

Geography A

Advanced GCE **A2 7832**

Advanced Subsidiary GCE **AS 3832**

Report on the Units

June 2006

3832/7832/MS/R/06

OCR (Oxford, Cambridge and RSA Examinations) is a unitary awarding body, established by the University of Cambridge Local Examinations Syndicate and the RSA Examinations Board in January 1998. OCR provides a full range of GCSE, A level, GNVQ, Key Skills and other qualifications for schools and colleges in the United Kingdom, including those previously provided by MEG and OCEAC. It is also responsible for developing new syllabuses to meet national requirements and the needs of students and teachers.

This mark scheme is published as an aid to teachers and students, to indicate the requirements of the examination. It shows the basis on which marks were awarded by Examiners. It does not indicate the details of the discussions which took place at an Examiners' meeting before marking commenced.

All Examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes should be read in conjunction with the published question papers and the Report on the Examination.

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

© OCR 2006

Any enquiries about publications should be addressed to:

OCR Publications
PO Box 5050
Annersley
NOTTINGHAM
NG15 0DL

Telephone: 0870 870 6622
Facsimile: 0870 870 6621
E-mail: publications@ocr.org.uk

CONTENTS

Advanced GCE Geography A (7832)

Advanced Subsidiary GCE Geography A (3832)

REPORT ON THE UNITS

Unit	Content	Page
*	Chief Examiner's Comments	5
2680	The Physical Environment	7
2681	The Human Environment	12
2682/01	Geographical Investigation (Written Paper)	16
2682/02	Geographical Investigation (Report)	22
2683	Options in Physical and Human Geography	29
2684	Synoptic Geography: People and Environment Options	36
2685	Personal Investigation Study	45
2686	Investigative Skills	52
*	Grade Thresholds	54

Chief Examiner's Report

General Comments

The performance of candidates has again been approximately equivalent to previous sessions. There was considerable variation between Centres and within Centres. This summer the contrast between centres was most marked being reflected particularly in the responses to the A2 level papers. 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. Some candidates lacked the necessary case study material to make answers fully effective. It is clear that some Centres did heed the advice given at the INSET in the autumn term as, for example, there were far fewer errors made in the way coursework was arranged.

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 by far the weakest element was the written section of 2682 (geographical investigation) although this was lifted by the report component in which a high percentage achieved at the highest grade.

A2

Assessment is largely by extended writing which allows effective differentiation. Overall, performance was similar to last summer being stronger on the synoptic paper, 2684, and weakest on the Personal Investigative Study, 2685. Units 2685 and 2686 (investigative skills) performed very similarly although the latter did noticeably better at A grade.

As A2 is assessed via options it is possible for candidates to experience a limited range of geography. Few centres study applied climatology and service activities in 2683 and the geography of the EU and managing rural environments remain unpopular in 2684. 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, apart from the missing map issue in 2681, and mostly these have been easily incorporated in the marks schemes at standardisation. These schemes have to be very flexible as candidates have very inventive minds and read into questions some quite original, and valid, interpretations.

There are some common themes throughout all the components:

- Candidates must carefully read and answer the question set rather than produce prepared answers that lack relevancy. This was a particular problem in both 2681 and 2684;
- Candidates need to understand and use effectively geographical definitions and technical terms. This is a particular weakness in 2680;
- In short section answers in 2680 and 2681 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;
- More candidates should emphasise the spatial context of their work and stress location. Some need to refer to far more examples or case studies.

Report on the Units Taken in June 2006

Coursework at all levels still suffered some common limitations:

- Too many candidates produce over-length work often with excessive appendices or lengthy annotations despite the clear guidance given and the detailed exemplification at the coursework inset meetings;
- Shared fieldwork at A2 in which the candidate fails to make their individual role clear;
- 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 still needs to be taken in filling in the cover sheets.

It is not always evident that candidates show progress from AS to A2 in their coursework and geographical skills. Indeed, some of the shorter versions in 2682 and 2686 are more effective than those in 2685 which can lack tightness of focus.

Particular Points to note

Centres are reminded of the changes to some of the units in terms of assessment.

For unit 2683 two questions will be set per option rather than the current three starting with examinations in January 2007.

For unit 2686 assessment will be by examination paper **only** from June 2007. The revised unit 2686 will not have a report or a section A on the examination paper. Instead candidates will be required to answer two questions out of three provided in what is currently section B.

Currently there is a new specification under development to meet the revised QCA subject criteria. It will mean a reduction from six to four units but it is hoped to retain much of the good aspects of the existing specification whilst updating it and injecting some exciting challenging approaches that will engage the interest of the students. Every attempt will be made to keep Centres informed of the progress. It is anticipated that a full programme of support will help minimise the concerns of changing to a new specification.

2680 - The Physical Environment

General comments:

There was a good level of performance by many candidates and a noticeable outcome of this paper was that candidates performed more evenly across the four sections. Hydrology tended to be the best of the four sections but the gulf between that and the remaining three sections was not as noticeable as it has been in previous sessions. Consequently, there were noticeable improvements with Ecosystems and Atmospheric Systems whilst Lithosphere proved to be slightly more difficult with it often being the weakest section. Within each section there was generally good use of stimulus material.

There are some areas of concern expressed by the examination team and Centres are asked to incorporate the advice into their teaching:

- The quality of definitions remains a concern with many candidates barely demonstrating an understanding of the terms requiring definition. Candidates should be encouraged to learn definitions. Accurate use of terminology strengthens many parts of a candidate's performance;
- Imprecise terminology is still used (e.g. soil and rock, infiltration and percolation) in longer answer questions;
- The level of explanation did let many candidates down. In many areas of the paper candidates would start to develop their answer but then did not take their answer far enough, thus denying them full marks;
- The idea of linking answers back to the question could be improved. The 10 mark questions always require reference back to the question in order for level 3 to be given. Similarly, question 4(b)(ii) in Lithosphere required a link back to slope form, and question 1(a)(ii) required reference to the effect on the water table, whether it is raised or lowered;
- The command term 'describe' was frequently overlooked in this particular paper and so candidates were not able to access the top marks available.

Hydrological Systems

This section was generally the strongest which is a trend seen in previous sessions. However, the performance in this section was much more variable than previously seen.

Q1(a) Whilst many candidates clearly stated infiltration is the movement of water/precipitation from the surface into the soil, there were many disappointing answers. All too often there was confusion with percolation and reference to water flowing through the rock.

Q1(b)(i) This elicited some very good answers with factors being clearly stated and a good level of development following. There was some confusion regarding the effect of permeability with a common mistake being that permeable rocks would lead to a higher water table. This could be true but would be dependent on the amount of precipitation which was not usually stated. Common answers referred to slope gradient, the effect of vegetation and the amount of precipitation. Those candidates who did not gain level 2 (5-6 marks) were usually not offering a full explanation of their chosen point or referring back to the level of the water table. The following is a very good example of one factor done well:

The amount of precipitation may affect the position of the water table as the water table marks the upper boundary of the saturated zone in the permeable rock. If there is a huge amount of rainfall more water would infiltrate and percolate through the soil and the position of the water table would rise. Consequently if there is less rainfall the water table would move down.

Q1(b)(ii) There was a lot of confusion with this question because, whilst the question clearly asks for another cause of overland flow other than a rising water table (i.e. saturation of the soil) many candidates explained soil saturation and therefore the rising water table. However, there were some very good answers that referred to impermeable surfaces (for example urban areas, clay baked after drought, frozen ground) and the intensity of precipitation. For example:

When there is a sudden heavy rainfall event the soil's infiltration capacity is exceeded and the rainwater can't infiltrate fast enough so there's infiltration excess overland flow.

Q1(b)(iii) The slower rate of throughflow with depth was answered well by many in the context of greater density and lower porosity, due to the overlying weight of material. Many, however, showed a lack of understanding of where throughflow operates by referring to flow through rocks, rather than soil. Common mistakes were that with depth 'rock gets more saturated', the 'gradient gets less' or 'there is less gravity'.

Q1(c) The principal problem for some candidates in relation to examining the effects of land use in a drainage basin was focussing on the term "land use". Some weaker answers went through a pre-learned answer often relating to the flood hazard. Better answers clearly focussed on land use, such as farming or urban areas, and identified the impacts in terms of stores, flows and outputs, but only the best has some explanatory element, allowing access to L3. For example, statements to the effect that urban land use leads to surface run-off and higher levels of evaporation describe the effects, but there is no explanation. An example of a good answer that has explanation and went on to be given full marks:

In the upper course of the river there is grazing which means the grass cover is dense and so it can hold and store much water and when there's rainfall there will be less overland flow, but infiltration is increased and so there's more throughflow towards the river. In the lower part of the River Tees there are many towns such as Stockton and industrial land use. People have built Cow Green Reservoir which stores water and there is only so much water released as needed for domestic and industrial use.

This answer was further developed in terms of urban land use and the impact of deforestation during the process of urbanisation. Dams and water abstraction are not land uses. At the top end there candidates used a wide range of examples of land use and were able to explain and demonstrate how the flows, stores and outputs have been affected by the land use.

Ecosystems

This question was done relatively well and there was a clear sense of candidates achieving a good level of knowledge and understanding.

Q2(a)(i) This was done with reasonable understanding with most candidates being credited for the change of vegetation or the element of time. Some vagaries were introduced when the idea of change was stated but not made clear that it was over time, but rather they implied that the change was just spatial.

Q2(a)(ii) This was answered well by many of the candidates and, where description and explanation was present, level 3 was gained. However, the common weaknesses of this question were that some candidates ignored the 'describe' command term and so explained about plant succession but with no reference to changes and, by some, no reference to the graph provided for the question. This limited the number of marks that could be awarded. A second error that was made fairly often was that candidates described a psammose succession and gave plant names and explained some of the changes as being due to plant adaptations. However, what these candidates did not do is refer to the graph and again their marks were limited. Some candidates provided good explanations, referring to the improved soil conditions through decomposition and the addition of humus and competition for light, nutrients and water, but provided little or no description based upon the diagram provided. The best showed how description should be handled by identifying trends and quoting supporting evidence from the graph. For example:

In the first stage of the succession, S1, there are very few species and most of them are pioneer species with some early colonisers. This is because living conditions are very harsh and unsuitable, for example, at a sand dune where it is very windy and saline, and only pioneer species can survive there such as sea rocket or sea couch grass in a sand dune. In stage 2, S2, the number of pioneer decreases but there are more early colonisers because the pioneers prepare the ground for other species by stabilising the soil and providing nutrients when they die so humus can gradually build up.

Q2(b)(i) The definitions of 'trophic level' were largely weak. There was a significant tendency to use the term 'level' again in definitions, which needs to be avoided. The idea of each stage having species that acquire energy or feed by the same method was the desired answer.

Q2(b)(ii) Answers to reasons for the decline in NPP up the trophic pyramid either tended to score well or poorly. Good responses recognised that energy loss occurred at each level through a variety of processes/activities, including mating, hunting, feeding. The best recognise that loss could also occur through death and waste products and that not all parts of an animal are edible. Weak answers tried to explain the decrease in terms of numbers of creatures, when that is a function of energy loss not a cause of it. A typical level one answer might merely list ways in which energy can be lost, but a level two answer would develop at least one way in more detail. For example:

Net primary productivity decreases up the trophic pyramid as the transfer of energy from one trophic level to the next is not 100% efficient. For example, the transformation of light energy into starch by plants is only 1% efficient and energy is lost at each successive level by movement and respiration of biota an inedible biomass such as bones and feathers which cannot be eaten by the next level of consumers. This means that less energy is available for organisms on subsequent levels to use and the productivity decreases. Consumers are also often less productive than producers as many are fast-moving animals which require a larger amount of energy for life processes than slower plants.

Q2(c) Many candidates are still failing to explain the reasons for the prevention of a climax. Many simply assert that a cause, such as deforestation, will prevent a climax, without outlining how such an action arrests succession. Centres are encouraged to explore the full impact on the ecosystem processes of activities such as a forest fire or human intervention and the effect of these on the vegetation that develop.

An example of a good, thorough answer is:

Humans that trample the plants and ground can make the floor more compact. This decreases rates of precipitation infiltrating into the soil slowing down the rate of cation exchange. If the rate of cation exchange is reduced less minerals/ions are being used by vegetation reducing the rate of growth. Deforestation for furniture can reduce levels of biomass in an ecosystem, reducing levels of litter. This means there is less humification and fewer nutrients are being converted to soil stores for root uptake and so over time the soil will not be able to support more complex vegetation.

Atmospheric Systems

This section produced generally better answers than in some previous years, with candidates seemingly more comfortable with this global scale of consideration than the local energy budget.

Q3(a)(i) This was probably the best of the definitions on the paper although there were common mistakes to some centres. Some candidates used the term “mass” in their definition and so should be encouraged to use alternative words from those that appear in the term to be defined. Others did not convey the correct scale of the body of air, by quoting “pocket” or “parcel” or failed to refer to the uniformity of characteristics within the air mass.

Q3(a)(ii) There were some very good explanations for the differences in the air masses. Most candidates were able to gain some marks for a basic explanation of the source of air masses. Level two answers provided more development, often in terms of the humidity and the track over which the air mass moves. For example:

Air masses vary in their characteristics because they came from different areas and directions. The air masses coming from the south are warmer than those coming from the north because the areas in the south are closer to the equator and are much warmer than polar regions. The tropical maritime air mass is also wetter than the others because it comes from a warm region so it is warm and can hold more water. AS it travels across the Atlantic more water is evaporated and the humidity of the air mass increases. The colder air masses such as Arctic Maritime, are slightly drier because cold air can hold less water.

Q3(a)(iii) Descriptions of the weather brought by one air mass were also generally good, with most candidates able to identify basic conditions relating to temperature and humidity, and many taking things further, by referring to other possible weather phenomena, such as snow, frost or fog. Some candidates made things very difficult for themselves by selecting Tropical Continental, which is highly unlikely in winter, although where it was clear that the weather related to winter conditions some credit was given.

Q3(b)(i) Examinations of the global energy budgets produced some very good answers, with candidates explaining the deficit and surplus areas in the context of differing concentrations of solar input, different albedos and the loss of energy through passage through the atmosphere. Some good explanations, however, omitted any description, failing to identify areas of deficit or surplus. It was reassuring to see far fewer candidates referring irrelevantly to the equator being closer to the sun. Some of the best answers used small diagrams to help illustrate their answer and this is often a good idea, but should not be encouraged at the expense of candidates writing their answer.

Q3(b)(ii) This question was answered well by many candidates. The majority of candidates correctly identified two global transfers of energy and many developed these points. The question is about energy from areas of surplus to deficit which therefore does not include the Trade Winds or cold ocean currents.

Lithosphere

This section was the weakest with candidates appearing to be uncomfortable with the idea of a slope system, not familiar with the term slope form and finding it difficult to apply their knowledge of mass movement processes to the photograph.

Q4(a)(i) and (ii) Many candidates identified correctly inputs and/or outputs to the slope system. However, it was surprising how many candidates made reference to vague things such as an output being *mud* or a *cliff*. The outputs in this case needed a sense of movement.

Q4(b)(i) The cross section of the valley was described well. The best answers were characterised by contrasts in height and steepness between north and south facing slopes and included approximate dimensions in terms of height and width of the valley. Some of the best candidates used the correct terminology such as convex and concave or rectilinear slopes. Some descriptions said nothing of significance, for example: *The sketch section is a cross-section of the limestone valley in North Yorkshire, including the main features of the system.* An example of a good answer is:

The north facing slope has steep sides especially at the free slope. It is also quite high with a height of about 70m. The valley floor is relatively flat and wide. The south facing slope is more gentle and shorter – about 35m.

Q4(b)(ii) This question proved the most difficult for candidates and consequently was not answered particularly well by many. The most common mistakes were that candidates did not refer to sensible factors that control slope form and when factors were correctly identified there was sense of how the gradient of the slope might be affected. Some candidates identified gradient as a factor that would affect slope form, but clearly, this is slope form. There seemed to be a limited understanding of the term 'slope form'. An example of a good answer is:

Climate can affect the slope form. Chemical weathering has fastest rates when there is water and it is hot; physical weathering is more common when there are high diurnal temperature ranges. If there is more weathering, weathered material will fall to the bottom of the slope making it more gently sloping. The rock type might also control slope form. If the rock is resistant, weathering and erosion will not be effective so it will be quite steep.

Q4(c) This question produced mixed answers. Some candidates simply discussed weathering processes or hydrological processes rather than slope processes. Most candidates were able to identify correctly 2 or 3 mass movement processes but there seemed to be a preoccupation with landslides and mudslides. Others adopted a scatter gun approach, by mentioning all possible slope processes. The best answers identified appropriate processes, such as heave, soil creep and rockfall. Explanations of creep were generally weak, but those for heave and rockfall better. Some suggested solifluction, a possibility, but showed little understanding of how this process operates. Some answers again used small diagrams to help illustrate the processes. An example of a good answer is:

At the free face rockfall is likely to occur when the limestone is weathered by carbonation or lines of weakness may be widened by freeze thaw. Water in joints freezes and expands which exerts a greater pressure on the rock. The ice melts due to higher temperatures and repetitions of this cycle means that rocks may break off the free face and fall down. This candidate then goes on to develop the process of soil creep with the same degree of detail.

2681 - The Human Environment

General Comments

Candidates produced a wide range of performance. The group that achieved the top grade did so by directly answering the question, using detailed examples and case studies and developing effective links between cause and effect. Those more marginal candidates had two or more of these essential elements missing. There were too many in this group reflecting poor preparation by individual candidates or a failure to keep tightly relevant to the question being answered. Too many did not fully read the question and so missed the main focus. An example of this was Q. 2 (d) where too many candidates ignored the second sentence so did not link socio-economic changes to population changes.

Those candidates that achieved the highest grades:

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

Performance could have been improved by:

- More **careful** reading of questions and identification of **key terms and concepts**;
- Greater **application** of case studies and **use** of examples;
- Demonstrating an ability to **explain** cause and effect relationships;
- **Clarity** of written expression.

Comments on Individual Questions

Q1(a) Many chose to list the countries rather than attempt an overall summative description of the spatial pattern. 'Spatial pattern' is a key geographical term which candidates are expected to understand. Most identified a core-periphery pattern or a NE v S pattern:

The areas with the highest population density (>300 per km²) are in the centre or core region of Europe e.g. Belgium and Netherlands surrounded by a band of medium density (65- 300) countries e.g. France and Germany whilst the lowest densities (0-65) are the peripheral areas especially in the north e.g. Iceland and Lithuania.

Q1(b) A wide range of physical factors were well known but candidates struggled to be concise in the space provided. Candidates should remember that two factors well linked to density could achieve full marks if exemplified. Many gave general accounts with little linkage to population density:

Factors such as altitude and relief play a key roll. For example Mexico is situated in a valley basin on low ground with a nearby water source.

Other answers linked the physical factor tightly to density of population:

High altitude e.g. Himalayas limits population density as the low temperatures, steep slopes and thin soils limit farming and so the food supply can't support large densities.

Political factors were not well known and much of what was written was vague and not well linked to density:

There are high densities in countries such as Belgium because of political stability.

Whilst others were well focused and exemplified:

Some countries such as Ukraine have unstable governments that lead to long term unrest and violence. Densities fall as people move out to more secure areas.

Q1(c) Too many candidates misread the question and saw it either as a descriptive question or focused on the advantages for the migrant. Exemplification was often thin being of the 'e.g. UK' type. Economic was well understood and many candidates could draw out some very effective explanation:

An influx of Polish migrants into the UK in recent years has provided a cheap skilled work force that is willing to work long or anti-social hours. This has kept labour prices low so allowing businesses to increase their profits and so expand creating more jobs.

Many fell into negative viewpoints:

Immigrants to the United Kingdom may live off benefits / not put anything back into the economy.

Social consequences were less secure and many fell into stereotypes of migrants causing increased levels of crime and violence. Such answers often ignored the 'explain' aspect so failed to justify their statements. Some candidates failed to exemplify this section assuming, possibly, that the example quoted in (i) still applied. Examiners could not make the same assumption and marked such answers appropriately. Some candidates tried to include the impact on services in both sections – this could be valid provided a distinction was made between services in the economic sense and social services. Most left it as 'services' so could not gain credit in both sections for the same point! At times a very optimistic view was taken:

Migrants moving into inner areas of London find they can make more friends and so have a good social scene.

Clearly this is a low level response.

Q2 (a), (b) and (c) could not be answered as the map was missing.

Q2(d) This was a disappointing question as so many candidates saw socio-economic changes as producing population changes rather than the reverse. Most candidates located their example in a rural area undergoing growth due to counter-urbanisation such as South Oxfordshire. Few chose remote rural regions or rural regions outside the UK. Some tolerance was given to both the definition of 'region' and 'rural'. Thus 'LA' was allowed if the candidate looked at the impact on the surrounding rural area.

Population changes were seen as change in total population or changes in elements of its structure e.g. age profile. Some provided some useful well annotated population pyramids. Too many candidates spent up to 50% of their answer describing these changes:

Report on the Units Taken in June 2006

In the past 40 years urban areas have expanded and houses have become increasingly expensive. Due to people now having transport they may not have had 40 years ago they can work in one place and live in another. This has caused an increase in suburbanization.

This is not relevant and gains no credit. For high level responses there was a clear expectation that population change was seen as a cause for socio-economic changes such as:

The movement in of young middle class commuters with higher incomes has increased local demand which has led to the building of a supermarket, expanded the local primary school (facing closure before) and pushed up house prices.

It is a regret that this example was not better located in the real world with a strong sense of place. Some candidates did not appreciate the wide ranging aspects that could be included within socio-economic changes. Some did not go beyond population aspects.

Q3(a) This was done consistently well as virtually all candidates went beyond mere listing of countries to identify some general patterns especially LEDC/MEDC contrasts or focused on the rapid growth in Africa.

Q3(b) Few candidates went beyond very simplistic statements:

Urbanisation is the movement of people away from rural areas and into urban areas.

The concept of the expansion of the proportion of the total population living in urban areas was only expounded by more perceptive candidates.

Q3(c) The stress was on a change in the environment so statements such as 'infertile soils' was not credit worthy. Most selected climatic aspects e.g. drought or natural disasters e.g. earthquake as the change and then well linked it to why population had to move to urban areas. Too many linked the movement to rather vague benefits such as *for better prospects*.

Q3(d) Some candidates did not read 'State and explain' so merely described the advantages:

A better standard of living is an advantage of living in urban areas in LEDCs.

The more effective responses linked the explanation to either why the urban areas had those advantages:

Health services are better in urban areas as the government has scarce resources so concentrates such amenities in urban areas so serve the most people.

Or why this was an advantage to the migrant:

Health services are much better in towns so people move there to be healthier and reduce their death rates, especially infant mortality.

Some tended to give a long list rather than develop two advantages in depth with effective explanation.

Q3(e) Again too many candidates chose to ignore the end of the question i.e. the requirement to link the environmental problems to rapid urban growth. Those candidates that failed to link problems directly to rapid urban growth found it difficult to achieve at the highest level.

Many candidates included long rambling introductions that described the rapid growth:

In Mexico city rapid growth has occurred because of the push-pull factors. Early on its population was quite low however, now its population is roughly 70 million people.

This gained no credit and wasted time and space. Some candidates developed an effective chain of discussion showing how cause and effect exacerbate environmental problems:

The first problem which arises from rapid growth is the lack of housing and space for the gain in population. This leads to shanty settlements forming on the edge of the city often on unstable slopes leading to landslides and mass movements.

Exemplification varied from the simplistic e.g. Mexico City (although a large number of candidates forgot to include 'City') to more detailed case studies:

Los Angeles has increased by 10 million population in the last 50 years creating a vast increase in the demand for water. Water resources have been exhausted locally so water is piped from areas as far away as Mono Lake. This has led to water depletion, salinisation and the resulting collapse of the wetland ecosystem in the source area.

2682/01 - Geographical Investigation (Written Paper)

General Comments

The questions proved slightly less accessible to candidates than in the January 2006 but more than in the two previous summer sessions. There was an uneven performance across the paper by individual candidates. Well considered, detailed answers for all questions were given by a substantial number of candidates.

The objective of Question 1 (a) was for the candidate to show understanding of the five stages of carrying out an investigation. Differentiation was determined by the ability to apply the feedback mechanism process to the different stages with exemplification from their own investigation.

The objectives of Question 2 (a) and (b) were for the candidate to show an understanding of data representation. Discrimination lay in the ability of candidates to demonstrate and justify appropriate methods of representing a dataset (provided as a resource).

The objective of Question 3 was to ascertain the candidate's understanding of statistical methods. Differentiation was determined by the identification of a suitable test of association, by their knowledge of how this test is carried out and by applying it in the specified context of a physical geographical investigation.

Candidates are reminded to read the question carefully – credit was lost in Question 1 for not referring to their own study, in Question 2 for getting (a) and (b) confused and not telling the examiner to swap them over and in Question 3 for not including a physical geography example.

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.

Nearly all candidates attempted all parts of the paper. Very few appeared to mismanage the time available.

Candidates found the level of difficulty for this paper a little harder than for January 2006 and easier than June 2005. As ever, differences in the content and quality of responses reflected differences in teaching and coverage of material for Geographical Investigations.

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

Summary of the Outcomes for Questions 1, 2 and 3

The following observations are almost the same as for the last session, demonstrating the particular problems posed by this paper. The majority of candidates clearly understood the requirements of all the questions, with Q 2 (b) being the most easily understood. Questions 1 and 3 proved the most challenging. All questions discriminated between Candidates well.

The responses to Q 1 were good overall. Many achieved Level 3 and few remained in Level 1. Reading the question carefully ensured that candidates discussed modifications to their study rather than the lower level response of going back to earlier stages to decide what they should be doing in a later stage – or even not making clear links between stages.

Report on the Units Taken in June 2006

The overall level of attainment was highest for Q 2 (b) with many entering Level 3. The responses to (a) were somewhat more varied, as a number of Candidates misunderstood the question by discussing both time and distance or they selected poor but workable solutions.

Q 3 was somewhat disappointing given the number of times that Candidates have been asked to discuss association between variables. Most candidates remained in Level 2 but a few stayed in Level 1. It was clear that many did not read the question carefully as they suggested human topics for investigation.

As in previous sessions, candidates well versed in their Geographical Investigation performed well in Q 1 but were not necessarily able to deal with the less predictable nature of Q 2, which is not based directly on their Geographical Investigation, but requires application of their knowledge. The outcome for Q 3 relates to candidates' knowledge and confidence in their understanding of statistical tests, which is excellent from a number of Centres.

Detailed Comments on Individual Questions

Q 1

Many Candidates achieved the middle of Level 2.

Indicative content: The general principle of feedback loops is being examined: the recognition that all the stages lead on from one to the next and, therefore, if it is found that one needs modification this will affect others – the 5th stage leading back to the first. Examples include the following:

When the strategy was developed, it was decided that it would be realistic to collect a slightly different set of data to what had been expected by the central question, so the central question was changed accordingly. It had been planned to collect certain secondary data, but it was not available, so the strategy was changed to make use of what was available. The primary data collection had to be changed because of time constraints, therefore the identification of the central question and the development of a strategy were adjusted. When the data analysis and interpretation were carried out, it was decided that some additional primary data would improve the answer to the central question, therefore more data collection was carried out in the field. In the conclusion, it was clear that the central question had not been fully addressed but due to the way the work had developed, it had covered a slightly different central question. Therefore the title was changed and so was the strategy section to remove reference to aspects that had not been done and to include what had been done.

Qualities of A grade candidates: The description and explanation of the need to revisit previous stages are discussed in detail. Suitable revisions (i.e. modifications) to the work are suggested. The answer is logically ordered e.g. it is clear which stages are being referred to. There is reference to the candidate's actual study.

Other Comments:

The responses for Q 1 covered the full range of marks, with the majority achieving the middle of Level 2. Two principal approaches were used with varying success. Many of the Candidates did not fully understand the intent of the question – to identify feedback loops in order to modify work done in earlier stages: instead they took the word revise in a more literal sense, i.e. to revise and check what they were doing in the later stages. Thus, they were not suggesting revisions to work that they had done.

Report on the Units Taken in June 2006

However, those that did show revision of the work usually gave very good answers, making clear links between at least three stages in a logical manner. Many of these candidates realised that if the question or strategy needed revising as a result of difficulties faced when collecting data, this would have an impact on the remaining stages. Frequently there was reference to the need to collect more data as a result of analysing the initial data collected.

Some less successful candidates only considered feedback to one stage (usually data collection). Others talked about redoing the whole study with modifications at a later date rather than looking at stages within the existing work. Other candidates did not clearly link the stages, i.e. they just discussed modifications to a stage (usually data collection) but did not say at which stage the need to revise (data collection) was identified.

Typical answers looked at the relationship between the later stages and the strategy and/or the identification of the question. Most answers referred back to all stages for material to inform the content of the summary. Effective answers explicitly stated the stages that were being linked together.

Few candidates made good use of their own investigation in the answer. Some only mentioned it at the beginning, whilst others appeared to add some reference at the end of the answer.

Q 2 (a)

Most Candidates achieved at the bottom of Level 2. Despite being a straightforward question, not a great number entered Level 3.

Indicative content: Grouped data is the most appropriate, e.g. histogram / bar chart with a description including the title, group the data, labelled axes, labelled points and/or lines/bars where appropriate; the justification could be that it is visually attractive, it shows variations in journey times to school, it shows magnitude. A pie chart also groups data and its description includes title, group the data, labelled components and a key; its justification is being visually attractive, it shows proportions of different journey times to school, use of key to interpret data. Box plots and dispersion diagrams are effective non-grouped approaches, with a discussion of descriptive statistics that can be ascertained. A table is acceptable provided data from Fig. 1 has been manipulated, e.g. grouped frequencies, tally chart. Less effective solutions include a single bar for each pupil – but not a line graph as there is no link between the pupils.

Qualities of A grade Candidates: The description (which includes the diagram) and justification of an appropriate method of showing pupils and time taken to travel to school (typically frequencies at grouped time intervals) are discussed in detail. The answer is logically ordered.

Other Comments

The most effective answers nearly always included grouped data, so that bar charts were created with groups of times on the x axis and the frequency of pupils taking that time on the y axis. Justification ranged from the simplistic (easy to carry out and interpret) to the advanced (grouping enables identification of patterns relating to travel times to be identified, such as modal groups). Pie charts were also a good and popular option which could be justified in terms of modal groups and visual attractiveness. For both these solutions candidates almost always chose appropriate time bands (although some had overlapping groups).

The appropriate use of non grouped data was a less popular choice, but a number of candidates successfully justified the use of dispersion diagrams and the possibility of ascertaining the median and interquartile range from it.

Less satisfactory solutions used single bars, each representing one pupil and having a length proportional to the time taken. Candidates did not explore the potential of this solution to show how many were above and below the mean/modal/median value. Unfortunately, a substantial number of candidates produced line graphs, which are not appropriate as there is no link between the individual pupils. Tables were acceptable provided the data was manipulated in some way, e.g. a tally chart with selected time intervals.

A number of candidates did not read the requirement of the question, leading to the inappropriate suggestion of scattergraphs showing time against distance.

Q 2 (b)

Most Candidates achieved Level 2, and many entered Level 3.

Indicative content: the most appropriate solution is a scatter graph, being described by its title, labelled axes (distance on x axis), labelled points, anomalies and line of best fit where appropriate; it is justified - it is easy to interpret, is visually attractive; shows relationships between the 2 variables, can add a line of best fit, shows anomalies and be used to predict how long it takes to travel specified distances. A line graph is described by its title, labelled axes (distance on x axis), labelled points where appropriate; its justification is that it is easy to interpret, is visually attractive and shows the relationship between the 2 variables. Other acceptable response include: a combination graph of bars and points *or* pairs of adjacent bars on the y axis and pupils on the x axis – but not line graphs as the pupils are not linked.

Qualities of A grade Candidates: The description (which includes the diagram) and justification of an appropriate method showing distance and time taken by pupils to travel to school (typically a scattergraph) are discussed in detail. The answer is logically ordered.

Other Comments:

Nearly all candidates suggested the most appropriate choice of a scattergraph. Justification ranged from the simplistic (easy to carry out and interpret) to the advanced (able to add best fit line, predict travel times, identify anomalies). Many candidates still do not know how to identify the independent variable for the x axis (distance in this case) and the dependent variable for the y axis (time in this case). There were many very well labelled sketches. Fewer candidates selected the line graph, but these were generally executed and justified well.

Somewhat more innovative was the use of flow lines applied to maps, which were well justified for their visual attractiveness. Other acceptable – but less easy to justify well – solutions were bar charts with pupils on the x axis and a double y axis for time and distance.

Inappropriate choices included the table for interpreting the Spearman's significance level, pie charts, unworkable tally charts, and line graphs with pupils on the x axis and a double y axis for time and distance.

Other Comments for Q 2 as a whole:

The responses for Q 2 as a whole were well differentiated and generally answered well, but were noticeably better for (b) than (a). Many were not comfortable with utilising the data for (a) and indeed many gave the wrong answer, i.e. that for (b) initially. In all but a few cases these candidates changed their mind and indicated that (a) should be taken as (b) and gave the answer for (a) in (b). A few Candidates did not indicate that they wished to re-assign the answers. A few remained confused – giving two (b) type answers – and unfortunately the weaker version was often assigned to (b). Candidates are reminded to read the question carefully before attempting to answer it.

Report on the Units Taken in June 2006

The diagrams were generally well done and quite often constituted the only descriptive element in the answer (which is not an impediment to full marks). However, a number of candidates interpreted “sketch” as meaning very simple or untidy. On the other hand, some candidates devoted too much time to embellishing the graphs at the expense of time spent in answering Q 3.

Q 3

Many candidates achieved the middle of Level 2; and few stayed in Level 1.

Indicative content: Spearman’s Rank Correlation Coefficient is the most appropriate response. The concept of association includes the null hypothesis (no significant association/relationship between the 2 variables). Stages may include: drawing a scattergraph – and discussing its outcome - as a precursor to R_s ; carrying out the test (the formula is not necessary for full credit if the principles are clear; calculation is not required): each data set is converted to an ordinal scale by ranking the numbers from the highest (rank 1) to the lowest (rank x); the difference between the ranks of each of the paired variables (d) is found; these differences are squared (d^2) and then summed (Σd^2); the coefficient $r_s = 1 - [6\Sigma d^2 / (n^3 - n)]$ where n = number of ranked pairs. The meaning of the outcome and its significance: r_s calc is between +1 and -1. 0 = no correlation; 1 = perfect correlation; a test of significance (usually at 95%) is carried out to see whether the relationship could have occurred by chance; using $n - 2$ degrees of freedom, the value for r_s is compared with the R_s table value: if r_s calc $>$ R_s table value, accept the alternative hypothesis.

It is unlikely that a test other than Spearman’s will be used. However, Pearson’s and Chi Squared are appropriate. Mann-Whitney is not acceptable.

The geographical example referred to should be physical and make sense when analysed by a test of association.

Qualities of A grade Candidates: The description and explanation of a test for association (typically Spearman’s Rank Correlation) are discussed in detail (covering the general principle, how to carry out the test, the meaning of the outcome). There is reference to real or hypothetical physical geography variables. The answer is logically ordered.

Other Comments:

The responses to this question generally showed distinct variations between rather than within Centres.

As in many previous sessions Q 3 required the candidates to be aware of a suitable test of association. Whilst the majority offered Spearman's, the overall level of understanding was disappointing. The answers were mostly unbalanced – although it is recognised that less can be said about the concept than the other stages. A few candidates discussed Pearson's Product Moment Coefficient (usually well) or Chi squared (not well).

The concept was poorly discussed, notwithstanding noticeable exceptions from some Centres. The concept was omitted or a brief reference to accepting or rejecting the hypothesis was made as part of the meaning of the outcome.

The method for carrying out the test was usually the most successful part of the answer and took up most of the space allocated. The commonest approach was to discuss ranking and squaring the differences between the paired ranks. At this point many simply quoted the R_s formula (often with at least one error) rather than describing the procedures inherent in the formula. Not all candidates indicated what the terms in the formula actually meant. Poorer answers were muddled in the descriptions or simply said that the data was put into a formula, without any further detail.

The meaning of the outcome was mixed in quality, with distinct variations between rather than within Centres. Some mostly considered the meaning of $+1/0/-1$: a considerable number of candidates incorrectly stated that -1 means no correlation at all. Weaker answers stopped here, without discussion of the impact of sample size on the calculated value. Better answers – and there were many – were then placed in the context of how significant the R_s value is. Whilst quite a few were confused about how to describe the interpretation of the value against the tables, the meaning was generally clear and most of these candidates correctly interpreted the tables in terms of rejecting or accepting the null hypothesis. Many erroneously defined the degrees of freedom (it is $n-2$).

The question also required candidates to specify a physical geography question that could be applied to the test: although most supplied something, a surprisingly large number offered human geography examples (which were often based upon their own study) and quite a few made no suggestion at all. Candidates that had undertaken physical studies did not perform any better than those who had not: a substantial number who had carried out physical study erroneously suggested a human one.

The use of the example was somewhat erratic. Even the most able candidates seldom referred to it more than twice (when presenting the hypotheses and when accepting or rejecting the hypotheses.) However, it was pleasing that a number of candidates made intelligent use of their example throughout the answer.

Weaker candidates deviated from the question by discussing all five stages of the investigation. Other candidates devoted the whole of the answer to the method for calculating the R_s value. There is no requirement to carry out any calculations, which clearly takes up valuable time for any candidates who does this. A substantial number of candidates erroneously discussed the Mann-Whitney test or the use of descriptive statistics.

2682/02 - Geographical Investigation (Report)

General Comments

Overall Standard: The majority of Candidates achieved Level 3, with very few remaining in Level 1 or 2. Few candidates did not represent all five stages of a Report – although in some cases the headings varied from the normal format or there were none at all. Candidates are demonstrating substantial development compared to GCSE, particularly in the analysis and evaluation of outcomes. Most candidates from most Centres presented Reports with a clear and logical structure. 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 for – 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: The essence of a good report is relevance and quality not quantity. The data collected and analysis should relate to the question that has been identified at the beginning of the Report. This includes reference to any models and theories that have been presented. The aim of the Report should be to examine no more than 2 or 3 hypotheses, so that they can be discussed in depth, rather than a superficial description of numerous variables. Overall, the stated hypotheses were relevant and reasonable for AS Candidates to achieve. When students were involved in a large group data collection exercise on a large number of variables, there was a temptation to write too much. Those who collected data for only a limited number of variables seemed to fare much better. Generally, they were also organised and presented well.

There was a balance between physical and human investigation topics, encompassing a variety of subjects. Nearly all Reports were field studies centre or Centre led: differentiation was achieved by assessing the candidate's skill in manipulating the data collected. Candidates at some Centres produce far too many figures/graphs/photographs. Others included lengthy Annexes (up to 20 pages), often with material downloaded from the internet.

Supporting figures: As with the textual content, a few well chosen, appropriate figures can gain as much credit as many pages of repetitive, poorly conceived and irrelevant figures. Thus, it is important for the reader to be able to compare like for like variables on the same page – with the same scales on axes for graphs, e.g. 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 is seldom any 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 do not achieve their potential: this is often because they struggle to come to terms with the need to be concise. There were numerous rubric infringements. Those candidates that exceed the word limit are penalised so that they will not enter Level 4, as stated in the Specification. A substantial number of Candidates – particularly at certain Centres – vastly underestimated the word count. This was in many cases due to the erroneously excluding continuous text in tables and/or annotations from the word count.

Comments on Administration and Presentation

1) Rubric Error: Length of Report

The stated length of Reports was often substantially above 1,000 words, and there were many more cases where the stated word count bore no resemblance to the actual word count. This was either due to miscounting or the use of tables and/or annotations with continuous text content that had not been included in the word count. Over length Reports cannot enter Level 4 (13-15 marks). A related issue is that some Centres did not encourage their candidates to conduct a word count and thus wrote 1,000 words in the appropriate space or did not fill it out at all. **In the interest of fairness for all Candidates the word count should be adhered to and an accurate word count supplied.** It should also be noted that concise writing is an important skill.

2) Format

- (a) Most candidates 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 Candidates used alternative headings which were recognisable as the 5 stages, as were those using a full essay style approach without headings. For the latter, the structure of the Report was often more difficult to understand.
- (b) Each Centre is required to provide one Authentication Sheet signed and dated by all relevant members of staff.
- (c) Each candidate is required to provide a Coursework Cover Sheet (CCS202) signed and dated by the candidate and a member of staff. A true word count – not an estimate – must be provided. The current CCS202 can be downloaded from the OCR Website.

3) Presentation

- (a) The preferred method of presenting the Report is for it to be **held together with a treasury tag**. There is no need for folders, wallets, clip files, clips, staples or plastic envelopes which all cause administrative problems and are often less easy to read. Conversely, loose sheets are also hard to manage – as are those with 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 that should be read by the examiner, it should be given in the five stages and be counted within the word limit: the examiner should not be required to read through many pages of Annexes to find the reference.
- (b) There is generally a good **standard** of presentation within the Reports such as:
 - Easy to read text which has been proof read, e.g. it is not difficult to give the correct name for the Mann-Whitney test (not *Whiney-Mann* or *Mann Witney*). Handwritten reports can score just as highly as typed ones that have been badly proof read;
 - 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.
- (c) The purpose of **maps, figures, tables, photographs and graphs** is to:
- Provide evidence of the data collected;
 - Specifically relate to the question and hypotheses chosen for investigation;
 - They should be neatly presented (appropriate shading graded to match “high” to “low”, using rulers) and given appropriate titles and labels.
 - 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. Overall, the quality of maps – a cornerstone of good geographical reporting – was disappointing. The absence of maps in numerous Reports was noticeable;
 - Appropriately annotated photographs;
 - There is not more than one method of presenting a piece of information, e.g. 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, e.g. all the cross sections of a river study on one page;
 - Axes are labelled correctly;
 - Line graphs should not purport to show a relationship where it cannot exist, e.g. 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, there is a case for comparing positions along the transects.

Overall Qualities of Candidates

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 or three well defined hypotheses, enabling depth of discussion to take place, rather than superficial analysis of many hypotheses. They do not include irrelevant material and the sections are balanced, are not tempted to make Identifying a Question and Data Collection too long at the expense of Analysis, Interpretation and Evaluation and a scant Presentation of a Summary. There is a clear understanding that the functions of figures etc are 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. 'E' grade candidates typically select numerous poorly defined hypotheses, with little scope for depth of discussion. Irrelevant material is 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 a little understanding that the functions of figures etc. are 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 some awareness of the appropriate methods of representing data. The weakest Reports tend to be far too general and lack attention to detail. They often have insufficient quality data, are untidily presented and/or use techniques which are poorly understood.

Comments on the Five Stages of the Report

The subject matter of the Reports was nearly always appropriate, since the candidates were able to take advice from their Centre. Physical topics such as psammomeres and river studies tend 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 – too much space devoted to how to calculate Mann-Whitney leaves little room for evaluation. Reports must clearly relate to and refer to a specific study location.

Identifying a Question

Indicative content: Succinct contextual information (including a relevant labelled map), a clear question and correct supporting hypotheses or aims – there is no need for more than 2 or 3 hypotheses. The null hypothesis states that no relationship is expected between two variables, whilst the alternative hypothesis states that a relationship is expected, and indicates the direction/nature of this expected relationship.

Qualities of A grade Candidates: Succinct contextual information (including a relevant labelled map), a clear question and correct supporting hypotheses or aims. The null hypothesis 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. No more than three hypotheses are investigated – two are perfectly adequate.

Other Comments: This section is 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. Some theory, for instance on urban models or settlement hierarchies, appeared but was only vaguely referred to in the analysis section.

A substantial number of Level 3 candidates suffered from using too many variables leading to substantially over length Reports or rather meaningless generalised Reports within the word limit. Weaker Candidates: Reports were highly imbalanced – they may have had little (or no) contextual information or a lengthy description of the context. The map, if any, was inappropriate and poorly labelled. Hypotheses, if any, were not clearly related to the question or their purpose was not understood well; stated hypotheses did not correspond with the relationships considered in analysis – or even with the data collected. Alternatively numerous hypotheses were proposed which could not be analysed in depth and often led to an imbalanced Report with a lengthy Collection of Data section and limited Analysis, Interpretation and Evaluation. There is no need for historical detail or to explain why the topic was chosen or to state that the Candidate is interested in a topic and hopes to do well.

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 are justified in terms of theory, e.g. the discharge increases downstream due to increased inputs to rivers towards the estuary. The risk assessment specifically relates to the study site and is realistic. Preparation for data collection is discussed in the light of practical and theoretical considerations, e.g. content of data collection forms; selecting appropriate equipment; identifying constraints on where data collection can take place.

Other Comments: Many candidates referred to risk assessment. However, overall this stage was often weak compared to the rest of the Report. Many candidates commented only vaguely, or not at all, on their sampling strategies, or how their strategy for data collection was tailored to the available resources (e.g. manpower, time) or sampling strategy was not understood. Weaker candidates made this section overlap with the next stage or even placed the contents in the wrong order. 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 to be organised. A statement such as “*I wanted to collect as much different data as possible*” did not consider how this could be managed in a 1,000 word Report.

Collection of Data

Indicative content: The sites/transects for measurement are selected and the type of sampling used (pragmatic, random, systematic, stratified) is defined. The sample size for each transect (if used) and each site thereon is given and is appropriate, e.g. 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 is spent on methods of data collection apart from the discussion of sampling issues. This is a well balanced section: the sampling location is identified; the type of sampling is clearly understood and described. The data to be collected is relevant to the aims/hypotheses. There is a concise description of how data is collected in the field. The accuracy of data collected is considered. Data is represented in an appropriate form by the use of tables, graphs, charts, maps, and/or sketch maps.

Other Comments: It was noticeable that questionnaires were often undertaken with very few people being interviewed. This section tended to be long at the expense of the Analysis, Interpretation and Evaluation. Where Centres had sampled numerous variables irrelevant data was often presented, but then not used. Conversely, most candidates had no problem collecting numerical data, but not all submitted it. Nevertheless, quick reference to graphs and or statistical analysis soon confirmed that the data did indeed exist. Field sketches, where included, were generally poor. There seems to have been a vast improvement this year on the annotation of graphs and photographs. In addition, photos included were mostly relevant.

Weaker candidates either wrote in great detail about how data was collected or provide almost no description at all or gave a confused description; they tended to omit the sample size and discussed more variables than is appropriate for the stated aim/hypotheses. The purpose of this stage may be misunderstood as only consisting of graphs, photographs etc.

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 is clear, relevant and relates to all the data collected. There is a serious attempt to explain relationships and anomalies – possibly with the use of field notes and clearly referenced secondary evidence. The relationship between the outcomes of the hypotheses may be referred to. There is numerical evidence that data has been analysed using descriptive statistics and/or a statistical test: appropriate formulae are used; the calculations are correct; and confidence levels are tested (where appropriate) and interpreted. There is a clear discussion of the extent to which geographical theory is found in reality at the site. Analysis may be supported by the use of annotations on the data collected and photographs. These candidates are also able to successfully compare secondary data, e.g. derived from the 2001 Census, with their own primary data.

Other Comments: The quality of this section is highly variable. Thus, this section often sets the better candidates apart from the weaker ones – although because many of the latter had gone over length, this is not always reflected in the final mark. The highlighting of anomalies was better this year, although weaker candidates tended to blame “anomalous data” for low Spearman’s rank correlation coefficients. The tendency for analysis sections to appear with very little text is also apparent in which a cursory comment is made for each graph or the outcome of statistical testing and then all the points are drawn together in the summary section at the end, making it difficult for the examiner to follow.

Most candidates use some method of statistical testing. Some regard statistical testing as a hurdle to be jumped rather than as a way of furthering their understanding of the outcomes. Too many candidates still use Spearman’s with a very low number of cases and Mann-Whitney is not always completed. Too often Candidates use a computer to do the calculations and do not understand the full significance of the result. Not only is significance testing not always used but the use of significance tables is also not clearly understood and this results in some clumsy statements.

Weaker candidates give a lengthy description of the outcomes, whilst relationships and anomalies are not noted or explained. Interpretation consists of poorly expressed, generalised statements and there is no reference to geographical theory – particularly models noted earlier in the Report. The meaning of some variables is not understood, e.g. confusing altitude and gradient. Statistical tests are incomplete. Mann-Whitney (difference between data sets) is confused with Spearman (association between data sets). Computational errors are common, e.g. the formula for Spearman omits “1-..” Candidates simply stated that the study went well and outcomes were as predicted – even when they were not. Land use models are dealt with in a summary manner if at all. It should be noted that the Mann-Whitney test is used to determine whether two sets of data come from the same population – it does not decide whether the samples are “fair.”

Presentation of a Summary

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

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

Other Comments: This is often the weakest part of the Report. Candidates brought in analysis and evaluation that had not been discussed in earlier stages. Alternatively, the Summary consisted of two or three lines with little substance – often due to the constraints of the word count, having made the preceding sections too long. Another less effective approach was to restate what was expected rather than the actual findings. In general, any evaluation was poor, being rather vague, e.g. “*More samples could have been taken and at different times of the year or on different days*” and was often focused on how the study could be extended.

2683 - Options in Physical and Human Geography

General Comments

It has been a real pleasure to read the good number of scripts containing responses of quality. Examiners have encountered knowledge and understanding of spatial patterns and processes that can only have emerged from a genuine engagement with the subject by both students and colleagues teaching in some of our Centres. By way of contrast, too many scripts displayed only a mechanistic approach in that they simply did not address the actual question set. Such candidates were unable, or unwilling, to relax their tight reconstruction of memorised material so that their answers bore little relevance to the topic as defined by the question. The most extreme context in which this approach was seen all too frequently, was the question in the Coastal Option based on the Ordnance Survey map extract. Instead of application to the map, candidates offered material from a variety of distant coastlines.

A trend that examiners have noted previously and which emerged quite strongly in this session amongst the lower half of the candidature, was the relatively weak grasp of the details and nuances of key processes, both physical and human. Candidates should be reminded that this is an A2 paper sat not long before many will be engaged with university level work. As such, knowledge and understanding that is little advanced from GCSE level is an insufficient foundation on which to write answers that convince.

As with previous sessions, examiners saw some excellent diagrams and sketch maps that enhanced answers by offering knowledge and understanding not contained in the accompanying extended prose: descriptive or explanatory labels will earn credit. Once again Centres are encouraged to use such methods when completing routine exercises in preparation for external assessment.

While the majority of scripts consisted of appropriate levels of spelling, punctuation and grammar, examiners were disappointed to come across too many scripts within which paragraphs were a rarity. Even scripts whose content suggested they were written by candidates of high quality, tended to be minimalist in their structure and punctuation. One trend that is emerging is the use of abbreviations that are the invention of the candidates. Examiners read far too frequently, for example, such formats as 'SL' for sea level, 'MI' for manufacturing industry, 'NPs' for National Parks and 'BM' for Butler model. Centres are urged to impress on candidates that such an approach does not constitute acceptable prose.

Comments on Individual Questions

Option 1: Coastal Environments

Q1. There were many candidates offering descriptions of the causes of changing sea levels: most of these were at the least sound. A significant number of responses were authoritative in their understanding and substantial in their knowledge. Glacio-eustacy and glacio-isostacy were well described supported by effective diagrams of the effect of ice on landmasses. There was also much mention of more recent causes of change, that is the rise in sea level resulting from global warming. It was, however, disappointing that too few candidates ascribed a major response to warming as the thermal expansion of water. It tended to be the weaker responses that relied heavily on global warming in this section with their focus almost exclusively on ice melt. Perhaps a key issue for candidates to deal with in their study of this topic is that of relative or net change. Those answers recognising that as well as a post-glacial rise in sea level, a recovery in the land level has also been occurring, generally took themselves into Level 3. In sub-part (b), most candidates were able to offer some of the landforms most closely associated with changes in sea level. Examiners reported seeing many encouraging examples of effective diagram work supporting and indeed enhancing explanations. It was good to read many answers discussing the accumulation of shingle landforms such as bars and barrier beaches as well as

the features such as raised beaches, relict cliff lines, rias and fjords. The better responses gave suitable exemplification. It is, however, disappointing that the Dalmatian coastline is still mostly referred to as being in Yugoslavia, rather than in Croatia. Perhaps as more candidates travel to this area as tourists, this error will be eliminated.

Q2. This question employed an Ordnance Survey extract of part of south-west Wales at 1:50 000 scale. The descriptions of the coastal landforms ranged right across the scale. The better efforts responded directly to the map extract, offering detailed descriptions of both the erosional and depositional landforms. Accurate grid references, place names and, in the top quartile of scripts, dimensions were welcome indications of the application of knowledge and understanding. It was to this question that examiners also read far too many answers that simply failed to engage with the map. Thus this stretch of coastline included spits, barrier beaches and rias. Such answers were also characterised by the inclusion of references and sketch maps of coastlines such as Dorset, Holderness and Norfolk. Explanations likewise varied from those willing and able to apply their knowledge and understanding to the particular circumstances of the area mapped to those who saw this as an opportunity to reproduce their material on Lulworth Cove and Swanage Bay.

Q3. The final question in this Option focussed on sediment in the coastal system. In sub-part (a) descriptions of how sediment is transported and deposited were required. Dominant were accounts of long-shore drift but many candidates also included relevant information dealing with the movement of sediment on and off-shore. The relationship between entrainment and sediment size was not securely handled. A small minority of scripts contained references to the Hjulström curve which added significant conviction to their argument. The better scripts also made reference to saltation as a key mechanism in some locations. It was disappointing to read many scripts where good efforts had gone into describing transport but where deposition was largely ignored.

Explanations of the variations in beach profiles tended to be either well done or struggled to climb out of Level 1. Examiners are well aware of the diversity existing amongst sources regarding the naming of wave types but nevertheless there were too many candidates who struggled to understand the relationship between wave energy and beach profile. The calibre of sediment was a feature of large numbers of answers and seasonal changes tended to be included in Level 3 responses.

Option 2: Fluvial Environments

Q4. Few answers were seen to this question, and those that were, tended to be disappointing as they lacked detail in sub-part (a). The more secure answers often included human activity as a contributory factor, for example the Colorado River in south-western USA.

Q5. Some well executed diagrams were submitted as responses to the question focussed on depositional fluvial landforms. The best answers included some notion of scale that might be expected for the respective landforms. Explanations of depositional landforms typically found in the lower reaches of a river tended, amongst the weaker candidates, to concentrate on the cross-section across a meander. The more convincing accounts offered a greater variety of landforms such as levees, ox-bow lakes and deltas.

Q6. This was by far the most popular question in the Fluvial Option. While most candidates offered sound descriptions of meandering channels, braided channels were not so securely known. Candidates should be reminded that this is an A2 paper and that descriptions that have extended beyond GCSE knowledge are expected. Thus comments about sinuosity, wave-length and amplitude are not out of place in such a response.

Explanations of why river channels change position were less convincing in their execution. In particular, meander migration was poorly outlined with many responses content simply to suggest that as there is greater erosion on the outside of the bend the river moves in that direction. Effective diagrams were few and far between as were other causes of channel shift.

This was disappointing as there is quite a variety of possible causes such as glacial diversion, river capture, flooding diversion and human activity. Some scripts focussed entirely on this last area, viewing this as an opportunity of writing all they could remember about river management.

Option 3: Glacial and Periglacial Environments

Q7. This was the most popular of the three questions in this Option. Although the concept of mass balance was quite well known and understood, examiners read few responses that wrote convincingly about the valley glacier as an open system. There were those who drew a set of three boxes labelled inputs, stores and outputs but with no suggestion that any sort of feedback occurred. Some did not grasp the idea of inputs and outputs entering and leaving the valley glacier. That said, there were exceptional scripts written by candidates who had a secure and comprehensive grasp of the concept. They were able to draw on their knowledge of ice movements in North Wales to identify the role of ice flows into Cwm Idwal as exemplifying the open nature of the glacier. It was disappointing that so few candidates identified the important input of gravity, without which the glacier would not flow.

The accompanying sub-part asked about the distinctive landforms resulting from the advance and retreat of a valley glacier. The weaker responses tended to consist of a catalogue of any or all the landforms that could be remembered. For some they could only include either erosional or depositional landforms. While examiners were prepared to award into Level 2 in some of the Assessment Objectives for good explanations of appropriate landforms, candidates need to be made aware that for higher marks such material must be clearly linked with advance and retreat of the valley glacier. For example, various types of moraines can be linked with advance and retreat/recession. It was disappointing to read many accounts of drumlins that relied for their explanation on retreating ice. The very best answers considered how a re-advance of ice will re-work previous material such as till or fluvio-glacial deposits and thus make more complicated the task of understanding glaciated areas. There had clearly been some quality field study in locations such as North Wales and Iceland.

Q8. Candidates opting to tackle this question were more successful with their response to sub-part (a) than with (b). In the former, erosion processes were generally more convincingly handled than transport, although plucking seems to be less securely known than other processes. It was good to read, although in a minority of responses, comments about the efficacy of glacial erosion in terms of the preparation of weathered rock due to intense periglacial activity as a stadal develops.

It was with the second part of the question that most candidates struggled. From their scripts it would seem that they knew little about the topic they had chosen to write about. They tended to follow one of three routes; generalised descriptions of glacial features such as troughs; generalised descriptions of glacio-fluvial features such as eskers; or descriptions of peri-glacial features such as pingos. There were very few clear references to weathering and slope processes and their relationship to periglacial landforms such as asymmetric valleys, scree slopes or lobes and terraces.

Q9. This was the second most popular question in this Option and whilst drawing plenty of sound responses, did not elicit the very best from many candidates. References to sediment sorting and stratification were common but less frequently read by examiners were comments concerning contrasts in rounding and orientation. The weaker answers tended to consist of lengthy descriptions of the different landforms associated with deposition, both glacial and glacio-fluvial. In the second part candidates were secure in their knowledge and understanding of the role of sub-glacial water in terms of its potential for erosion and transport of sediment. Only a minority were secure in their understanding of water's role in basal sliding and, therefore, with regard to erosional processes.

Option 4: Hot arid and Semi-arid environments

Q10. Candidates studying this Option demonstrated good knowledge and understanding of the weathering processes commonly found in arid environments. Centres teaching this specialist physical topic are clearly in tune with the latest thinking concerning processes and patterns. Thoughtful comments about the role of water, the importance of salt weathering and the significance of contrasting mineral types within rocks were all convincingly outlined in many responses. It was also encouraging to read many accounts that highlighted the operation of freeze-thaw in some desert locations. Most of the responses to sub-part (b) were sound or better, making detailed reference to processes such as abrasion and deflation and exemplifying their operation in terms of appropriate landforms. The processes of transport were well understood although it was only from the upper quartile of answers that comments about wind turbulence arose. A significant minority of scripts had dunes and their formation as the main focus in this sub-part: a disappointing interpretation as these are depositional features and so beyond the remit of this question.

Q11. Some responses to this question focussed on the cycling of water were very competent. The more convincing descriptions used a systems approach to deal thoroughly with the types of inputs, the nature of stores and processes and then linked these with outputs such as evaporation and flash flooding. The accompanying sub-part asked about the impact of human activity on hydrology in arid locations. Effective use was made of large scale impacts such as those on the Aral Sea, although it would be good if more candidates were aware of recent positive changes to this region's hydrology. It was also encouraging to read explanations that did not just focus on the negative impacts at the small scale. The employment of low stone walls in areas such as the Sahel was a widely used example of this.

Q12. Descriptions of the main characteristics of desert climates tended to over-complicate matters with some candidates soon taking their responses into explanation of the distribution of arid areas. It was, however, encouraging that nearly all responses attempted to describe ideas of water balance rather than simply focus on precipitation totals. The one element of climate that tended to be missing was any consideration of winds. Sub-part (b) was not well tackled as the key element of variability amongst arid locations was not addressed. Candidates tended to answer this question indirectly as they described the different factors that lead to arid regions. Thus they offered comments about continental interiors and coastal deserts but did not explicitly contrast their variations in aridity. Points such as latitude and altitude were hardly ever mentioned.

Option 5: Applied Climatology

Very few candidates answered questions from this option and so it is not possible to make meaningful comments about patterns and trends in responses.

Option 6: Agriculture and Food

Q16. The very few candidates who attempted this question found its theme difficult to focus on. Comments directly concerned with how variations in person per unit area can influence farming were few and far between. Answers tended to concern themselves with labour inputs to different farming types.

Q17. This was the most popular question, by far, in this Option. Most candidates offered some appropriate material with the more thoughtful responses picking up on the phrase in the question, '...different parts of the world...'. Typically descriptions included comments about greenhouses in mid to high latitude locations such as parts of Europe, terracing in South East

Asia and irrigation in a variety of places such as USA, Egypt and Australia. In the accompanying sub-part, candidates were expected to link explicitly relief with agricultural systems. The vast majority had good material dealing with slope, such as the reduction in the potential of machinery in areas of steep slopes. However, examiners rarely read responses in which the influences of altitude and aspect were dealt with securely. Some candidates were very muddled about how north and south facing slopes might influence agriculture in the northern hemisphere. One feature that helped responses into Level 3 was comment about the beneficial impact of increasing altitude in lower latitudes.

Q18. Descriptions of the distribution of commercial and non-commercial agricultural systems at the global scale were generally secure. Appropriate comments were seen from nearly all candidates about the fundamental contrast between MEDCS and LEDCs. Only the most aware candidates managed points about the types of commercial found in LEDCS, plantations and larger scale local farmers for example. The second sub-part focussed on non-commercial agricultural systems, asking candidates to explain how such systems respond to changing social and economic influences. It was disappointing how many candidates wrote superficial responses having managed an effective answer to part (a). They seemed unaware of the diverse nature of non-commercial systems, in particular how rare pure subsistence is as most farmers have some degree of involvement with markets. Social influences in particular were dealt with, with a lack of confidence. Thus points such as pressures on traditional inheritance practices and changing labour availability due to rural to urban migration were rarely read by examiners.

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

Q19. Most candidates were able to offer some appropriate points regarding the advantages of the rural-urban fringe as a location for modern manufacturing industry in MEDCs. Factors such as the relative cost of land, the amount of space available and improved relative accessibility were mentioned by many. Where candidates did not lift themselves to the top of Level 2 and Level 3 was when they did not make clear the link between the advantage and manufacturing industry. Thus the valid point of more space being available in the rural-urban fringe needed to be associated with the demands for space of modern manufacturing, much of which is housed in single-storey buildings. Some candidates were not that convincing in their definition of rural-urban fringe. Simply to say, '... for example the M4 corridor' was too vague. The second sub-part was an effective discriminator as only the more thoughtful candidates maintained a clear focus on 'particular social groups.' Even here the tendency was to concentrate on decline with references to Consett common. Some candidates made very good use of material from LEDCs when dealing with industrial growth. The tragic example of Bhopal was deployed frequently by candidates pointing out the risks people with little choice face when living close to noxious industries.

Q20. This was the question of choice for the majority of candidates selecting from this Option. Although the basics were well understood the level of detail expected at A2 was not always achieved. For example the point that energy is considered to be ubiquitous in MEDCS is valid but a more convincing response then offered the point that the sheer quantity of energy required by some industries, electro-metallurgical for example, results in a restricted choice of potential locations. Also, in many LEDCS energy is far from widely available and even where the infrastructure is present, supply is not always constant thus interrupting production processes. Sub-part (b) saw quite a wide variety of responses. The weaker ones tended to offer an account of all the factors that influence manufacturing industry and failed to establish how raw materials and energy have changed in their effect. The more convincing responses focussed on the changing technologies of both processing and transport that have tended to reduce the locational role raw materials and energy now play in MEDCs. It was encouraging to read good numbers of answers mentioning the changing nature of manufacturing industry in MEDCs which has played a key role in altering the relative and absolute importance of energy and raw materials.

Q21. Descriptions of the measures governments can take to influence manufacturing location were generally convincing. The better responses saw government operating at a variety of scales and were able to exemplify their points. Examiners were also encouraged to read comments about both the direct and indirect roles government can take, grants and infrastructure for example. Amongst the weaker scripts, clearly recognisable government influences were often replaced by a vague 'they', as in '... they do this to help industry' with no qualification as to who and what. The pattern of response to sub-part (b) was strongly bi-modal, Level 3 or Level 1. Examiners were pleased to read scripts containing secure knowledge and understanding of what a core region is and how it can emerge through industrial growth. Such answers included authoritative references to agglomeration economies and the multiplier effect. These were, however, something of a rarity compared with the majority who conveyed little secure material. Responses in this category tended to have no theoretical underpinning of what constituted a core region and frequently were keen to assign the title, core, to any area they had studied "within" the M4 corridor, for example. While there was some mileage to be made using almost any such area, it had to convince that manufacturing was key and that resources had been located there initially and had been subsequently flowing into the region to sustain it at core level.

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

The sample of Centres on which comments about questions in this Option are made, is relatively small.

Q22. Answers dealing with bid-rent theory and trade area analysis were much more secure concerning the former than the latter. Given the variety of material that can be studied regarding trade areas, public transport services, local delivery areas, newspaper circulation, it was disappointing that candidates were not more authoritative in their descriptions. Generally, candidates were more comfortable with sub-part (b). Their responses dealt with a wide variety of the factors explaining recent changes in the retailing and office activities of central areas of cities. As in other Options, some candidates offered considerable quantities of pre-learned material without applying it to this particular question. Thus much was made of out-of-town shopping centres with details of their floor-space area and the types of retail located there but this was not related to changes in the centre of the urban area.

Q23. This was the question chosen by the majority of candidates who selected from this Option. The responses of this group were, by and large, competent as they were able to highlight the growth in second and holiday homes and the volume of retirement migration and link these trends to rural services. The discriminating aspect lay with the quality of link established, including exemplification. It was, therefore, those answers that established the point that thresholds for services such as low order retailing and schools are not sustained when there is an increase in the proportion of second and holiday homes, that tended to reach Level 3. The accompanying sub-part, looking at the measures adopted to address the changing demand for rural services, tended to produce sound answers. Examiners were disappointed, however, to read few responses in which there was detailed exemplification.

Q24. Only a handful of scripts containing an answer to this question were seen and so it is not possible to offer meaningful general comments.

Option 9: Tourism and Recreation and their Environmental Impacts

Q25. This was the most popular question in the Option but only rarely did examiners see scripts of real quality. Here was a classic example of candidates not answering the question set. Too often little or no distinction was made between resort and enclave and a significant number of candidates confused resort / enclave with region, such as Costa del Sol or even an entire country with Gambia often given enclave status! It was surprising that so few answers contained references to the resources such as beach and climate that were the starting point for some

categories of resorts / enclaves. The Butler model was well known and exemplified by a good number of candidates and while this moved them into Level 2, the absence of dedicated material on enclaves meant that Level 3 eluded them. It was encouraging, however, to read thoughtful material on the origins and development of tourist features such as Butlins and more recently, Centre-Parcs.

In sub-part (b) the focus was on changing economic and social conditions since 1950 and the way that these have been reflected in patterns of international tourism. Most candidates displayed sound or good knowledge and understanding of the economic and social changes but it was only those who offered a clear link with patterns who moved themselves into Level 3. Too often responses contained phrases such as '*... and so international tourism has increased.*' The more convincing answers offered comments about the changing destinations of international tourists bringing up to date references to eco-tourism and short-term city breaks within Europe. There was some encouraging material based on a theoretical understanding of ideas such as 'pleasure periphery' that was well applied with appropriate exemplification. Such use of a rigorous underpinning to patterns and processes is most welcome in this Option.

Q26. Descriptions of the measures taken to promote domestic tourism within MEDCs were characterised by their reluctance to engage directly and in detail with the question. Some strayed beyond the domestic and few could offer convincing details of actual measures. Potentially there is a diverse range of material relevant in this context ranging from national scale bodies to local organisations such as town councils and even individual parishes. The majority of responses focussed on the rejuvenation of seaside resorts, an appropriate topic for this question, but too often specific details were absent. The more secure answers included material such as the development of large indoor complexes often based around swimming and measures taken to either lengthen the season or attract additional sectors of tourists, for example Dickens week at Broadstairs.

Sub-part (b) was perhaps a little more securely answered by many although here the most common finding by examiners was of description rather than explanation. Some reproduced their material on seaside resorts from (a) but the more convincing responses included material; on the growth in use of facilities such as national parks and urban-based tourism as a result of increased disposable income and increased personal mobility.

Q27. The third question in this Option was popular and in general, sub-part (a) was tackled with a fair degree of success. This question allowed candidates to consider both MEDC and LEDC contexts, both of which offer a rich vein of exemplar material. Candidates who offer a sharp focus on 'government' initiatives tended to reach the top of Level 2 as a minimum. It was encouraging to read scripts where the candidates also attempted directly to deal with both social and economic development. Thus comments about tourism aiding the economic sustainability of areas such as the Llyn peninsula and thereby helping prevent out-migration of young adults, were valuable.

Examiners read many good responses to the question asking about the advantages and disadvantages of using tourism as a means of promoting social and economic development. The less convincing responses tended to concentrate on the issue of employment and cultural degradation, both of which are relevant here, but too often they were made in ways that were vague. At A2 level, evidence is expected that supports a general point rather than simply stating the assertion. Simply stating that 'leakage' occurs is insufficient for Levels 2 and 3; responses should demonstrate how leakage occurs, the ownership of hotels, the origin of products used in hotel construction and the nationalities of the various types of employees found within a hotel for example.

2684 - Synoptic Geography: People and Environment Options

General Comments

Candidates produced a wide range of performance. The large group that achieved the top grade did so by directly answering the question, using detailed examples and case studies and making obvious synoptic links. Those more marginal candidates had two or more of these essential elements missing. There were too many in this group reflecting poor preparation by individual candidates or most typically a failure to keep tightly relevant to the question being answered. The failure to read all the elements in the question was more pronounced in this examination and explains the disappointing results that some candidates must have achieved.

The questions on this unit are open-ended and evaluative so requiring careful thought and planning. Plans also help examiners trace the logic of the candidates thinking. It was encouraging to see that many 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 'e.g. 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. Weaker candidates tended to agree with any quote regardless of the scale, location or time period. Many candidates could still improve their responses by using a less descriptive approach in their answers.
- 4) Communication – this varied tremendously as in most years. This is an essay paper and so requires lengthy extended discursive writing. Weaker candidates found even the most basic forms of communication difficult. Spelling was of particular concern as many could not spell place names or geographical terms so rendering answers ineffective. Weaker candidates also struggled with the concept of the paragraph. Maps and diagrams were often included, which had little relevance to the discussion, as an attempt to meet the criteria of 'in different formats'. Another problem is the increasing use of inappropriate expression:

An answer to Q4: *'This is also apparent in England due to an abundance of chavs and chav-like behaviour throughout certain areas giving entire towns like Telford a bad name.'*

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.

Candidates must appreciate that their answers should:

- **Relate directly to the question set.** Some offered pre-learnt answers e.g. on the development of shanty towns for Q4 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; e.g. for Q 5 examples of decentralisation were exemplified by 'e.g. London';
- **Be clearly synoptic.** Most of the questions had clear possibilities for synoptic links e.g. Q5 could have linked into material from 2681 and wider environmental aspects when considering problems in urban areas. The link should be seamless so the discussion flows.

Selection of questions

This is of concern as so few candidates and centres elect to do the EU and rural management options. Nearly all candidates do the hazards option and this examination this produced nearly 95% of candidates doing questions from this option, chiefly Q10. The urban management section was equally popular and Q 4 was excessively popular.

Comments on individual Questions

Option 1: Geographical Aspects of the European Union

The candidates from one centre used all their examples from areas outside the EU – this is not appropriate. It is legitimate to quote examples outside the EU for means of comparison or where the EU has an interest e.g. EU fishing fleets in the Southern Atlantic.

Q1. This was not a popular question and it did require the discussion of three variables which proved challenging for many candidates. Most had no problems with the free movement of labour and many focused on the impact on the migration of labour from the new eastern European members:

Since countries such as Poland have joined the EU the free movement of labour has stripped Poland of its young qualified workers who have moved in large numbers (300,000) to the UK. This has given the UK a cheap supply of labour willing to do the jobs the British wouldn't do but has also left Poland without the best parts of its workforce.

Others saw this movement as feeding 'backwash' as in the Core-periphery model so benefiting the core at the expense of the periphery. This approach enabled more perceptive candidates to suggest that 'spread' was occurring helped by the free movement. Some illustrated this with the movement of investment (capital) and goods:

By investing in the periphery entrepreneurs can gain bigger returns on their capital as often costs are lower. Many industries from the core are re-locating in Spain or Greece where labour is cheaper and there are not so many restrictions on pollution.

Others saw the free movement of goods as undermining the traditional industries so leading to economic decline in regions such as the Rhur. Unfortunately this type of question can often lead

candidates to adopt rather biased views of the EU and so answers are less geographical and more polemic.

Q2. This was not a popular question and many missed the focus on the marine eco-system preferring to re-hash last summer's question on fishing's impact on communities. This is a classic example of where candidates seemed to prefer giving a previously rehearsed answer rather than directly answer the question set.

All agreed that current exploitation rates (often by non EU countries) are unsustainable but few got to grips with the damage to marine ecosystems although the reference to ecosystems invited a clear synoptic link with 2680. Some did try:

The widespread use of bottom trawling has resulted in the sea bed being scoured of all life. The ecosystem is obliterated and would take a very long time, if ever, to recover.

Some candidates took a more optimistic view that EU fishery policies would curb over-fishing and allow stocks to recover. This type of question is not easy to exemplify with locational examples but candidates should try and this would have enabled them to question whether this prognostication of doom is appropriate for all marine areas/ecosystems in the EU:

Fish farming such as salmon in Scotland and Norway and plaice in the Liim fiord in Denmark may be the solution and offer the most sustainable way for future fish production.

Q3. This was the most popular question in an otherwise unpopular option. Those that did attempt this question produced broadly effective answers to this well worn topic. Most candidates adopted the core-periphery model as a way of structuring their answers and agreed with the concept that the core had economic advantage. These in turn were reinforced by cumulative causation and virtuous circles for capital and labour.

Higher level responses, of which there were quite a high proportion, went on to contrast the advantages of the core with more peripheral areas – usually southern Italy or Norrland in Sweden:

Norrland has vast resources e.g. iron ore, Hydro power etc so should be a major industrial area but its remoteness from the core has meant it remains a relatively underdeveloped area especially as transport costs of its resources are high.

The highest level responses went on to look at exceptions to this pattern. Some quoted less prosperous areas in the core:

London is in the core but there are areas with economic disadvantage such as the older run-down inner urban areas blighted by poor quality housing, high unemployment, pollution and derelict land.

Or exceptions in the periphery:

The growth of tourism in southern Europe has resulted in areas of affluence or economic advantage such as the development of the Canary islands and Cyprus. Their very distance from the core is seen as an advantage.

Others went on to show how the EU is attempting to 'spread' growth via a number of policies and practices.

Option 2: Managing Urban Environments

Q4. This was a very popular question and most saw this as the 'shanty town question' so spent excessive time describing the growth of these areas rather than explain why they were created and why they persist. There was real confusion over what constitutes a slum and many responses started with a definition:

Slums can be defined as poorly built housing that occurs on the outskirts of regions

Clearly this definition better fits shanty towns and so gets the discussion off to a poorly focused start that misses the important aspect of the decline of once satisfactory property as in MEDCs. It must be stressed that not all shanty towns are slums. Few looked at the underlying mechanism whereby poverty forces people to occupy and persist in sub-standard housing. Some did examine the vicious circle of poverty that keeps some people in slums.

Some identified that it was the inability of LEDC governments to upgrade slums (at a sufficient rate to exceed the increasing demand) due to their lack of resources – i.e. the government's level of poverty:

As these countries have no money and are often in debt to the World Bank they can do little to remove slums as for many people living in a slum is better than no home at all.

So candidates thought that as LEDCs became more developed and so more wealthy they would have the resources to remove the slums. Others had the view that LEDC governments could remove slums in a variety of ways:

In Zimbabwe President Mugabe bulldozed the shanty towns so removing the slums at a stroke.

In Rio the Government has introduced Assisted Self Help (ASH) which provides materials e.g. cement for people to upgrade their wooden shacks into more sanitary and longer lasting buildings so removing the slums.

This is a worthwhile approach but candidates should appreciate that the problem is so large that such action only deals with the tip of the slum 'iceberg'. Lengthy descriptions of how such schemes work did little to advance the discussion. Others suggested the only way to halt the growth of slums in LEDCs was to stem the influx of migrants from the countryside by reducing the rural push factors. Some suggested that slums were not necessary a bad thing but represented a first step on the housing ladder often referring to the Turner model. Slums were areas of hope and aspiration!

A worthwhile approach was to compare LEDC and MEDC slums, their causes and attempted solutions. Candidates were less secure on MEDC case studies and either dismissed slums as easily solved by urban renewal schemes or gentrification:

Convent Garden was a slum area but following an influx of well doing middle class it became gentrified so old decaying buildings were improved as these people had the money to do it.

The more perceptive candidates saw many of the schemes in MEDCs (and LEDCs) as merely shifting the problems elsewhere as resources were tied up in slum clearance and such improvements often priced the existing residents out so they moved and occupied or created other areas of substandard housing.

Report on the Units Taken in June 2006

Q5. Few candidates focused on 'policies' and many saw decentralisation as an inevitable process of urbanisation including the establishment of out of town shopping or entertainment centres:

Industry has decentralised out to Greenfield sites away from the high cost and polluted central areas. This in turn has attracted population to move out to work in these industries.

This is dubious as a *policy* and cause-effect may not be accurate. A more perceptive response is:

London placed a greenbelt around itself so forcing new settlement and industry to locate beyond it.

Others went on to look at New Towns, regional policy (via incentives), transport policies etc. Those candidates that did not identify policies tended to focus on 'environmental problems' so giving detailed descriptions of types of pollution. This was the trigger for the usual accounts of Mexico City and Los Angeles. Few candidates seemed capable of linking the two aspects of the question in an effective cause-effect relationship. Many attempted simplistic arguments:

By removing industry from the inner areas of London there was less need to travel into work so congestion was reduced and in turn air pollution improved.

Some became too entrapped by solving urban environmental problems and so spent time on alternative (alternative to decentralisation) ways of lessening them usually based on a Brazilian example. Most candidates did see that decentralisation policies often spread the environmental problems over a yet wider area usually quoting the sprawl of Los Angeles as typical. Others suggested that such policies had made the situation worse for urban areas:

Decentralisation has removed the wealthy tax paying middle class who have moved out to commuter villages beyond the greenbelt. This means that the inner city is left with a decaying environment e.g. derelict factory sites but less money due to a lower tax base to tackle the resulting environmental problems.

Q6. This was not a popular question and many produced similar answers to those produced for Q4 as they saw 'inequalities in wealth' as poverty or slums. Again 'policies' was missed by most candidates. In this case these could be quite local e.g. the planned mix of housing on a new estate or on a much larger scale such as taxation or social security policies.

Most candidates could describe and exemplify 'inequalities in wealth':

In Sao Paulo the poor in their shanty towns, or favellas, are right up against the rich in their guarded luxury skyscrapers.

But few could explain why these inequalities occur and why they persist. Some did suggest that it was a vicious circle whereby the poor could not break out into more affluent areas or lifestyles:

The poor can't afford good housing or quality food so often they suffer from poor health. This in turn means they find it difficult holding down jobs so their income is low making them poor.

Some broadened the discussion to look at multiple deprivation in urban areas. Others took it as an excuse to discuss why schemes to help shanty town dwellers were doomed to fail. This could have been effective provided the focus was on inequalities of wealth rather than poor housing. Some more able candidates suggested that capitalist society needed these inequalities to function effectively and suggested a more centrally planned approach might be the only way of removing these inequalities. Others questioned whether they should be removed – with one

candidate quoting animal farm (a splendid synoptic link) – or only the extremes should be removed via education and taxation:

Education is the means to reduce inequalities. By educating the less wealthy it will enable them to get a well paid job that helps break the poverty cycle and so reduce the gulf in income between them and the wealthy.

Option 3: Managing Rural Environments

Q7. The word ‘challenge’ seemed to discourage the attempting of this question and those that did attempt it saw it as meaning problems. The typical response was a comparison of an upland area such as central Wales versus suburbanised villages as around Oxford.

Some even suggested that less remote areas didn’t need managing:

Rural areas near to the core are suffering counterurbanisation so are adopting a more self reliant middle class culture that requires no management by outside agencies and positively discourages it.

Most saw the statement as true reflecting the disadvantages of remote areas in terms of physical and economic geography – especially accessibility:

Remote areas of the Scottish highland are suffering depopulation due to its remoteness and cold climate. These areas need managing or they will consist of abandoned farms and overgrown fields.

Many candidates questioned the meaning of remoteness whilst others made the distinction between different elements of the rural economy or community. It was encouraging to see these attempts at looking to produce an evaluation.

Q8. This was the most popular question in this section but at times candidates got confused by the circular argument although it clearly invited the use of feedback systems or vicious/virtuous circles.

Most saw that it was the movement in of wealthy or retired people that forced out the younger locals who could not afford the increased house prices. This then led to economic problems:

The loss of the local working population and their replacement by wealthy commuters who buy their food etc in the distant town to which they commute means local thresholds fall and so rural shops close.

And social problems:

The increased number of retired people in rural areas means society and culture ages. There are few young people or children to keep the rural traditions alive so these die out to be replaced by a culture of retired.

Candidates were weaker at looking at how these problems resulted in further population changes. Most were simplistic:

The lack of shops and services means the poor who have no cars to commute with have to leave for the city to relocate near to shops and services.

Report on the Units Taken in June 2006

The chief problem with this question was the weakness in exemplification. Many candidates offered a single, often vague, example. Few offered any evaluation or suggested that the balance might vary with the level of remoteness or other factors.

Q9. This was not a popular question but often it produced effective answers with some perceptive comments:

All in all change is vital for protected landscapes in the UK. Most National Parks, AONBs and SSSIs are not natural and have been altered by men at some point in the past 400 years. Therefore change is vital for their growth and management of this growth is extremely important.

Most candidates did focus on the evaluation aspect of the question and some Centres made some effective reference to other countries and their view of national parks:

In the USA and Australia the areas covered by National Parks are so much bigger than the UK and there is less competition for the land as population density is so much lower. There is less pressure for change here than in the UK.

Exemplification was often detailed with case studies of situations where change had been allowed but managed and where it had been discouraged:

SSSIs often protect individual rare or protected species e.g. the bee orchid in the Grays chalk pit, Essex. As this species requires particular conditions to grow change can not be allowed or it may die out.

Most did see change as inevitable and so it required careful management.

Option 4: Hazardous Environments

Q10. This was a very popular question but few went beyond a comparison of LEDC v MEDC approach to disasters rather than purely hazardous environments. At times candidates knowledge bordered on stereotypes:

America is a MEDC so there is no poverty.

And this is in the face of the experience of New Orleans in Hurricane Katrina. More perceptive candidates wrote about relative poverty or made the telling point that poverty plays a significant role in the aftermath of a disaster. Many quoted the recent Pakistan earthquake where poor remote populations suffered greatly.

A very effective way was to compare two disasters of similar magnitude (hurricanes and earthquakes were popular) in contrasting areas – usually USA v a LEDC. Unfortunately the role of poverty was often implied:

Referring to the 'Boxing day Tsunamis' – This was due to a lack of early warning systems in the Indian Ocean as various governments don't spend the money to have advanced warning systems.

Few candidates were as straight forward as:

When the Tsunamis struck it was the poor local people in their flimsy shacks that were swept away whilst the wealthy tourists looked on from the more strongly built hotels.

Some candidates did take an effective approach by focusing more on the hazardous environments aspect and contrasted the way that poverty limited the ability to predict, mitigate,

Report on the Units Taken in June 2006

warn and evacuate such areas with the preparations wealthy populations and governments can take. At times such comments were simplistic:

As is often the norms in poor areas of the world there is little education or information on the disasters present and consequently many of the inhabitants of Pakistan did not know what to do in the event of an earthquake.

Candidates should appreciate that diagrams of various ways of earthquake proofing buildings did not gain a lot of credit. Some perceptive candidates did point out that sometimes poverty reduces the death rate:

Poor rural populations live in flimsy buildings unlike in towns so when an earthquake shakes them to bits people are injured rather than killed unlike the wealthier town people.

The majority of candidates did stress that some disasters are so large or so unpredictable that no matter what levels of poverty they are still killers on a terrible scale. Most used the Kobe earthquake in Japan to support this view.

Q11. Candidates clearly knew about storm surges and virtually all quoted Hurricane Katrina but few knew the full cause of such surges. Many were simplistic:

The strength of the wind in a Hurricane blows the sea in front of it forming a wall of water several metres high.

More able candidates did identify the role of low pressure in the eye as raising sea levels. Having described how a surge is formed most agreed that it was the most hazardous aspect although more perceptive candidates evaluated this from the very start:

If you live well in land on high relief then the surge will not reach you and not all hurricanes produce surges.

This candidate then went on to suggest that 'other' aspects might be more important depending on where you lived. In the case of the high relief:

Living on a steep hillside may expose you to the secondary hazard of landslides following torrential rains associated with a hurricane.

It is this kind of approach that scores well especially if supported by detailed and effective exemplification. Most candidates were well versed in case studies of the various primary and secondary hazards of Hurricanes. Some used their knowledge to suggest that other factors outweighed the aspects of hurricanes in determining the level of damage. Some mentioned the role of poverty (as in Q 10), urbanisation (as in Q12) or local geography:

Two Hurricanes of equal intensity (5) hit Honduras and Bangladesh in 1995. In Honduras the storm surge had little impact on its steep coast sheltered by reefs and mangrove swamps whereas in Bangladesh the low flat shallow coastline cleared of coastal vegetation allowed the surge to sweep in and drown 100,000 people.

Q12. The majority of candidates saw this as a question based on the role of urbanisation in increasing the vulnerability so missed the stress on *rapid* urbanisation in the last 50 years. Whilst this miss was not crucial it did shift the emphasis and allowed discussion of and exemplification from long urbanised areas such as Japan – usually the Kobe earthquake.

Surprisingly few candidates explained why urban areas were dangerous places in earthquakes. Perhaps it was too obvious to look at the hazards posed by falling buildings, fire from ruptured

Report on the Units Taken in June 2006

gas pipes, collapse of water mains and sewage pipes leading to disease etc. Most were content with more general comments:

Urbanisation brings people together so increasing the density of population. If an earthquake happens there are more people in one place so casualties will be higher.

Many compared the impact of earthquakes on LEDC urban areas (so making some passing link to rapid growth) and MEDC cities:

In Sao Paolo the favelas are crammed in an unplanned sprawl on steep slopes so if an earthquake happens a landslide will be triggered killing many. In wealthy areas like San Francisco the effective planning of buildings reduces the damage should an earthquake happen.

Such answers then tended to look at how buildings can be made earthquake proof – usually showing this in diagrams. Some suggested that urbanisation decreases vulnerability as it allows planning, emergency aid and support to be better concentrated so reducing death rates unlike the remote inaccessible areas of the Himalayas following the recent Pakistan earthquake.

Again many saw this question as the opportunity to discuss all the factors that make populations vulnerable:

It isn't the level of urbanisation but the level of poverty that is crucial. An urban area in an LEDC is more hazardous than in an MEDC as the latter has the wealth to plan for such an event and so reduce the vulnerability of the population.

Indeed at times it was difficult to tell if the candidate was answering Q12 or Q10 !

2685 - Personal Investigation Study

General Comments

Examiners felt that the general standard of work presented was comparable to previous years. If anything, there was a perception of a slightly better overall standard. As ever, the most successful studies were founded on questions justified on the basis of clear underlying geographical ideas, concepts or theories, but firmly based in the real world. A good study is characterised by completing the circle of enquiry by providing answers to the original questions based upon the data collected.

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

On an individual basis, candidates should be encouraged to number the pages of their studies and to give reference numbers to their presentation (eg Fig. 1, Map 3). This helps examiners to see more clearly how presentation and analysis relate to each other and, therefore, to give the candidate the appropriate mark. Although presentation and analysis are identified as two separate components in the mark criteria, candidates should be encouraged to regard them as complementary. Analysis should be referring to the material presented to answer the questions/hypotheses posed. This is much more difficult if there is a massive presentation section, followed by a separate analytical section, several pages removed.

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

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

It is pleasing to report that Centres generally seem to be managing the problem of sharing fieldwork more effectively. One examiner remarked that where group data were used "*the personal contribution of an individual towards the group effort was clearly identified.*" Another observed that group data collection exercises were tackled more responsibly this year. The balance is difficult to achieve, but most Centres are managing to enable candidates to identify their individual contribution. However, there are still a minority of Centres that pursue the use of grouped data too far. Situations where a whole Centre of significant size collect and share data are not really acceptable in an assessment component that is entitled a **Personal** Investigative Study. It is very difficult in these circumstances for examiners to discriminate between candidates. Where Centres have tried to tackle this problem by ensuring candidates are looking at different questions or hypotheses, this leads to some contrived questions or hypotheses. Candidates often also included irrelevant data collection and presentation in their studies, because it has been part of questions that other students are examining.

Once again, it is pleasing to report that most Centres had guided their candidates to produce studies to meet the word length requirement but there remained a significant number of studies that were over length; a transgression sometimes compounded by the candidate declaring a clearly false word count on the cover sheet. There appeared to be an increasing trend for candidates to attempt to overcome the problem of word count by including substantive material in tables. This was particularly common in descriptions and explanations of data collection, but more often than not consisted of full sentences, simply surrounded by boxes. While this is a valid means of presenting this information, the words used in the table should be regarded as part of the word count. **The revised edition of the specification includes very specific provision to ensure that candidates who do meet the length requirements are rewarded positively.** In a significant number of cases, the problem of overlength is self-imposed. There were many instances of candidates including unnecessary words:

- sections in both the introduction and the methods that were virtually identical and involved considerable repetition;
- the expression of aims in three separate ways: aims, followed by hypotheses, followed by null hypotheses – only one of these is necessary;
- completely unnecessary paragraphs, such as the following:

On the following pages I have included graphs which show the general trend represented by my results. These are followed by the statistical tests which prove whether or not my results occurred due to geography theory or whether they simply occurred by chance.

This section is where I display the data I collected in a graphical way. I will use my charts, graphs and maps and a combination of geographical techniques to help me display the data in interesting ways.

It has to be stressed, however, that many candidates produced high quality work, showing an individual element and a good understanding of the underlying geography applied to a particular place. One examiner remarked that “*many candidates produced studies that investigated original topics that were impressively well-planned and researched.*” Another noted that “*some candidates produce work of exceptionally high quality far outweighing the marks available for them for this component.*” These sorts of comments were not unique, and it is a pleasure to read such examples of outstanding scholarship.

Comments on individual questions

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

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

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

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

As one examiner put it: *"Good studies were well-situated within a relevant and illustrated conceptual/theoretical framework"*.

Many of the studies that were less effective were undermined by the formulation of topics that were either inappropriate or unfeasible in part. The lack of feasibility was apparent in several different forms. Some studies undertaken were unfeasible in terms of scale. For example, studies of how rivers change downstream based upon a 1-2 kilometre stretch are unlikely to demonstrate any significant change: 10 –20 kilometres would be much more realistic. At the other end of the scale, comparative studies of broad regional patterns, such as agricultural comparisons between regions located widely apart, are at too large a scale. Some studies were inappropriate in concept. The examination of **urban** morphology in the context of a village with a population of 1,200 is a case in point. Similarly, attempting to assess the impact of a development that has not yet taken place is impractical. Incidentally, it is also difficult to produce a successful study that attempts to assess the impact of an existing development, because of the usual lack of any "before" data.

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

"Deciduous woodland will have greater ground biodiversity than coniferous woodland."

"As distance from the PLVI increases, the pedestrian density decreases."

The use of hypotheses does, however, have to be treated with caution and a significant number of candidates in this year's entry repeated mistakes in the use of hypotheses which have appeared in previous years. In particular, candidates should be advised to avoid:

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

Even with a feasible geographical question at a suitable scale, some candidates limited their attainment to L3 or L4 because of the lack or limited nature of conceptual or theoretical support. A key element in the presentation of such supporting material is that it should be clearly relevant to the questions/hypotheses being examined. The blanket inclusion of a theoretical section, whose relevance is not linked to the questions or hypotheses posed can gain only minimal credit. This was most apparent in studies examining the CBD, where a significant number of candidates included material on general urban structure (Burgess, Hoyt, Mann), which was of only marginal relevance to examining the structure or delimiting the CBD. Two of the assessment criteria highlight the explanation of *"the reasonableness of the question or hypothesis in terms of the geography of the chosen theme"* and the *"setting of the question or hypothesis in the relevant geographical theory."* Justification of the study should, therefore, be in conceptual/theoretical and locational terms, not in personal terms. Phrases like *"I find this part of the syllabus interesting"* are not valid forms of justification.

Successful studies also show some sense of place, conveying clearly that the geographical ideas and concepts being examined are related to the real world. Examples would include urban deprivation studies that identify areas that are more or less deprived than might be expected and

provide descriptions and explanations that give a flavour for the defining characteristics of those areas. So too would river studies that identify anomalies in downstream changes and relate those to specific features of the valley landscape, such as underlying geography or human activity.

Finally, in this section, some comments regarding the “planning” element in the assessment criteria. This can be dealt with very briefly with an outline of the data to be collected. For example, a study of how deprivation varies within an urban area, a candidate need only identify the different measures of deprivation to be used, the sources of the data for those measures and the locations of the places to be sampled. The addition of a relevant risk assessment would then complete the strategic planning. Detail about the justification and implementation of these methods can then be placed in the methodological section. It is apparent that many candidates waste words here by repeating material in the introduction and then in the methodology.

2) Carrying out programmes of data collection using selected sampling strategies.

The majority of studies now achieve an appropriate balance between primary and secondary data. The important word here is appropriate. For many studies, especially those involved with physical geography, primary data are more significant than secondary.

There are four principal issues in relation to the data collected: the volume of data collected, consideration of reliability and accuracy, the justification or explanation of the methods employed and the detail employed in considering secondary data.

One examiner observed correctly that *“the majority are now collecting enough data.”* However, there are a significant minority who still collect insufficient data. A sample size of 15 questionnaires is insufficient, as is data collection that takes “a few hours”. Quantity of data links with reliability and accuracy. Candidates often pay little explicit attention to this element in the assessment criteria, but are able to gain credit because readings are repeated to produce averages, or sample sizes are large enough to suggest representative data. For example, a study examining the urban heat island effect that is based upon one days readings at twenty sites along a transect, has very limited reliability. Successful studies replicate the data collection on different days and at different times. It is difficult to give hard and fast rules about the amount of time that should be spent on the fieldwork element of investigation, but it is unlikely that meaningful results can be collected in less than two days.

Almost all studies now mention sampling as an important component of the data collection procedure and the best explain the significance of the methods employed. Descriptions are usually clear but the reasons for employing the particular method chosen are often weak or non-existent. Some candidates substitute generalised discussions of different sampling frameworks for reasoned arguments for their chosen method. The latter approach is the one to adopt. A significant number of studies would be improved if they showed their sampling locations and transects on a map.

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

“...after more secondary research mainly using the Internet and the council’s website, but also newspaper articles, ...”

Very few candidates go into any detail about exactly where the secondary data were obtained. In relation to Census data, for example, the source will often be dismissed in a part sentence referring to the Library. The exact nature of the data obtained and its precise source need to be identified and referenced in the Bibliography. The same is true for all other secondary sources, especially maps downloaded from the Internet, which are rarely referenced. Candidates would

benefit from being given advice about how to reference, using standard approaches such as the Harvard system.

These comments notwithstanding, this element remains one of the strongest of the five assessment headings. Successful studies described the detail of the methods employed concisely and without repetition, but importantly justify the choice of methods and their implementation. With less successful studies, explanation was lacking and it is sometimes unclear how the data collected related specifically to the aims of the study.

3) Representing data using the most appropriate methods

Appropriateness is the most significant element in this assessment area, and most studies do select the appropriate techniques but, as already noticed, there is a considerable variability in the quality of representation. Three points made last year are worth reiterating. First, the use of pie charts is often appropriate, but not when there are too many subdivisions. Second, material that is meant to be comparative needs to be presented in such a way that comparison is easy: this necessitates the use of graphs of the same size, using the same vertical and horizontal scales and placing material side by side: failure to comply with this basic idea often leads candidates to scoring at a level lower. Third, raw data sheets do not represent appropriate representation. One example of data recording sheets should be included to inform the **Data Collection** section.

Four other issues which, if addressed, would improve performance on this element, were also noted by many examiners. There is an increase in the use of maps downloaded from the Internet. These clearly have a place in helping to locate studies and are to be encouraged. However, a significant number of candidates include such material without apparently thinking about its value. Many such maps lacked scales and appropriate titles, or reference in the text. Related to this was the comment that many of the less successful studies did not label graphs clearly and accurately. This applied to both hand-drawn and computer generated material. Third, there is the issue of spatial presentation. Most studies presented have a clear spatial element, but many of these fail to include appropriate spatial representation. For example, a number of studies focussing on urban structure contained no maps of the chosen urban area to demonstrate where different land uses occurred. In addition examiners felt that many studies would benefit from including accurate maps showing the locations of sample points. Finally, some candidates adopt an indiscriminate approach to representation, including graphs for everything, but then only referring to a small part of the presented material. Such unutilised presentation is effectively irrelevant to the study and cannot gain credit. Candidates should be encouraged to be selective about the material presented, especially from a questionnaire. For example, graphs to show age and sex of respondents are often included, but are not used for any purpose.

In terms of organisation, a significant number of studies continue to put all the presentation in appendices, rather than including them in the body of the study. As one examiner observed: *“putting important presentation work into appendices at the back of the field work ... hinders the presentation and in a number of cases makes it difficult to evaluate.”*

The effective use of annotated photographs highlighted last year continues to be a positive feature of this element. One examiner felt that *“annotation was the most improved skill”* this year, while another summed up the general trend by noting the greater *“evidence of well-annotated photographic images, which advanced candidates’ arguments.”*

Finally, once again, those candidates that integrated presentation with analysis through specific reference to the presentation scored significantly better than those that referred to presentation in a more general sense.

4) Analysing the data using appropriate techniques

There persists a tendency amongst candidates and, it appears, Centres to believe that statistical testing is the be all and end all of analysis. This is far from the reality. The following quotes from examiners partially illustrate this:

“There was frequent use of statistical tests when not absolutely necessary”

“Some candidates tested everything against each other while others did their one statistical test and ignored the chance of other potential tests.”

“Several Centres were determined to use Spearman’s rank come what may, and indeed seemed to think that using a statistical technique was all that was needed for this section giving only brief additional analysis and interpretation.”

To reiterate a point made in last year’s report, **Centres and candidates need to be aware that analysis does not need statistical testing.** The first stage in analysis is the interpretation of the data presented in relation to the original aims/questions/hypotheses. Statistical testing is the final stage in analysis, which should follow on from more simple description of the patterns, trends, differences identified. The overemphasis on statistical testing tends to lead, as one examiner put it, to *“the neglect of simple descriptive analysis.”* This often applies to the more successful studies as much as to the less successful ones. The value of measures of central tendency (mean, median, mode) and dispersion (range, inter-quartile range and standard deviation) remains under-utilised by candidates when it would be more appropriate that tests such as Spearman and Chi-square. Where statistical tests are used, the best studies explain why they were used, show evidence of the calculations made (this is something that could and should be legitimately placed in an appendix) and use the results to inform the analysis. Occasionally, tests were used but no reference was made to them at all in the textual analysis: this makes it very difficult to give much credit, because no interpretation of the results is involved.

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

In general, candidates would be better advised to interpret the data presented and use statistical testing sparingly and only if they understand why they are using a test and its limitations. In this context, one examiner noted that *“simple descriptive analysis was often ignored”*, while another remarked astutely that *“a scatter graph showing a clear positive or negative correlation has more impact than two pages of complex tables and calculations.”*

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

5) Drawing conclusions and the critical evaluation of their significance and reliability

As mentioned earlier, this tended to be the weakest section, even amongst the more successful studies. One reason for this was the relative briefness of some of the concluding sections, even taking into account the presence of concluding comments within the analytical section.

This section should be based upon three elements:

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

One examiner made an interesting suggestion as to how candidates might approach this element, which is worth considering.

“The conclusion should be treated as a ‘mini-essay’, which is written in response to their original question.”

Concluding comment

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

2686 - Investigative Skills

General Comments

This year showed another general improvement in the performance of many Centres. There were more balanced and better quality scripts and reports this year, often highlighting some of the suggestions proffered at the autumn INSET meetings of 2005. More disappointing was the considerable number of Centres who failed to include the necessary paperwork requirements and the couple of Centres who did not collect their scripts in candidate number order.

It is commonplace for an individual candidate to perform with considerable inequality between the three components of the paper and still attain a higher threshold grade than would be indicated by the weakest answer taken in isolation. The Report proved to be a great support for many candidates, particularly those at the weaker end of the academic spectrum. Many scored well on the Report; perhaps a testament to the excellent advice given by teaching staff in their schools. They were able to use the report in Section A allowing most to gain at least a level 2 mark. There were far fewer candidates who lifted sections of text from their Report and offered them as answers for Section A. The use of tables and annotated diagrams, as suggested at INSET, meant that candidates had to interpret their Report and synthesise information useful in their answer. **The Report, of course, will not be a part of the Summer 2007 examination.**

The number of rubric infringements regarding length has decreased. Fewer candidates are now submitting Reports with substantial appendices attached. The number of candidates who fail to admit that their word count was over the limit and resorted to creative accountancy does appear to have increased. Any tables or charts that have full sentences are part of the word count. Centres' attention is drawn to the considerable list of recommendations in the 2685 June 2005 Report that should be followed to ensure success.

Comments on individual questions

In **Section A** many candidates were able to use relevant areas of their enquiry to augment their responses. The better candidates based their answers wholly around their report. In **Q A1** the use of alternative methodologies proved to be a key discriminator. Better candidates were able to think laterally around the issue and produced a range of viable alternatives, with the emphasis on giving reasons for their choice. These reasons should have included clarity, effectiveness, and recovery of information and ease of construction.

In **Q 1(b)** the ability to discuss again discriminated between many candidates. This paper will always have a discursive element and those candidates who had experience of argumentative essays tended to score higher. The better candidates discussed the purpose of statistical analysis, significance and objective sampling. Those candidates, who did not present a reasoned argument, using examples from their own Enquiry, were limited to low level 2 marks.

In **Q A2 (a)** the key discriminator was the understanding of scale. Those candidates who saw that scale is vital in both data collection and analysis and were able to link this to their Report achieved level 3 in the mark scheme. **Q 2(b)** sought to explore the complexity of real world situations. The better candidates talked about the complexities of human behaviour; the problems of obtaining representative samples and the objectivity in collecting data. A discursive approach was required with examples integrated into the text.

Balanced answers were needed in **Q A3 (a)**. There was a need to show the compromise necessary between accuracy and practicality when deciding on sampling strategy. **Q A3 (b)** also highlighted the lack of background reading undertaken by many candidates. They were unable to support their expectations with recognised theories that had detail and accuracy. Simple

urban and hydrological models defeated many. The weaker candidates failed to use their Report and so did not back up the possible discrepancy with real examples. However, we all saw some excellent, discursive answers.

Section B provided the best test of Geographical ability. The key discriminator in all three questions tended to be how well the candidates used the stimulus material provided. In too many cases it was all but ignored. The better candidates integrated the material into their answers showing good photographic interpretation, map reading skills (including 6 figure grid references) and a sound grasp of sampling techniques. Again the ability to write discursively was vital, with candidates producing balanced answers leading to a conclusion which reflected the question asked. Centres' are encouraged to ensure that opportunities are given to their candidates to develop this vital skill.

Q B 1 (a) and (b) were well answered by most candidates, who showed a sound grasp of dot mapping. Poor answers did stand out and these tended to be clustered in a small number of Centres. The better candidates used the stimulus data fully and gave a clear indication how they would construct such maps.

Part B1 (c) asked for a critical assessment of statistical mapping suitability. Many candidates talked about choropleth, isopleth and proportional symbol maps. They presented reasons for and against each of the alternatives with reference to North Norfolk. Their conclusion outlined whether the dot map was a suitable method in this case.

Q B 2 (a) and (b) did not present too many initial problems for candidates. The discriminator was how well the candidates used the photographs and the street map. Place names, shop names and other visual clues were integrated into the better answers. Most candidates were able to give several potential problems about street questionnaires and were comfortable with the question.

B2 (c) asked about Chi-squared. Most candidates had a good working knowledge of the process. A failure to link this to Fig. 5 and to expand the answer to include the meaning and significance of any conclusions limited many to Level 2. The better candidates also looked at alternative methodologies and wrote discursively about them. They provided a clear conclusion to the question set.

Q B3 gave the widest range of answers. The range of unfamiliar stimulus material and the link to sampling strategies tested all those who attempted the question. **Q B3 (b)** elicited a wide range of responses. The creation of a stratified sample proved to be difficult for many. Some failed to estimate the relative proportions of the geological outcrops, whilst others dreamt up complex methods of generating a random sample. Weaker candidates failed to realise that land use maps can have 6 figure grid references, or that any strategy needs a feasible sample size.

Q B3 (c) asked for an assessment of alternative sampling methods. Specific consideration of fig 6 and 7 was needed for Level 3 responses. The better candidates not only described the methodologies but talked about their relative merits and problems. A conclusion was based upon these arguments giving a clear assessment of the issues raised.

It was obvious that most candidates had been well prepared for the examination and there were excellent examples of good fieldwork practice. **Please remember that the specification changes for 2007 and that no report is needed.**

**Advanced GCE
June 2006 Assessment Series**

Unit Threshold Marks

Unit		Maximum Mark	a	b	c	d	e	u
2680	Raw	100	65	58	51	44	37	0
	UMS	120	96	84	72	60	48	0
2681	Raw	59	45	40	35	31	27	0
	UMS	90	72	63	54	45	36	0
2682 01	Raw	60	40	36	33	29	25	0
2682 02	Raw	15	12	10	8	7	6	0
2682 Opt A	Raw	75	52	46	41	36	31	0
	UMS	90	72	63	54	45	36	0
2683	Raw	90	68	60	52	45	38	0
	UMS	90	72	63	54	45	36	0
2684	Raw	120	86	77	68	60	52	0
	UMS	120	96	84	72	60	48	0
2685	Raw	90	76	68	60	52	44	0
	UMS	90	72	63	54	45	36	0
2686	Raw	90	68	60	52	44	36	0
	UMS	90	72	63	54	45	36	0

Specification Aggregation Results

Overall threshold marks in UMS (i.e. after conversion of raw marks to uniform marks)

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

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

	A	B	C	D	E	U	Total Number of Candidates
3832	25.9	46.9	65.4	81.1	91.3	100	4795
7832	30.6	60.5	83.7	96.3	99.6	100	4340

Report on the Units Taken in June 2006

4340 candidates aggregated this series

For a description of how UMS marks are calculated see;
www.ocr.org.uk/OCR/WebSite/docroot/understand/ums.jsp

Statistics are correct at the time of publication

OCR (Oxford Cambridge and RSA Examinations)

1 Hills Road

Cambridge

CB1 2EU

OCR Information Bureau

(General Qualifications)

Telephone: 01223 553998

Facsimile: 01223 552627

Email: helpdesk@ocr.org.uk

www.ocr.org.uk

For staff training purposes and as part of our quality assurance programme your call may be recorded or monitored

Oxford Cambridge and RSA Examinations
is a Company Limited by Guarantee
Registered in England
Registered Office; 1 Hills Road, Cambridge, CB1 2EU
Registered Company Number: 3484466
OCR is an exempt Charity



OCR (Oxford Cambridge and RSA Examinations)
Head office
Telephone: 01223 552552
Facsimile: 01223 552553

© OCR 2006