists from the cold north to find warm winter holidays.'

Again the more perceptive candidates recognised that peripheral regions can be geographical but also economic and social. This enabled them to demonstrate that some such regions had gained under a single market whilst others have had their problems made worse:

'Many migrants from poorer peripheral areas end up in older inner city areas where their unemployment, culture and sheer numbers make an already social and economically peripheral area even worse.'

2   Evaluate the effectiveness of strategies to regenerate a named rural region experiencing decline in the EU. **[60]**

The chosen rural region was predominantly Southern Italy but often candidates were not up to date and seemed unduly optimistic about the impact of the various strategies used to regenerate the area. Many focused on generic EU strategies such as the CAP rather than particular regional strategies:

'The introduction of the CAP has helped develop this remote area as it has made farming more profitable so keeping more people on the land.'

Little was known about the European development Fund, objective 1 status etc. What evaluation of the strategies there was tended to be simplistic:

'Policies have helped develop the area so reducing or even reversing its decline.'

At this level there is an expectation that candidates recognise that it is never that simple. Success may vary between locations within the region, between social groups and economic sectors.

3   'The problem of transnational pollution in the EU has largely been solved.' Assess the accuracy of this statement. **[60]**

This was the most popular question but the 'transnational' aspect was largely ignored. Most chose to look at river pollution, acid rain and the pollution of the north sea. All suitable case studies but some candidates seemed out of date:

'Pollution from the coal fired power stations of the UK blows across Norway and Sweden bringing acid rain. 60% of Swedish lakes are now too acid to sustain life.'

Most candidates thought the problems have been solved but didn't really explain why or justify their assertion. All too often answers were too simplistic:

'With the decline in heavy industries and greater controls over waste emissions from industries the Rhine has returned from the dead river of the 1970s.'

Pollution from agri-chemicals remains a problem and candidates should recognise that the relative success of pollution controls may vary between economic sectors, vary over time and may vary with the viewpoint of different elements in the community. Most did appreciate that strategies were EU wide or were between a number of countries but a greater development of this trans-national co-operation element was needed in most cases.

Option 2: Managing Urban Environments

4 To what extent has the redevelopment of brownfield sites in MEDCs been successful?
[60]

This was a popular question and all candidates had some understanding of brownfield sites although some did include other types of sites:

'The old post war blocks of flats were bulldozed and new low level buildings were built on this brownfield site.'

Many could quote good examples such as the London or Cardiff docklands developments but few could evaluate the relative level of success. Most saw such schemes as successful but the more perceptive qualified this success:

'Not all schemes prove successful as the brownfield sites are often polluted with toxic waste which is expensive to clear and sites are often too small or awkwardly shaped to be useful for modern developers.'

And

'Such developments as the docklands are successful for the wealthy but the original local population are driven out by high property prices and the influx of new comers so it is not successful for them.'

As in many questions a contrasting pair of detailed examples would have helped developed the evaluation rather than the string of generalised examples that most candidates used to support their discussion.

5 Evaluate the success of strategies used to revitalise inner city areas. **[60]**

This was in a similar spirit as Q. 4 but here the stress was on revitalisation and inner areas but candidates took it to mean the redevelopment of slum areas. This then produced for examiners when candidates looked at LEDCs:

'The shanty town areas surrounding Rio have been revitalised using ASH – assisted Self Help schemes in which ……..'

These are not inner city areas so could not be included. This reflects that some candidates are determined to include shanty towns in an urban section answer so look for the question which could include it. This was not it.

Some candidates looked at city centre redevelopments such as the Bull Ring in Birmingham and the extensive redevelopment in the centre of Manchester. These were often effective but seen as universally successful. It was the better candidate who pointed out that it benefited some sections of the community more than others.

The most effective answers contrasted redevelopment with refurbishment and gentrification. Many based their discussions on the GEAR project in Glasgow to identify the advantages and disadvantages of such schemes.

6 'Cities can never be sustainable.' How far do you agree with this statement? **[60]**

This was by far the most popular question in this section but it was rarely done effectively as most candidates didn't grasp the subtly of 'sustainability' and focused on the problems of cities. Usually this meant a ramble over urban pollution levels and types or a look at solving traffic congestion.

Sometimes candidates stated conclusions that did not really relate effectively to the question they were answering:

'These congestion solutions were unsuccessful because Mexico city is in stage 3 of the DTM.'

Clearly some candidates had never studied some examples of attempts at making cities sustainable such as the recent developments in Shanghai. Many relied on inappropriate or outdated examples:

'The building of the green belt around London has made the city more sustainable and forced brownfield sites to be re-developed.'

It is puzzling why so many candidates chose this question but lacked the knowledge and understanding to answer it effectively. Too many thought rubbish sorting in Cairo or the congestion charge in London could lead to sustainability:

'The congestion charge .. shows that cities can become sustainable and so future generations are not compromised.'

The better answers concluded that given current technology and political will cities are indeed not sustainable.

Option 3: Managing Rural Environments

7 To what extent do you agree with the view that the main role of farmers is to manage the countryside. **[60]**

This proved to be quite a thought provoking question. Most agreed with the view but then did discuss the various interpretations of 'managing the countryside'. Some got sidetracked onto the role of the CAP which seemed to explain everything whilst others examined the hard economics of farming:

'Today farmers can not make a living from purely exploiting the countryside for farm produce due to quotas and cheap imports so many chose to manage the countryside as they gain more income from tourism that wants to see a managed rural landscape.'

Most answers did look at the many roles expected of a modern farmer and then placed the change (as the candidates saw it) at the feet of the politicians who were seen as wanting to reduce agricultural output and conserve the countryside.

The more able candidates contrasted the view between upland pastoral farmers, who made more money by managing usually in a national park or tourist area, and the lowland arable farmer who still exploited the countryside for rapid gain from high yielding chemical rich crops on a large scale.

8 'Modern intensive farming is the main cause of habitat loss.' How far do you agree with this statement? **[60]**

On first glance this is a straightforward question but the candidates that attempted it tended to miss the evaluation of farming as 'the main cause' and so wrote about how modern intensive farming harms the environment:

'The use of large scale machinery has led to the removal of hedges so there is a loss of habitats for birds to nest and small animals to live. Indeed much of East Anglia is called a green desert.'

At least this candidate did give an example as this was another question where many candidates assumed the examiner appreciated they were talking about the UK.

So all candidates who answered this question agreed that modern intensive farming was the main cause of habitat loss but did not attempt to look at other pressures such as housing development, road building, drainage etc

9 'Rural communities and cultures are undergoing rapid change.' Evaluate this statement. **[60]**

This was by far the most popular question both in this section and overall. Many candidates saw this as all negative with 'change' seen as exclusively decline. This was often coupled with an appreciation that rural areas are growing in population:

'The pattern of migration in most rural areas is gain.'

The example above shows the typical generalisations that many answers suffered from. All too often candidates seemed to imagine that it was clear they were referring to the UK but never stated it.

Few distinguished between communities and cultures although one candidate did highlight change in the culture by examining the impact of large number of poles in Sedbergh. Most candidates saw the combination of second home ownership and commuters moving out of cities as twin forces breaking up the traditional rural community and culture. Some candidates had a very inaccurate idea of what this had been:

'In the nineteenth century rural communities were self reliant dependent on the land with full employment and little poverty. Families supported each other in hard times and there was a vibrant rural culture around the celebrations of the seasonal rhythm of the farming year.'

Few candidates looked at the changes in farming that have allowed change and fewer looked at examples were change has been positive with increased communities and more active cultures albeit fuelled by counterurbanisation. Again few candidates took the opportunity to compare remote rural communities with those near to large urban areas. Too much exemplification was of the 'eg norfolk' type.

Option 4: Hazardous Environments

10 To what extent are the impacts of natural hazards determined by human rather than physical factors? **[60]**

This was the most popular question in this most popular of sections. Generally answers were competent but a significant minority missed that the question referred to impacts (both their type and level) and focused on causes:

'Many hazards are caused by Human factors. Humans piled up waste on the valley side in South Wales that one day slipped causing the Aberfan disaster.'

Most candidates saw human factors as making natural events worse:

'By building levees so raising the level of the Mississippi when Katrina struck and the levees burst the flood turned into a disaster.'

Some candidates suggested that the primary impacts largely reflected the nature and scale of the physical factors whilst secondary were more the result of human. This is perhaps a little simplistic but at least the candidates were trying to develop their evaluation beyond the basic.

Most candidates made the point that hazards only occur if natural events threaten human lives or property so human factors must lie at the heart of the extent of the impacts. Others did stress that human factors can reduce the impact. This usually seemed to require a discussion of LEDC V MEDC preparedness with some effective exemplification from LEDCs such as Bangladesh.

Some concluded that human factors were usually the most important in both a positive and negative sense but if the natural events were sudden or extreme then physical factors were the most important:

'Humans had predicted the eruption and cleared what they thought was the danger area but when Mt St Helens erupted the blast was so much bigger and the blast of gas, rock and debris covered so much a greater area killing 57 people that it was the physical factors that determined the impact.'

11 'The nature of volcanic hazards is difficult to predict.' Evaluate this statement.   **[60]**

This was a very straightforward evaluation but too many candidates saw this as the prediction of eruptions – time and place rather than the range of types of hazards volcanoes can and do produce:

'It is easy to predict where an eruption will occur as most volcanic vents are clearly visible but it is more difficult to predict when they will erupt.'

It was the more able candidates that looked at the difficulty of predicting the range of hazards:

'In the case of Mt St Helens they predicted it would erupt but no one predicted a massive earthquake that allowed the volcanoe to erupt sideways. Also the lahars, blast and snow melt were not accurately predicted.'

Few went that bit further and explored why it is so difficult to predict the nature and range of volcanic hazards by looking at the technology and/or nature of volcanic activity. Perhaps one candidate summarised it well:

'Every volcanic event is unique.'

But unfortunately failed to develop this gnomic statement.

12 Evaluate the effectiveness of hazard mitigation strategies for hurricanes and tropical storms. **[60]**

This was surprisingly less popular than other questions in this section. Many candidates wasted time explaining the formation mechanisms of hurricanes or distinguishing them from tropical storms. This was an ideal question to re-visit the events around Hurricane Katrina and most grabbed the opportunity to lambaste the New Orleans authorities. The most effective answers contrasted the failure of mitigation in the case of Katrina with the success in the case of some other hurricane such as Allen over Cuba.

Many fell back on the favourite MEDC V LEDC explanation:

'MEDCs have more technology and can afford more mitigation than LEDCs such as Bangladesh where there is insufficient spent on hurricane proofing shelters etc.'

That is not to say that this is an invalid approach but more effective answers pointed out that the effectiveness varied not only with human factors such as technology and fnances but also with the nature of the Hurricane:

It is virtually impossible to mitigate the impact of a powerful hurricane that suddenly changes direction and increases in speed such as the case of …….'

The most effective answers went through a range of mitigation approaches from forecasting to tracking to disaster relief and evaluated each stage supported by an example – in most cases of failures of mitigation.

Grade Thresholds

Advanced GCE (Geography A) (Aggregation Codes 3832, 7832)
January 2008 Examination Series

Unit Threshold Marks

Unit		Maximum Mark	A	B	C	D	E	U
2680	Raw	100	67	60	53	46	40	0
	UMS	120	96	84	72	60	48	0
2681	Raw	75	57	51	46	41	36	0
	UMS	90	72	63	54	45	36	0
2682 01	Raw	60	41	38	35	33	31	0
2682 02	Raw	15	12	10	8	7	6	0
	UMS	90	72	63	54	45	36	0
2683	Raw	90	66	59	52	45	39	0
	UMS	90	72	63	54	45	36	0
2684	Raw	120	88	80	72	64	56	0
	UMS	120	96	84	72	60	48	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	18.6	43.60	65.47	86.80	98.60	100	226
7832	8.00	56.00	80.00	96.00	96.00	100	26

252 candidates aggregated this series

For a description of how UMS marks are calculated see:
http://www.ocr.org.uk/learners/ums_results.html

Statistics are correct at the time of publication.