

GCE

Edexcel GCE

Geography A (8214/9214)

This Examiners' Report relates to Mark
Scheme Publication code: UA 017946

Summer 2006

Examiners' Report

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Publications Code UA 017946

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This proved to be a very fair and accessible paper which also enabled good levels of discrimination to be made between candidates of different abilities. Most over the topics covered were familiar to candidates and the command words used were easily recognisable. A few topics seemed not to be very well known, suggesting that they may not have been covered by some candidates following the course.

Strengths

- Good focus on question demands
- Secure case study knowledge
- Accurate definition of most key terms

Weaknesses

- Some gaps in subject knowledge
- Failure to recognise patterns in data
- Question often repeated in the first line of the answer

Section A

Approximately 65% of candidates tackled question 1 and only 35% question 2.

Question1

This question was generally quite well answered. The main topics covered were fairly familiar and the questions accessible to a very wide range of abilities.

a.i. Most correctly identified a composite cone.

a.ii. Most answers were correct, either identifying a type of plate margin or naming a specific location.

a.iii. Many good answers scoring full marks, but some did not focus on shape and instead referred to the internal structure. As the question asked for a contrast it was expected that candidates would use comparative terms such as taller, wider, steeper etc.

a.iv. Explanations here were mainly sound with candidates appreciating the differences in the movement of the lava. The term "viscous" was often incorrectly used, even though the answer then referred to the correct rate of movement/cooling. A full marks it was expected that some appreciation of why the magma was viscous or not should be shown; references to temperature or silica content greatly helped.

b.i. Most were aware of the existence of convection currents, although not all were sure where they were! The source of heat was sometimes explained. Those who tried to link the movement of the currents with the movement of the plates seldom offered more than "the convection currents then move the plates above". It was rare to find references to frictional drag.

b.ii. Most candidates were able to offer a suitable piece of evidence. However, many failed to make a clear link between the evidence and the movement of the plates. For example, why the presence of Mesosaurus fossils on either side of the Atlantic supports the theory. Those choosing palaeomagnetism often found it difficult to give a coherent explanation whilst those referring to coal deposits needed to rule out general global climate change as the reason.

c. Questions such as this referring to specific types of plate margin have been asked before and destructive margins do offer plenty of scope. Nevertheless, some

chose the wrong type and wrote about constructive margins, generally gaining no credit, or collision margins, sometimes gained limited credit. Many good, annotated diagrams were seen. The key requirement here is to link the processes to the landforms e.g. subduction of the more dense plate forming an ocean trench.

In the extract below this was done successfully. Located evidence was used and full marks were scored.

The Nazca Plate moves east and the S.American Plate west, due to converging convection currents beneath. The more dense oceanic crust of the Nazca Plate subducts beneath the continental crust of the S.American forming the Peru-Chile Trench that is 8000m deep. The convergence of the plates causes compression of the crust and the uplift and bucking of the continent to form the Andes fold mountains. Magma from the melted edge of the Nazca Plate is forced upwards by compression and as it is low density erupting as volcanoes such as Cotopaxi.

Question 2

This was a much less popular question and was, in general terms, not answered quite so well. Candidates may have chosen question 1 as a preference due to the complete emphasis on weathering in this question with no parts on plate tectonics.

- a.i. Definitions were generally accurate, although “wearing away” was often mentioned, even alongside “in situ”.
 - a.ii. Most answers gained credit although some referred to size, often relatively, rather than shape.
 - a.iii. freeze-thaw was the most commonly used process and most were able to give a clear account of the process. To gain full marks it was expected that candidates would link the freezing-thawing to the breakdown of the rock. This was best done with reference to repeated cycles, gradually weakening the rock. Many left an impression that if it happened once, the rock would split.
- b. Answers to this question were very variable. Far too many missed the reference to chemical weathering in the title, despite it being in bold, and so discussed scree slopes. Others focussed too much on erosion by running water and the formation of caves and swallow holes. Those that did focus on chemical weathering tended to show a secure understanding of the process of carbonation, although this was not always linked effectively to the landforms.. The best answers make strong process-landform links and indicated their approximate scale and location. Many suggested that carbonation formed the initial joints in the rock, as in the example below, which scored 3/6.

Rainwater is weakly acidic because it takes in carbon dioxide from the air and reacts with calcium in limestone and dissolves it. This means when rain falls on limestone in the Yorkshire Dales it sits on top of the rock and it weathers deep cracks in the rock called grykes. In between the blocks of limestone not weathered stand up as clints between them.

- c. This question produced a wide range of responses. Some misinterpreted the question and wrote about the impacts of human activity on weathering. The majority had the right focus but made statements that were very vague and generalised. The best dealt with specific processes or products and made it very clear how humans were affected. This is illustrated by the difference between an answer stating that St. Paul’s Cathedral is weathered and so the building is badly

damaged, and one stating that it is by carbonation of limestone and that expensive repairs and renovations are required.

Section B

This section has produced some disappointing performance in recent years with much uncertainty existing over fluvial processes and their impact. Although there were some similar issues on this paper, most candidates were able to gather marks in each part and so scores overall were respectable. An almost equal number of candidates answered question 3 as answered question 4.

Question 3

a.i. Almost all candidates were able to identify the ocean store, although a number of other stores already shown in the figure were offered.

a.ii. Most candidates knew that this referred to underground stores, although some thought it meant "on the ground". Not all were clear about how/where exactly the water would be stored. There are lots of technical terms in this topic that should be known

a.iii. This was generally answered well, although some put several responses in each part, of which only the first could be credited.

a.iv. There was widespread understanding of evaporation and some valid references to transpiration. As an explanation was required, it was expected that heat should be included. Not all answers specified that water vapour is produced.

b.i. Most candidates gave full answers here, although some did not recognise the word "orographic" and discussed frontal or convectional mechanisms. To fully explain cloud formation, reference to condensation was expected, once the air is saturated/dew point is reached. As ever, there was some confusion as to whether air or water is rising.

b.ii. This was not well answered and appeared to be a gap in many candidates' understanding. Many simply repeated their answer to part i. whilst even the better responses seldom explained why the water droplets needed to grow before they could fall. A neglected corner of the specification in some centres, perhaps?

c. Many good answers were seen to this question with responses being much better at making explicit links between factors and flooding than when this has been asked before. The key is invariably rapid surface run-off. Located detail was usually provided, often in the form of rainfall data, dates and times. Some excellent accounts of the recent Boscastle flood were seen, such as the example below, perhaps based on the case study in the Edexcel A textbook?

Higher than average rain during July and early August meant that the water table was high and the soil almost saturated. When the storm hit on August 16th 2045, the ground was unable to infiltrate the additional input of water and so rapid surface run-off occurred, causing river levels to rise quickly, over 2 metres in an hour, and over flow their banks. 130mm fell in 6 hours. The village sits in the bottom of a very steep valley with heights dropping over 300m in about 6 km and so surface run-off is rapid under gravitational forces. Two rivers converge in the village. The Valency and Jordan, fed by its tributary the Paradise River, fed their combined flow into the centre of the village and the river could not cope and so overflowed it's banks.

As ever, some candidates missed the point and spent too much time and effort dealing with the impacts-not the focus of the question nor of the bullet point in the specification.

Question 4

a.i. Disappointingly few candidates answered this correctly. Many confused the equation with that for hydraulic radius.

a.ii. The overall pattern, with two peaks, was often not identified. More usually candidates undertook a "Cook's Tour" of the graph, stating the changes in discharge at various points over time.

a.iii. A number of candidates did not recognise that the question referred to "the" pattern of discharge i.e. the one shown in Figure 4. This meant that answers were either vague, "if there was steep relief.." or inappropriate "gentle relief..." Or even both. In 2. most neglected the straightforward link between the two rainfall inputs and the two discharge peaks.

b.i. This was generally answered quite well, although a disappointingly large number of candidates referred to erosion processes rather than transport. Many struggled to find a suitable phrase to describe suspension: carried along in the flow, carried in the body of the moving water are suitable possibilities.

b.ii. This was very well answered by the vast majority. Even if the term "attrition" was not used, credit was given for an outline of the process.

c. Braided channels are a potentially tricky topic for candidates, not least because most have not come across them at GCSE level. The question discriminated well. Almost all answers conveyed some description of their appearance, generally with a diagram. Many were able to make generalised references to deposition in the channel causing the flow to diverge. Some very good answers were also seen which conveyed secure understanding of the specific processes involved and the circumstances under which they occur, as in the example below;

In glacial meltwater streams there is often a high sediment load of coarse material from weathering and erosion by the glacier. In summer the discharge is high and the load large. In winter the discharge falls as the rate of glacial melting reduces and the river loses both competence and capacity. Deposition occurs within the channel causing the flow to diverge and a new channel to be eroded. An island of deposited sediment builds up in the channel and as flow slows when it reaches the island this leads to further deposition. The channel may subsequently rejoin the main flow and the island can become permanent and vegetated.

Section C

As in previous examinations, there is some evidence that coverage of Section C topics is partial or incomplete. There was also some limited evidence of candidates running out of time and not completing their final answer. At very least there were fewer who attempted both questions than in the other two sections! Question 5 was answered by about 55% and question 6 by only 45% of candidates.

Question 5

a.i. Most definitions referred to sand dunes, but some simply stated that it was an ecosystem and made no reference to plant succession.

a.ii. The pattern was very well described by the vast majority. A few candidates offered a "Cook's Tour" of change over time without noting the general pattern of increasing bare sand. A small number compared %bare sand to % sea buckthorn.

a.111. It was pleasing to see many excellent answers to this question, showing a good understanding of plant adaptations. Some only identified the challenges of the environment, rather than the adaptations that enable species to cope. A few missed the point and focused on how the plants themselves change the environmental conditions.

b.i. Most candidates produced accurate answers and referred to appropriate processes. There was evidence of some confusion between hydraulic action and wave pounding.

b.ii. Most candidates were aware of appropriate methods such as sea walls, groynes and rip rap. However, not all directly related this to decreasing rates of erosion. References to energy absorption, reflection and dissipation help. Weak answers often simply stated that putting some kind of barrier in front of a cliff would reduce erosion, but the barrier itself could be eroded at the same rate unless it is made of more resistant material or is designed to reduce energy.

c. This was a very straightforward and accessible question, but it was expected that answers be quite detailed. References to wave refraction around headlands and the presence of initial weaknesses in the rock were expected in good answers, as was recognition of sub-aerial processes in addition to marine processes. Although the majority did note the need to consider subsequent modification, it was often only in the context of "more and more erosion", as in the example below which scored 3/6:

Waves erode a headland and form a cave by processes such as hydraulic action and corrasion. Over time the cave gets bigger and eventually it goes right through the headland to form an arch. Eventually there is more erosion of the arch and so the roof collapses due to a lack of support leaving a stump which is an isolated rock on the end of the headland.

Question 6

a.i. This proved something of a challenge with relatively few candidates commenting on the unevenness or skewed nature of the distribution. As in similar, earlier questions, many took the "Cook's Tour" approach of stating the % pebbles in each size category.

a.ii. The vast majority correctly identified the correct site.

a.iii. Most offered appropriate ways, although some referred to size again.

a.iv. Most were able to identify valid factors, but disappointingly few were able to suggest a clear link to this particular site. A good example would be references to low wave energy without offering a reason why wave energy might be low at this site.

b. This was a question on a familiar topic which did discriminate effectively as many described the process without giving clear explanations for the directions of swash and backwash. It was also common to see no mention of sediment, only water.

c. This question exposed a significant gap in many candidates knowledge. Although most were familiar with on-shore bars, many did not know off-shore bars. This led to many answers based on longshore drift. This may be due to the lack of coverage

of the landform at GCSE level, something that centres may need to address as this landform is mentioned in the specification. Those that did have the knowledge were generally able to display reasonable levels of understanding as well. The key at the top end was to explain why deposition takes place in the off-shore zone, or how sediment is moved off-shore from the beach. The example below, which was awarded full marks, used the first idea very effectively.

Off-shore bars are ridges of beach material lying parallel to the coastline. They often have a lagoon of still water separating them. They form on gently sloping coastlines when waves are slowed by friction in shallow water before reaching the beach itself. They break off-shore and deposit sediment as they immediately lose energy after breaking. Once sediment starts to accumulate this produces even shallower water and causes more waves to break at the same point, adding sediment and further building up the bar.

This was very similar in style to previous papers. Centres have had plenty of exposure to the themes examined this year in preceding sessions - notably, questions about population density / distribution, environmental impacts of migration and residential land use patterns. There was a good mixture of the familiar (such as 2d, which appeared verbatim in 2003) and the less familiar (4a) - all allowing candidate skill, knowledge and understanding to be assessed in varied ways.

There was some evidence of more contemporary case studies being used in candidate answers, with greater numbers now discussing post-2004 movements from Eastern Europe into the UK, rather than the previously ubiquitous reports on immediate post-war Turkish movement to Germany. While the latter is still a perfectly sound study, there is evidence that those who have looked at more recent population movements have more to say about the political and legislative framework within which international migration takes places (i.e. the nature of the EU) - which is advantageous.

Section A

The distribution of life expectancy was described well by many. Those that could provide an overview ("the pattern is uneven") or used appropriate geographical language to convey a sense of significance along with the raw data usually scored full marks.

The explanation in (a) (iii) did require that candidates could do more than assert that diets or healthcare were better in some places than in others (although basic credit was given for such suggestions). For full marks, the underlying cause of variations in wealth and opportunity needed to be highlighted.

In part (b), quality and satisfactory answers were well-demarcated. Large numbers simply asserted that "no-one lives high up because it is too cold and wet and difficult to get to". For full marks, candidates needed to recognise the gradation that occurs - people are still present but in lower numbers due to reductions in length of growing season and in tourism opportunities. Some used the concept of carrying capacity to quickly gain full marks.

The remainder of Question 1 was competently handled by the majority. Most had accurate recall of the DTM and had plenty to say about falling birth rates. Weaker answers tended to concentrate simply on the choices that European women now make. Quality answers had more to say, perhaps taking a longer view of history (250 years) back to the decline of subsistence farming (the family as a unit of production).

Material on China is often surprisingly inaccurate, with many candidates seemingly unaware that birth rates had fallen significantly during the 1970s, prior to the introduction of the One Child Policy. There was also little acknowledgement that the Policy may not have been very strictly adhered to in many regions. However, such matters did not unduly prejudice candidates' answers and many scored full marks using China as their example.

Question 2

Performance in parts (a) and (b) was very similar to question 1. For full marks, the distributional pattern needed to provide some sort of overview or convey a clear sense of significance to the reader. The role of climate affecting population distribution needed to be presented as more than a binary “on/off” factor. Some candidates recognised that desert environments can still support nomadic tribes and even large cities such as Las Vegas and were thus able to move beyond the more simple deterministic clichés.

Part (c) was poorly handled, as was a similar question on the CDR in the January 2006 examination. While candidates often have excellent knowledge and understanding of real-world fertility trends, the majority struggle to make sense of mortality. Here, the problem was compounded by many apparently treating the word “rising” as a synonym for “high”.

Better answers pointed the finger at civil war (Sierra Leone or Rwanda) or highlighted rates of HIV infection (Lesotho). European trends were better explained. The link with an ageing population structure was grasped by many. Weaker answers suggested that a rise in smoking or crime waves might be to blame in countries like the UK.

Part (d) was well-executed by many candidates. The expectation was that quality answers would see several sets of factors and processes at work: out-migration of the rural young in search of work; mortality differences due to levels of health care; fertility differences linked with economic systems (rural subsistence vs. urban). The best answers had all of these and could name places too.

Section B

Question 3

Many candidates struggled with the definition in part (a) (i), not grasping that the concept refers to the actual area of surrounding land (rather than “the distance”) from which a settlement or service draws its custom. Part (iii) looked for understanding that progression upwards through the settlement hierarchy results not just in the addition of a wider range of functions but a great increase in actual numbers.

Part (b) differentiated between those that could apply the principles of bid-rent theory and those that could not.

Part (c) examined a very well-known corner of the Specification. Once again, quality answers were those that could qualify trends, offering more than a simple and highly generalised worldview. UK newspapers have been full of sensational reports of binge drinking in town centres in recent years. Candidates receiving full marks were very often those who saw that the nation is not actually full of ghost towns.

Part (d) was well-handled by many. Impressive sketch maps were on display and explanation was included (historical influences, such as 19th Century workers’ terraces were common to most good accounts). Weaker answers seemed to be more concerned with making the case study resemble Burgess’ model than with presenting some accurate detail about the location of varied types of housing. Full

marks were easily obtainable by contrasting a brown-field high-rise Newbuild site with a suburban low density estate - if accompanied by sound explanation (such as affordable housing issues).

Question 4

It was pleasing to see so many good responses to (a) (ii). There were some intelligent answers on urban history and planning, with frequent reference made to London's Royal Parks; some were also aware of the existence of allotments. Weaker answers tended to make vague assertions about levels of industrial demand for land, or simply stated, somewhat bizarrely, that big cities would have less space.

Part (b) was well answered, with the majority showing good knowledge of the Z-I-T, though the idea of a *changing* area was not always explicit in responses. Performance on part 4(c) was similar to 3(b): where candidates could apply bid-rent ideas and actually explain why land values are driven so high in the centre, full marks were usually obtained. In contrast, weaker answers tended to baldly state that there is a shortage of space there.

Part (d) was testing, as it required candidates to combine three elements in their responses - functions, patterns and temporal change. Of these, pattern tended to be the hardest for many to make comment on. Given the demands of the question, high-band marks were awarded to sound empirically-driven studies that could chart historical changes in function even if the "pattern" aspect was not always made fully explicit.

Section C

Question 5

5 (a)(iii) was a testing question, requiring more than a recognition that policies change from time to time - reasons needed to be offered as to why policies might change. Popular themes included a change of government or a need to win votes.

Part (a)(iv) challenged those who did not understand what "demographic" means in this context: it is a frequently-used adjective in Section C, and candidates should be reminded of its meaning. Good answers often, and quite rightly, linked "economic" and "demographic" together with an analysis of the UK's ageing population increasingly needing support / replacing. Weaker answers fell into the "push trap", writing about why people might leave other countries - while not recognising there is no guarantee of entry into the UK when they get here.

Part (b) (ii) was not always done well, as many did not recognise the term. Given that Section C has very little theoretical material in it compared with the rest of the paper, Centres would be well advised to really make sure their students can deal with gravity models, opportunities and obstacles as these will continue to be examined on a regular basis.

In part (c), some very competent answers were linked to effective examples e.g. Rwanda into Tanzania. Much use was made of Indonesia (from the resource). Brazil and Cairo featured as "shanty town" answers. As previous Examiner Reports have repeatedly emphasised, more is needed in this context than generalisations about pollution, sprawl ("animals lose their homes") and re-growth in abandoned areas.

The terminology from the AS Physical Unit really should be imported whenever the phrase “physical environment” is applied on this paper. Thus, examiners are standing by to amply reward references to run-off, succession and biodiversity (to name but a few).

Question 6

6(b) was the most challenging part of the question. As with 5 (a) (iii) it required candidates to flag up “the reasons behind the reason”. *Why* do governments act? What are they trying to achieve by moving people around? On the whole, good answers seemed to understand well the link between resource use and population distribution and the best answers used Indonesia or Brazil to support ideas; there was also interesting use of Stalin’s Russia and Hitler’s Germany. Some even understood the strategic / military importance of population dispersal.

Part (c)(i) examined an area of human geography that clearly requires a little empirical investigation: is it really “cheaper to live in the countryside” as so many suggest? Arguably, it is not really economic factors that primarily drive counterurbanisation, but rather aesthetic and lifestyle issues. Where economic matters do need to be taken into consideration, however, is in respect of actual employment opportunities.

Part (d) answers tended to fall into one of three categories. The least sophisticated approach was to recognise that migrants do “dirty jobs we don’t want to do” but to then argue that this could take jobs away from other people. Better answers added variety by mentioning remittances, briefly nodding towards the problem of racism in some societies or by acknowledging multicultural diversity. The best answers took these themes and actually supported them - through mention of the Brixton Riots (or Stephen Lawrence for that matter) or by developing their cultural geography ideas by making explicit reference to hybrid cultural forms (rock-and-roll music, for example).

On the whole candidates are using this aspect of the examination to good effect and to maximise their mark potential. Some very good studies were seen.

As in previous years it was noticeable that where students had used the advice given on GEOGA1s to their benefit - especially regarding adequate sample sizes for statistical analysis, the ensuing enquiry benefited. However, in some cases the A1 advice had been ignored - usually to the detriment of the ensuing enquiry. Several Centres had not included approved A1s with the candidates' work, one of these actually included their A1s and asked for them to be approved prior to moderating the enquiries!

The practice of carrying out fieldwork before submitting A1s seems to be prevalent, hence it is very difficult for candidates to change the focus of their enquiry after receipt of Approvers' comments.

Students seem to be more aware (or have been made aware) of the need for an adequate number of pairings in their sample size. It was good to note, also, more diverse statistical techniques coming in - usually in the correct context and usually tested for significance - which is not always the case with Spearman.

There seems to be a distinct advantage to students using hypothesis testing as their route to enquiry. Some centres/candidates are still using the: "*An investigation into ...*" or "*A study of ...*" techniques, which tends to be less productive as far as the candidate's analysis and interpretation was concerned. The availability of quantitative techniques would allow far greater analytical methods than the descriptive alternative seems to produce.

The same could be said for the physical over the human studies. In the latter questionnaires still seem popular, yet despite the amounts of data produced few students seem to want to quantify beyond the basic graphs. Group data collection seems less effective in the human studies - with often a surfeit of data. Candidates are inclined to include/graph all of it, with no hope of adequate analysis.

Most candidates refer to a theory (not always the right one) in their introduction and on their proposals, but don't always get back to it in their conclusions. Having spent a lot of time, and words, in setting out their theoretical base, it seems that referring to it as a comparison in the conclusion would tick a lot of Level 4 C&E boxes often being missed.

Again, despite A1 advice, candidates are not specifying their own individual input into the group process and it becomes difficult to credit IDP Level 4 for individuality, unless the Teacher/marker makes specific reference to it. Even though group data has obviously been collected, often at field study centres, teacher/markers are still maintaining that the topic was identified individually, which is clearly not the case.

More students are identifying their sampling strategy, or at least say they are, though do not always justify either the approach or the method of selection and so limit their assessment levels in DC.

It seems the parlous state of location maps is not improving. There were (too many) enquiries that lacked any real location map. The continuing use of maps downloaded from the Internet is also a cause for concern. Candidates are still starting from the "*Map of Britain to show...*" and working in, but often the scale and context are unsuitable - there seems a genuine need to make a point of flagging up mapwork as an area of concern. One centre had 12 sites down a stream

for analysis without any candidate showing a location map of where the sites were. Another Centre, with a more diverse sets of enquiries (coastal transects, urban land use and streamflow) failed in all cases to show a location beyond a dot on a UK map. In another case the sites of the river being studied was shown on a *road map*, again lifted from an online site.

In comparison to previous years there was probably less use of photographs - but very few integrated into the enquiry and probably less than 10% possessing any real annotation. There appears to be two areas here - the physical study - "*.. photo of me using a clinometer ..*", and the urban study - "*.. photo of the new shopping centre / new/old/big/small/poor/rich etc housing ..*"

The word limit caused less of a problem that last year and only one Centre still maintaining that the word count "*.. was within 10% allowance ..*"; a tolerance which has never existed on this specification. Some centres had ignored the word limit in the Centre marking criteria. In previous years this would have necessitated additional moderation of samples.

Centres are reminded that the guidelines are quite categoric in specifying a word limit of 2,500 words. Any work over this length renders itself liable to penalties. Students are required to provide an accurate word count and to certify this as correct. Some centres have exercised considerable latitude, or inconsistency, with regard to this ruling and have experienced significant mark changes at moderation.

Putting large amounts of data (e.g. collection methodology) into tables was not only bad practice but interrupted the flow of the enquiry. This practice tended to be the main reason for candidates going over the word limit. Equally disturbing was the practice adopted by a couple of Centres where every student (and in one case the staff) wrote "*2500*", "*about 2500*", etc. In one case 2 students had certified 2500 - the resulting count was >3000 in one case and >4000 in the other!

There have been many transcription and addition errors either on the Candidate Mark Sheet or on the transfer to the OPTEMS this series.

Some centres had obviously collected group data but it could be quite difficult to differentiate where each candidate's individuality came in. Graphs, tables etc were often very similar (i.e. identical!) which tended to have an effect on the moderated IDP assessment.

On the matter of graphs, it seems candidates and centres need to be made aware of the key word "*appropriate*" in the marking criteria. Too many seem to adopt the attitude of 'push a different button in Excel' every time a graph is required. There is quite a difference between using a variety of techniques and using the right one!

One other area that could be improved is the A & I. A lot of candidates described their data again, having graphed it, without building in a reasoning or interpretation of what it meant in relation to their enquiry. Similarly, Conclusions were frequently re-iterations of described data, or included in the Analysis. It is difficult to see sometimes where centre staff are getting the credit from, without crediting the same work twice.

Summary

Strengths

- Very helpful comments by some centres on the A2 explaining their mark allocation.
- Improved use of IT in presentation with less obvious use merely of default settings for graphs etc.
- Some good examples of maps drawn for a particular purpose.

Weaknesses

- Absence of key administrative requirements such as A1s, A2s and mark sheets
- Conclusions not supported by evidence from data.
- Over crediting of data presentation and of analysis - particularly when statistical techniques are employed.

This was the first occasion on which the paper was marked online.

Overall the paper was accessible to all students. Few failed to attempt any question and a very small number answered question 2 on a physical geography topic. Once again marks were lost because candidates failed to respond to the precise question set. There are still many students who answer the questions set on earlier exam papers.

Question 1

ai Questions about sampling are a regular feature on this paper and answers continue to reflect the lack of understanding by candidates. Most answers recognised the numerical relationship between land use area and number of sampling points. Many students could not explain why this was relevant. Very few recognised 'stratified sampling' as part of their explanation.

aii There was a general understanding of change to maintain 'representativeness' although the lack of precision in these answers caused some lost marks.

aiii This was fairly well answered. The focus here was on difficulties in using the equipment. Many students listed factors that would have affected the outcome of the results rather than the difficulties in using the equipment. References to stones, and in particular mole holes, which did not affect the operation of the equipment, were therefore irrelevant. Answers were often long and repetitive.

bi There were few problems in calculating mean, infiltration and inter-quartile range. Candidates should remember to set out their working clearly in order to gain some credit even when there is an error in the final figure.

bii Answers to this statistical question reflected the lack of real understanding of inter-quartile range. There were many references to the *two* extreme values and a frequent omission was the focus on the central half of the data. The answers exposed limited knowledge of the purpose of the inter-quartile range.

biii This was fairly well answered. Most candidates achieved the level 2 band but fewer made the explicit comparison required for full marks.

ci and ii These practical sections were well answered but still showed some carelessness which could be avoided if students ensure that the proportions do add up to 100%.

ciii This question was poorly interpreted. There appears to be considerable confusion over differences between strength and reliability. Most students were able to recognise if the correlations were significant or not but most failed to comment on whether the correlations were moderate, weak or strongly positive. An alarming number of students thought that a non-significant correlation should either mean no correlation or a negative one. Many students assumed that a non-significant correlation meant that the results were unreliable as a result of student error in collecting the data.

civ This question was a good differentiator of ability. Many candidates were unable to relate this question to the investigation. The focus of the question was the

difference between the relationships for infiltration rates of the two land uses. The most effective answers commented on the stronger and more reliable relationship on grassland and discussed reasons for the different relationship in woodland. Many candidates referred only to sites A and B. There was also some implausible reasoning such as origins of sand from trucks going to the quarry, sand blowing out from the quarry and flooding from the river. A significant number of candidates confused the data and thought that an infiltration rate of 13mm / minute was a *slow* rate.

There were very many rambling answers which became contradictory, particularly in terms of size of sand particles, ability to hold water and rate of infiltration, and the subsequent contrasts with increased clay content.

di and ii A wide range of factors affecting infiltration rate were accepted and there were some good logical answers here. However too many candidates ignored the restriction placed in the question, particularly regarding land use. Many candidates lost further marks by discussing vegetation in dii.

Question 2

ai Most candidates are able to state a clear aim for their investigation. Only the weakest candidates fail to get full marks. Those who state 'a study of' or 'to look at' did not offer an aim which was suitably clear. Students regularly write a paragraph when a well-constructed sentence would suffice.

a ii There has been an improvement in the quality of maps drawn. Candidates should note the precise *purpose* of any map which may be required and select an appropriate scale to suit that purpose.

a iii Many candidates missed the slant of this question which was factors affecting *choice* of data collection sites. There were many answers discussing limitations of sites or descriptions of their distribution. Although the choice of sites is often made by staff, the logic of that choice should be shared with students.

b Almost all students were able to explain how they represented different types of data.

ci Most students were well-prepared for this question and were able to summarise their conclusions. However relatively few offered the evaluative comment which was required for full marks.

c ii There were disappointing responses to this question. Many students failed to understand the need for a different type of data and most referred to collecting the same data but at different times of year /week / day.

The paper proved to be eminently fair and allowed candidates to demonstrate their knowledge and understanding. The mean mark was slightly lower than that of last June, but very much in line with the previous years' results. There was a huge range in the quality of answers, from those that were literate, well informed and elegant in style to those, typical on meteorology or soils, which contained barely anything of relevance or worthy of credit.

It was disappointing that many candidates failed to explicitly respond the important trigger words in the question. This was particularly true of "varying", which was often ignored and seldom considered in both spatial and temporal terms. This had deliberately been included to encourage candidates to meet the criteria of the higher levels in the mark scheme.

What was pleasing, however, was a noticeable improvement in the structure of answers. Most were able to introduce and conclude their responses, with a good proportion able to offer a series of linked paragraphs providing a coherent argument. The best made pertinent points to address the question and qualified any generalisations made, often illustrated with evidence from located examples, although not always with supporting data.

Strengths:

- Almost all answers on topic
- Answers well structured with clear introduction and conclusion
- Little evidence of poor time management
- Some secure case study knowledge

Weaknesses:

- Linkages stated not explained
- Lack of data as evidence
- Insecure grasp of the operation of systems
- Lack of focus on key words such as "varying"
- Uncertain grasp of important terminology

Section A

The increased popularity of this section seen in recent papers was continued and almost as many candidates now answer questions from this section as from Section C.

Q1a Most candidates showed some awareness of contrasting air; warm & cold, as a condition for depressions, although weaker answers confused fronts with air masses, so that it was often "a warm front meeting a cold front". Uplift was often referred to and low pressure was appreciated, but the link between the two was often tenuous or absent. Only a few candidates knew of upper air conditions mainly on the poleward limb of the Rossby wave, occasionally with divergence taking place aloft. Some answers became sidetracked onto the movement and development of depressions, right through to senility and decay rather than concentrating on initial formation. Others focussed on weather conditions that resulted.

Q1b Disappointingly there were fewer very good answers than expected. Relatively few could give detailed and accurate descriptions of the passage of a depression. There were many inaccuracies, from incorrect temperature changes, to types of

rain and clouds. Even the better answers gave generalised descriptions of rain, a few clouds, temperature changes, pressure and general wind. There was often a lack of specific evidence to support these descriptions. As far as explanations were concerned, most could relate cloud/rain to uplift at fronts but few gave reasons for changes in temperature, wind speed or direction.

Better answers could account for seasonal differences with shifts in the jet stream and regional variations with rainfall and orographic effects. A small number were aware of ana and kata fronts and variations due to depths of pressure. Some useful references were seen to variations between summer and winter depressions, occluded and non-occluded systems. All of these approaches enabled candidates to provide a clear focus on "varying" weather conditions, as demanded by the question.

The weakest responses came from those sidetracked into the "consequences" of depressions. Almost all used the 1987 gale, but spent far too long on the deaths and destruction rather than the weather and its causes. Equally it was disappointing that many moderate candidates were muddled with the fronts i.e. reading their cross sectional diagram "from left to right" with no appreciation of the movement of the system.

Q2a Most knew that an air mass is "a body of air" but many missed the "uniform" nature of the characteristics. Far too many spent too long, sometimes as much as 1 ½ sides, explaining the factors rather than just identifying them. Most appreciated that the source region was a relevant factor; rather fewer the track. There was much evidence that candidates do not have a secure grasp of the term "factors" with many seeing this as synonymous to characteristics.

Q2b Overall, this question was answered soundly. Some began the essay with an annotated map and then went on to describe some or all of the air masses. At the top end of the range there were accurate and detailed descriptions of the main 5 air masses. The main discriminator of the better answers was the frequency and quality of references to stability. This enable cause-effect links to be explained rather than just stated. For example, explaining why air masses that pass over an ocean track experience an increase in humidity. Good answers that focused on the key word in the question "varying" often did so with reference to not only the different air masses themselves, but also their seasonal frequencies and regional variations.

At the bottom end, there was little knowledge and data was merely lifted from the resource. There was often a lack of numerical data that would have been useful to quantify terms like warm, cool, mild when used with different seasons. Some were very confused between the origins of tropical and polar air masses, with "continental" often being seen as tropical. The modification of air masses during their passage was often not appreciated and this often led to some sweeping overstatements about the likely weather conditions.

Some answers moved their response onto pressure systems, which was perfectly acceptable as long as the linkage with air masses was clearly established and explained.

Section B

This remains the most popular section on the paper and question 4 was the most commonly answered on the whole paper. Relatively few chose to tackle question 3.

Q3a This was often done reasonably well. Virtually all knew permafrost as frozen ground and many knew it was perennial. The majority could distinguish the 3 types and frequently backed this up with a diagram. A few saw the difference as being in location (linked to mean temperature) rather than character. Weaker answers tended to focus on depth whereas the best were aware of the relationship between permafrost and unfrozen ground. Not all used the term talik, although there was no requirement to do so.

Q3b Whilst nearly all candidates were aware of the periglacial environment and could name some landforms, few could really describe them, although they attempted some form of process explanation. The focus of the essay - variety and location - was rarely directly addressed, except at the top end, which recognised the variety of processes from weathering, to mass movements, cryoturbation to wind and therefore the variety of locations. Mostly it was a catalogue of landforms, frequently limited to pingos and patterned ground. Rarely were ice wedge polygons seen, and when they were they were often rather muddled. Solifluction terraces and sometimes lobes appeared, as did scree and symmetrical landscapes.

The best answers used a variety of different landforms that illustrated the different processes and were able to describe the locations within periglacial areas and between differing geographical areas, including present and past. A good example of this was the use of different types of patterned ground, from polygons, to garlands, to stripes, being effectively related to their location on slopes of different angles. Sometimes this was explicitly stated as being evidence of varying location, whilst sometimes it was left to the examiner to determine quite what point was being made about these landforms and how it related to the question. Another opportunity, only taken by some candidates, was to consider the different types of location in which open and closed system pingos are found.

Q4a Most had a sound appreciation what the glacial system was and used some examples of inputs and outputs, though rarely energy. Although the components were stated, there was seldom any evidence of the linkage between them. The idea of a dynamic system was quite well understood at the top end although many saw it rather simplistically as change. There was, as in Q2a, a lack of secure understanding of what factors are/do and so there was seldom a very secure understanding of a dynamic response to changes in factors.

Q4b There were many competent essays seen but rarely was there a full understanding. The top candidates went straight to the factors with explicit details of the mechanisms involved and clear differentiation between movements of ice as opposed to the relative position of the snout. There was even some good use of fieldwork, with named glaciers and rates. They also detailed spatial and temporal variations both within and between glaciers.

The majority used temperate/polar differences as a peg on which to hang their ideas. A disappointingly large number failed to recognise that temperate glaciers move by internal mechanisms as well as basal. Many also showed misunderstanding of the source of basal meltwater with pressure melting point often being insecurely

grasped. Good answers recognised that melt water may reach the base from surface melting and the passage of water through crevasses as well as coming from basal melting under pressure. Candidates should be aware that the temperature change due to pressure at the base of even very thick ice cover is minute.

The weaker responses came from those with little knowledge of how and why ice moves, although global warming was a major factor in a great many essays. Those addressing the question almost exclusively via the budget often ended up referring to movements upslope during periods of retreat. There was a tendency in many weak essays for simplistic, unexplained and unsupported statements to be made about gravity and gradient. A few became sidetracked onto glacial processes and even landforms.

Section C

Answers in this section tended to be disappointingly vague and generalised. Candidates often seemed to forget that they have some useful case study material covered in support of one specification bullet point that might be able to also be used as evidence in another.

Q5a A lot of accurate definitions were seen and many candidates had clearly tried to learn succinct and clear statements, although photosynthesis did not always feature. Some weaker answers suggested that gross primary productivity was from all plants in an ecosystem whilst net was from a single plant. Others did not specify that it was plants that are the producers and included references to animals as well. There was some uncertainty about respiration, and this led to additional references being made to living, breathing, moving and even excreting.

Q5b There were some good essays with clear understanding and knowledge of many factors; climate was obviously dominant. Detailed use of some biomes was made with accurate data on NPP and climate, in all its aspects, and clear links to photosynthesis and rates of growth. Other factors only really appeared in the better answers although "the soil in the Tropical Rainforest is very fertile" was still a widely held view. There was occasional confusion between productivity and nutrients, seen with the Gersmehl's diagrams. The role of human activity was acknowledged by many but this often became a rather detached part of the question seen as an opportunity to ramble at length about deforestation. It was disappointing that even in better answers few provided evidence of decreasing rates of productivity in the locations identified. Even rarer were answers that recognised that human activity may lead to increased productivity, perpetuating the view held by many that human activity always has negative impacts on the physical environment.

There were, however, many rather moderate answers that failed to get to grips with the question at all. There was often a vague and generalised approach based on differences in biomass. These were usually described without being explained, and then unrelated to productivity. This is another example of candidates leaving the examiner to unravel their answers and to recognise the relationship between the content and the question.

Candidates need to appreciate that their case studies of succession may provide excellent supporting evidence for questions about topics such as productivity. Many refer to burning of heather moorland in succession questions, but few saw the opportunity to use it here, potentially to very good effect. The question refers

to “variations” in productivity and although most limited their answers to spatial variations, usually at a global scale, heather burning is a good example of temporal variation.

Q6a Although this appeared to be a straightforward question, candidates found it difficult to be sufficiently precise and accurate. Weak use of language meant that the idea of a vertical section was often implied rather than explicitly stated, or shown with a diagram. Layers were often referred to rather than horizons in weaker answers. Most tried to give general labels to horizons rather than define them as having distinct physical and chemical characteristics.

Q6b Although this was quite a popular essay, there was a definite lack of knowledge of specific soils and their profiles. Most candidates knew what the factors were, but then wrote in the most general terms about their effects on soil.

The linkages between factors- soil forming processes-named profiles was only achieved at the top end, by those who knew their podsoles, latosols, rendzinas and gleys etc and could detail their profiles. In these better answers there was also a full and appropriate consideration of the relative importance of the factors; few were led astray by the view espoused in the question. Use of the zonal concept often helped provide a framework for the answer and a clear steer towards suitable examples. This can be a useful approach in questions such as this; candidates should not wait to be asked about the concept but look to use it in structuring their answer. However there were good uses of fieldwork and evidence that some pupils had studied a catena in the field or actually seen a rendzina in Dorset.

More moderate answers discussed the role of vegetation & climate, though not always exploring the links fully and often seeing the role of climate as one controlling vegetation only, rather than also through translocation processes. Many were unable to draw a soil profile or to make any direct links to one; answers instead were vague and generalised, often stopping at processes. Those that tried often could say little beyond the soil being more/less fertile or deep/shallow.

As this specification enters middle age this unit is proving to be one of the most interesting to teach and centres show a great deal more confidence about the content than once was the case. There were some very good scripts produced and not just from a few highly selective (in every sense) centres. At the highest level students show a sophisticated appreciation of the issues facing the modern world and even at Level 3 the basic clichés are reasonably well remembered. Section B has proved to be even less popular this year than in previous outings and produced fewer high quality answers than the others. Questions 1 and 6 were the most popular on the paper and produced the best responses.

Section A

Question 1

a) What are the main characteristics of hi-tech (high technology) industry?

There were many good answers to this question but there were also responses that failed to identify anything very specific about this type of industry in that truisms were offered as in;

'skilled labour is very important as is access to good routeways and ports..'

Higher level responses recognised that hi-tech industry was frequently footloose and able to select sites that provided the right quality of labour but also the employment and social conditions that were frequently demanded by both their executives and highly paid researchers. The commonest confusion was with quaternary industry that some took to be a synonym rather than a closely related sector.

b) Describe and explain the locational requirements of different types of manufacturing industry.

There were a number of candidates who wanted to turn this title into 'What can you recollect about classical location theory?' Although this could, in the right hands, have been an effective approach it rarely turned out that way;

'the material index suggests that industries such as paper will locate close to the raw material but industries such as brewing will locate close to the market because water, the main ingredient of beer, is a ubiquitous material'

Needless to say all the isodopanes in the world couldn't help if the word 'type' was overlooked. And very many made this mistake translating the title into 'What things matter in the location of industry?' In these, very common, accounts the dominant theme was the search for cheap labour overseas and case studies were offered to illustrate the cliché that industry had moved in pursuit of these savings;

'James Dyson, a satisficer, eventually moved his local factory in Malmesbury to Malaysia so that he could save money on production because wage rates in Malaysia were one sixth of the UK rates'

More sophisticated students managed to recognise that this general truth was not true of industries where labour costs were/are a trivial fraction of total costs. Even

at this, more complex, level types was rarely addressed directly and only at the top of level four and at level five was it explicit.

'some industries are more concerned with the skills available than the costs. This is especially true in hi-tech industries such as Micron where government aid, the importance of local networks and the skill level of the labour force are more significant than its cost. Thus its new plant was opened in Utah, one of many US sites investigated. At no stage was an overseas production considered. By contrast types of industry with low levels of mechanisation, such as textiles, are much more dependent on cheap labour to make them competitive...'

There were some very good essays at this top end of the entry.

Question 2

a) What are the main characteristics of the global economy?

The global economy; an object, however abstract, was frequently replaced by 'globalisation', a process. Very often this was shamelessly explicit;

'the global economy has been increasingly globalised in recent years. Globalisation is.....'

Whilst accepting that much written subsequently was tangentially legitimate it is sadly true that many missed the obvious because of their breezy indifference to the words use in the question. The following was an exception;

' the global economy has grown hugely in recent years. Global output has risen as has global trade. By almost all measures the interdependence of nations states and the flows of goods and money between them has increased'

b) Describe and explain the growth of the global economy in recent years.

Despite the heavy clue 'growth' rarely being translated into the (a) responses students did seem aware that 'things' had changed quite significantly in recent years. Of course the right answer to this question demands some knowledge of the recent history of the onward march of neo-liberal economics and the complex inter-relationship between the global institutions such as the WTO, the IMF and the World Bank and the rise of TNCs and NICs. Lost in this world of acronyms the simple version at Level 3 went something like this;

' TNCs have sought cheap labour and as a result they have established factories all over the world. They have also encouraged local markets and offered western goods for sale. This has been the most important aspect of the global economy'

These descriptions rarely identified why TNCs had behaved in such a fashion nor explained why they hadn't done so previously. A few better candidates got onto the profits crisis even if they found the expression of that idea quite difficult.

' TNCs had to look overseas for new markets and cheap labour because people in western countries had stopped buying goods because they were saturated'

At the top there were some very impressive responses that recognised that the 'global' aspects of the world economy has cast the national boundaries in a new light. A level 5 response offered this view;

'Within wealthy countries such as the USA the growth of an 'underclass' has been a significant aspect of the 'new' global economy. With 1 in 10 Americans on food aid and jobs having disappeared by their millions from traditional industries such as textiles and clothing globalisation is less to do with the power of countries but the power of global corporations'.

Section B

Question 3

a) What is meant by the term rural resource base?

The wording of 5.2 3 in the specification is 'the changing resource base of the rural environment, especially in MEDCs' It seems quite legitimate to ask students what the rural resource base might be. However, this proved to be another belated example of how candidates need to be carefully prepared because most took one look at this, one look at the resource and wrote something like;

'rural areas have got a large footprint on them from urban areas. The use of food and wood is important and the bigger cities get the more these resources are used'

The stimulus material here was intended to be a steer for (b) rather than (a) as was evident elsewhere on this paper and in many previous questions. Very few candidates had the strength of will to look beyond the resource and offer;

'rural resources have frequently been the natural resources found in non-urban areas such as fertile soils and minerals such as coal or iron ore. The term might also include the resource of open countryside and leisure facilities that act as 'lungs' for cramped and crowded cities.

This response is a scant 47 words, but was worth 5/5. Very many poorer responses were 4 or 5 times as wordy.

b) Critically examine the view that the impact of cities on rural environments is largely negative.

It doesn't seem unreasonable to suggest that the resource offered is quite useful in this part of the question. However the standard level 3 responses largely ignored its implications and settled down into a litany of how urban growth ate up the countryside;

'cities have grown into surrounding rural areas destroying habitat and causing problems for wild life. The building of houses and the growth of cars has led to more and more pollution that ahs also harmed habitats and wild life'

This tale of woe usually led into a brief discussion of global warming and/or acid rain which further exacerbated the damage. Whilst few of us would argue that there is an element of truth in this, it paints cities as Beelzebub and the countryside as the Archangel Gabriel in some sort of millenarian struggle for

supremacy. A few level 4 and level 5 candidates saw beyond this to the complexity of the issues involved;

'the incomers who settle in rural areas can sometimes save local institutions like the cricket club and their money might keep the local pub or shop alive. This has happened in the Yorkshire Dales where second homes and holiday cottages have been important in the maintenance of local facilities and the incomers have often been active in the preservation of the landscape'

Critical examination was rarely found and it remains important that students are instructed that the command words matter. Even some of the very weak answers would have been helped by being alive to the reflective instruction in the question 'Is this right or not?'

Question 4

a) What is meant by the term agricultural system?

Once again the term 'agricultural system' is perfectly familiar on this spec. What is more the nature of a 'system' is not, or should not be, an exotic imported at the last moment simply to confuse candidates. But that is how it appeared to be to many as in;

'A system is a method of production such as an arable system, a pastoral system. Some of systems are subsistence, some are commercial. Many commercial systems are found in MEDCs whilst subsistence agriculture is common in LEDCs'

A minority understood the word and managed a succinct response as in;

'Agricultural systems have inputs in the form of labour, capital and land; processes such as sowing and harvesting and outputs such as edible crops like wheat or meat as well as textiles such as cotton. The more inputs per unit area the more intensive the system is said to be. Intensive agriculture has high inputs and high output per unit area, such as battery chickens.'

This 66 word response was worth 5/5.

b) Examine the social, economic and political factors responsible for the decline of subsistence agriculture.

This is an accessible title just so long as you have a clear idea what subsistence agriculture actually is. Astonishingly quite a number of students equated 'subsistence' with 'small family' so like a ski jumper starting to flap his arms around helplessly when he sensed that it would end in disaster one knew that it would all end in tears even if it was quite gripping and quite good to watch;

'the BSE crisis has made it harder and harder to earn a living whereas large farms in East Anglia have survived because they are part of a corporation. In Wales hill-farmers have received fewer subsidies and foreign imports have undercut their market. Unless they diversify into other activities their future is bleak'

Those who recognised that subsistence farmers were largely concerned with the production of food for their own consumption often answered the question in way

that suggested that opportunities were much more significant than constraints in the decisions that were made. Thus;

'the opportunities of bright lights in cities and better jobs available on commercial farms have attracted subsistent farmers of the land'

This parody of the social and political relationships that are operative in the countryside of, for example, modern India, was a typical level 3 offering. At level 4 and 5 a hint of the real world crept in;

' the opportunity for profit has led larger land owners to adopt techniques that have increased profit but driven poorer neighbours into debt forcing them to sell land that makes the rural poor dispossessed and obliged to seek their fortunes in the city'

Some could also add that;

'the green revolution has frequently increased rural differences with richer farmers able to buy into profitable HYVs and the poor forced into debt as they tried to keep up'

Only the very best saw that some attention to social, economic and political would be useful and thus attended to the politics of global food production;

'Most LEDC governments have been encouraged to promote export orientated crop production as part of their SAPs. Thus small subsistence farmers have been excluded and marginalised as governments have supported large scale, foreign enterprises such as ranching in the Amazon rainforest which can earn foreign currency whatever the damage done to the environment'

Section C

Question 5

a) Outline the different types of regional policy.

Weaker answers tended to assume that it was enough to trot out well known phrases and , more or less, leave it at that hence;

'There are two types of regional policy. The first is top down policies which operate from the centre towards the regions and are frequently quite unspecific although often expensive. The second type is bottom up policies which work from the local to the regional. These are usually more successful because local people are involved and thus have an interest in their success. (62 words)

Contrast this with a similar but more focused response from the same centre;

'Top-down policies, such as the Carajas project, are funded by central government and involve a mixture of grants and subsidies to induce inward investment, sometimes by government itself as in the move of the DVLA to Swansea. Other bottom-up projects rely on local support and NGOs to promote improvement such as well building in Gunjur in the Gambia. (58 words)

The first received 3/5, the second 5/5.

b) Examine the view that regional policies are always a waste of government money.

This title is fairly clear and if we asked 'Examine the view that Chelsea have bought their way to success' we would get much more critical discussion, at least from the football fans. But too often candidates were reluctant to engage with this, preferring the option whereby they offered some evidence but didn't offer a view;

'The Casa spent large amounts of money in southern Italy on a number of projects. These were called 'cathedrals in the desert' because they were very large projects that cost a great deal of money'

Insofar as any examination was undertaken it tended to be assertive rather than analytical;

'regional policies have rarely been successful. Despite all the money sent in southern Italy the region was no better off in 1990 than it was in 1970'

A few students managed to qualify this

'Southern Italy remains poor relative to northern Italy and although the gap has scarcely closed over 50 years it should be remembered that northern Italy has become one of the richest regions of Europe and southern Italy is no longer poor if compared with parts of Poland or Hungary'

and the very best could add;

'some regional policies have been successful as with the TVA and even those that have been criticised as a waste of government money are hard to evaluate because it is impossible to know what would have happened if these policies had not been in place'

Very often it wasn't the quality of the evidence that made the difference but the degree to which candidates could focus on the question asked.

Question 6

a) Outline the concept of sustainable development

If the Brundtland definition was recalled then it was a very straightforward route to five marks. The definition plus a little extension by way of illustration would suffice for 5/5. Unfortunately sustainable development has clearly not come across as a coherent concept to many;

'Sustainable development is when the consumption today will last for a long time allowing future people to consume as much as we do'

or,

'if we are careful about what we consume then other people can consume as much if we can make it last'

- b) Critically examine the view that all countries can become as wealthy as rich MEDCs such as the USA.

This was a very popular question but answers were uneven. The Pavlovian response was to latch onto the Rostow stimulus material and spend a page and a half traling through the stages with no commentary whatsoever. These essays began as follows;

'Rostow, an American geographer had a theory with five stages. In the first stage countries are very poor and have no science...'

A page or two later we get to Stage 5;

'In the age of high mass consumption people have all that they need and live a life of luxury with cars and ipods'

At level 3 this partial history is countered with a view that it might not always be possible because of

- a) Corruption
- b) Lack of resources

Level 4 answers often introduced the NICs as evidence that, despite the woeful words of Gunder Frank, success was possible. There were also good answers that recognised an alternative view of the world by which the rich become richer at the expense of the poor. Just occasionally these answers set of on a polemic that left the title some way behind;

' the policies needed now are direct action against the forces of globalisation which will, if left to themselves, consign the poor of the world in whatever country to a life of misery'

Some of the very best answers on the paper came in this question with a number of 20/20m responses. This was a memorable conclusion;

'It would seem improbable that the whole of humanity could enjoy a lifestyle with two cars, a swimming pool in the back garden and enough leisure time to take long holidays abroad. After all some of this lifestyle must be a result of the very many sweatshops around the world and if we are all wealthy who exactly will be working for next to nothing?'

This was a very successful paper. It stretched the marks, allowed candidates to show off their abilities. There were scripts in the 70s/75 and a few under 10. It was clear to the marking team that candidates got what they deserved in terms of what they understood of the questions and what knowledge they could apply. There was plenty of evidence that candidates were working throughout but very little evidence of unfinished answers. Once again time management problems were often self-inflicted by weaker students who took too long copying out irrelevant bits of the resource booklet rather than answering the question set.

Section A

Q1a) With reference to Item (a, b and c), describe the varied physical geography of the Mekong

Most candidates managed to achieve at least level 2 here with description of a fair range of variables. At the bottom end the phrase physical geography was taken to mean geomorphology and any climate or pedological material was simply omitted. The most common method of approach was the logical one of dealing with each stage from upper to lower with 3-4 variables - usually altitude, topography, rainfall and natural vegetation. The latter was rather often confused with the agriculture, which wasted time but didn't cost marks. For most candidates the expression of explicit variety was the exception rather than the rule, perhaps including an occasional 'rainfall is higher here' when moving to stage 2. They tended to lose focus by the time they were reaching stage 3 with far less variety evident and often 1 or 2 less variables as well. This could have been partially as a realisation that time was getting on as some gave fairly lengthy introductions that added little to the answer. So many would begin

'The Mekong basin is about four times the size of the UK at 800.000 km² and in this region there are six countries that are affected by the river, . It rises in Tibet and then flows...'

Some stronger candidates were able to 'read' the information intelligently as in;

'The photograph suggests that at altitude some of the precipitation falls as snow and the low figures (600mm per annum) may well be in the gorges in the rain shadow. Higher average rainfalls are found further down the river where the range of values is less, 2000 -2500 mm per annum, typical tropical values'

The highly variable discharge of the river probably reflects snow melt in Tibet and Yunnan in spring as well as the seasonality of the tropical rainfall the lowland regions.

This type of 'extension' from the text if wedded to a comprehensive survey that was explicit about 'variation' ensured full marks on this section.

1b) With reference to Item 2 (a, b and c) examine why the economic and social issues facing Cambodia might be difficult to manage successfully.

Most candidates managed to identify a reasonable range of variables, but the idea of management in any sense tended to get lost for a significant proportion thus the weakest candidates transmogrified the title into

' Describe the social, economic and political problems facing Cambodia'.

Some did point the way by linking, most commonly, the rapid growth in population with the shortcomings of the present food supply or the difficulty of controlling population growth through education about birth control while only 69.4% of the population was illiterate. There tended to be 2 ways in which candidates subsequently wandered from the task in hand. Some focussed too much on the past, describing the problems in detail -sometimes with added inferences about Pol Pot etc, but then failed to give any reason why this might affect the future.

' ...the murderous regime of Pol Pot and its colonial history have made Cambodia the country that it is today'

What tended to happen was that they used this sort of information to explain only why the present was as bad as it is. This tendency, to explain why the social/economic issues were so profound, was the other common fault. Use of some of the data was extremely variable with the weakest students simply omitting any use of the data offered on Item 2 (a). Thus the typical answer at mid level 2 offered a list of problems some of which were linked as in

' the rapid growth of the population might increase dependency from its already high 37.4%,.....'

But at this level statements about management were simple assertions;

'...this will be very difficult to manage'

Many candidates were also drawn to the goings on upstream, especially the Chinese building more dams, but again in the context of describing merely how it caused problems for the Tonle Sap, Mekong delta etc. rather than in giving any indication that it might make management difficult. In some ways this seemed to be the least successful part of Q for candidates and we saw relatively few 12/12 responses

1c) Using all of the resources explain why dependency upon the Mekong river varies from country to country.

A significant small minority did not understand what the concept of dependency was and that if it wasn't for producing HEP, which they all tended to see as the major use of the river, then it wasn't dependent on it. The 'right' answer here, which would elevate candidates into level three just so long as they offered a bit of evidence to go with it went as follows;

' Those countries with a very small fraction of their population living in the basin are likely to be much less dependent upon the river than those dominated by the drainage basin. Thus only 2% of Myanmar's population live in the basin whilst 94% of Laotians do. The other controlling factor is likely to be the level of development

and the relatively richer countries or regions such as Thailand (\$ 7,010 per capita GDP) and Yunnan province will have a more diverse economy with employment away from subsistence agriculture, perhaps in tourism or manufacturing industry, and thus have much less dependence on the natural resources of the basin. It might be added that the physical geography of the river with 'offer' different uses to different countries. HEP is available in the upper course with its narrow gorges whilst fertile soils and fish stocks are more important in the lower course, such as in Cambodia'.

This, succinct 150 word response is a good example of a higher level answer. Short and to the point.

Happily many candidates did realise that the basin area and country area were important. More than one candidate actually worked out the numbers of people in each country living in the basin based on the % figures given in Item 2a). Thus they was able to show that Thailand, with 23.6 million in the basin had many more people there than the down stream neighbours - Laos (5.4 million) and Cambodia (10.5 million) Overall, therefore, there was probably an even greater dependence in Thailand in terms of raw numbers! However such excursions were rare and the norm was to make the link between percentage of the population in the basin and dependency but then to leave it half way with

'Myanmar only has 2% in the basin so isn't very dependent'.

This was typical of those who tried to answer the question regionally and who thus made it difficult to isolate actual reasons. Others tended, less successfully to consider the amount of country and at times ignored proportion.

'Thailand is more dependent than Cambodia as it has a bigger area of the basin in the country'.

Degree of development was often seen as a reason but they had difficulty in articulating why; more than once the reverse case was argued as they got rather mixed up;

'people in LEDCs are only in agriculture therefore they don't need the water much but HEP is really important to MEDCs'.

Some used the map well with reference to Thailand, noticing its significantly high number of other rivers and drawing the logical conclusion. Vietnam always seemed to be dependent more on upstream countries use of the water than the river. The significance of 20million people on the agricultural lands was mostly dwarfed by the problems of salt infusion. Many candidates seemed puzzled by the word '*dependency*'. A frequent ploy to answering this question was to copy out the final paragraph to Resource 1a) without pointing out how dependency actually varied.

1d) Using all of the resources, critically examine the view that physical geography of the Mekong basin presents more obstacles than opportunities to economic development.

The 'physical geography' part of the question seemed to be ignored in a large number of cases, particularly by weak candidates. These tended to list a few uses of the river without reference to the physical environment whatsoever and then go

on to (another) repetition of the human problems of the past wars, dependence on the French and the problems of the incursion of seawater into the delta.

'the river causes many problems and salt water incursion into the delta is a big worry for Vietnam'

Again HEP tended to be the main opportunity. The upper stage was the best dealt with. Many started by saying that it was an obstacle for agriculture because of the steep land but an opportunity for HEP for the same reason. Very few candidates then managed to follow a similar simple but effective approach for the rest of the river. The link between HEP and the problems it caused for the lower region tended to take hold at this point without real reference to the question. Many of the answers tended to bring in large amounts of the source information without any apparent rhyme or reason making this quite difficult to sort at times. Too often candidates were content to lift quotes from the resources with no extension of these statements or with little attempt to make them relevant to the question by 'examining the view', let alone 'critically'. While human factors were often seen as 'obstacles' to economic development and at the highest level this could be quite thoughtful as in;

'it is largely human and historical factors that control development in the region and not the physical geography although it does present challenges'

Most took this as an excuse to make no mention at all of the physical geography from that moment on and certainly failed to establish any sort of link with economic development. Only a few came to this sort of evaluative conclusion;

'Physical remoteness and inaccessibility certainly inhibit economic development in the upper basin but as the history of Iceland demonstrates they do not control it. The physical geography of the lower basin certainly presents challenges in the form of periodic flooding and the tropical climate but these are also opportunities. The fertility of the region would allow the commercialisation of agriculture and potentially the development of industry in cities. Tourism, building on the natural beauty of the basin and its ecological significance (Tonle sap) might provide a launch pad for economic development.'

Section B

2. Assess the view that in wilderness areas, the challenges always outweigh the opportunities

As is usual this was the most popular essay on the paper but significantly for many it was not really what they wanted and, nor in some cases was it what they had carefully prepared.

As a consequence there tended to be 3 groups of essay types that appeared here. A significant number of candidates evidently had learnt the topic well and could outline the basics of 2 or more wildernesses quite successfully, frequently a periglacial environment such as Alaska, and a rainforest, often 'Amazonia'. Often these did tend to be mere case studies repeated and the use of the material was actually rather limited with challenges and opportunities getting lost in the forest especially. The main higher order idea that did come through was that technology was changing the balance and that as it advanced so the opportunities would

become greater, Iceland was occasionally used to very good effect here. Some, quite rightly, concluded that it was merely in the end a matter of economics and could add a twist as in;

'It is self-evident that wildernesses offer more challenges than opportunities. If that was not the case they would no longer be wildernesses. A transformation through technology has been witnessed in the south-west of the USA where cities such as Las Vegas and Phoenix have grown rapidly in areas that were very lightly inhabited before the 20th century. Air-conditioning and the technology of importing water from other regions has allowed this growth. Whether or not developments such as this are sustainable is another difficult question.'

There was a significant minority who took this concept of change to extremes and concluded that as Pangaea was all once a wilderness so the whole world was a wilderness and therefore they could describe even London as being development in a wilderness.

However the most common type of essay was the 'one case study' (usually Alaska) with occasional hints of a desert/glacial area. These tended to be secure but provided little to really attack the question.

The third type, sometimes whole centres sad to say, were those that wanted the hazardous environments question and were not going to be stopped from writing it anyway. Often these were characterised by a failure to define a wilderness area at the start, suggesting a hint of concern about the appropriateness of what they were about to offer. This lack of a definition was a very significant discriminator in the end for many essays, typically opening with a short mention of Alaska and then straight into hazardous areas. Some very strange concepts of 'wilderness' subsequently emerged with examples of such areas taken to include 'hazardous areas' e.g. Bangladesh; the Nile Valley; the Mississippi; the Holderness coast; North Norfolk; Barton on Sea; Los Angeles, San Francisco, areas of seismic/volcanic activity and the North Sea! In Antarctica, according to one candidate, one can expect to be challenged by polar bears and melting igloos!

3. Describe and explain the ways in which a rapid growth in population can pose a threat to the physical environment

For a large number this essay was translated as, '*Describe how the population affects the physical environment*'. Rapid growth was either ignored completely or referred to in the opening paragraph and then ignored. A number got bogged down in the reasons for rapid growth but very few had any data at all to illustrate the point that they wanted to make. This question produced some of the weakest essays seen probably acting as a sanctuary for candidates, so stunned by the lack of a hazards essay and so confused as to the nature of a 'wilderness' that they sought shelter here, often unsuccessfully.

A significant proportion of these were at a very basic level with vast amounts on how population grew, either numerically or spatially, but little on the effects, yet alone the threats, to the environment. It was not uncommon for half a page to be devoted to describing what towns look like/how they grow to be concluded with;

'this covers the fields over' or 'this causes pollution'.

Links to the greenhouse effect were often simply stated or missing the explanatory part between increasing CO² and the melting of the ice caps. Global warming was clearly relevant (if it had been 'justified' by the candidate but far too many still think that it is caused by holes in the ozone (O-Zone - sic!) layer, and that ozone holes are caused by carbon dioxide. Many of the better essays did explain the links well, although genuinely located case studies were rare. Smaller scale threats to rivers through eutrophication and increased runoff from cities were more successful. The Las Vegas case study reworked from trial papers no doubt was often used although again the actual effects of using a lot of water were often rather vague. Deforestation, pollution and the greenhouse effect was prominent and, at times, well done but even links to soil erosion were often weak with confusion of infiltration and runoff. Many simply dealt with some environmental changes resulting from population growth, which could not really be regarded as 'environmental threats'. For example, many regarded urban heat-islands as being a major threat? Far too many candidates gave us no locational detail at all.

There were some happier examples and at the very top some encouragement that we are turning out students with an appreciation of the complexities of this relationship between man and his environment;

' Many of the problems seen in areas such as the south west USA are the consequence of increasing affluence rather than a simple question of numbers. The IPAT formula devised by Paul Ehrlich suggests that rapid growth of Population (P) needs to be taken in conjunction with affluence (A) and the type of technology used (T) to better understand the relationship between human beings and their environment. In modern Chinas for example although rapid population growth, at least in cities, is still an issue for loss of land, water demand and waste disposal the real issue is the consequences of growing affluence. The Chinese are buying cars at the rate of over 10,000 a day; cars that use outdated emission control systems. If the Chinese veer reach USA rates of car ownership (200 million vehicles for 300 million people) then there will be 800 million more vehicles on the roads of the world. This threat to resource usage and the global climate is a product of affluence and the onward march of industrial capitalism and population growth is an insignificant factor'.

4. Examine the ways in which either biotic or hydrological resources are managed and protected

This was the least popular essay choice. There were one or two good accounts of local river management schemes otherwise the Mississippi tended to dominate with reasonable straightforward case studies, although the focus on either biotic or hydrological often got lost. 'Hydrological' often included many marine examples such as Barton on Sea and Hastings. The tendency for some was to mention management on every other line but not to make much reference to protection. Nor was explanation of the carefully described management projects very forthcoming;

'The Mississippi is managed in many ways. The building of wing dykes helps control the river by narrowing the flow. This is often done as well as protecting the bed and the banks form erosion. Flooding is prevented by the building of levees although these can collapse as they did in 1993 and recently in New Orleans.'

Not many appeared to have come across the term 'biotic' although there were some centres that had obviously spent some time examining coral reefs and were able to offer balanced and thoughtful responses;

'the loss of coral reefs has been a result of either lack of management or conflicting uses that have not been satisfactorily resolved. The growth of tourism and the increasing interest in the natural environment has brought pressures both from divers and the raiding of the reefs for their fish stock upsetting the natural balance. Management and protection can involve a complete ban on the exploration and usage of a reef, as on parts of the Great Barrier Reef but, more frequent, is control of numbers of visitors whilst banning such destructive practices as fishing using explosives and taking coral as souvenirs or even building material as off the Thai coast at Phuket and in the Maldives'

5. Evaluate the success of governments in controlling the growth and distribution of population.

This was quite popular and sometimes very well done indeed. What was needed was recognition that growth and distribution mean different things and that the evaluation of success is not always easy as in;

'The success of a government policy may not be quite the same thing a success for individuals. The Indonesian transmigration policy was successful in moving large numbers of people and thus it relieved pressure in Java but it was unsuccessful for many of the migrants especially those who ended up in Borneo at Kalimantan.'

China was most definitely to the fore and it was quite pleasing to see that a reasonable number of candidates did try to evaluate, albeit often by asserting success or failure, and did not merely describe the policy at great length. Indeed at times a little indication of the actual policy would have been useful. Most answers were quite well balanced, covering both growth and distribution.

In weaker candidates responses China tended to be the only policy of any note and the version offered was often inaccurate;

'one-child policy was brought in when the Chinese government realised that it had a problem. Although unpopular in many areas it was very successful and Chinese population fell'

Stronger candidates managed some dates and data and some semblance of reality as in

' Chinese fertility rates had been falling fast when in 1979 the one-child policy was introduced. In fact Chinese birth-rates grew slightly in the early period of the policy from 18 per 1000 to 21 per 1000, and discussion of the policy has been complicated that some foreign observers have a vested interest in its success. The other policies implemented in China, such as land reform are less likely to receive attention in the west'

Intelligent and well-taught candidates were also able to support their China material by contrasting it with Singapore and their *volte-face* from anti- to pro-natal policies.

Evaluation proved difficult as many of the quoted policies are still in operation and thus information is rarely available or uncontroversial. Some explicitly addressed this point;

'it is too soon to draw a definite judgment about success since the policy is still operational'

Regional policy was also included by many to deal with population distribution with the relocation of capitals such as Brasilia and the building of UK new towns. Correct information of the latter was not always forthcoming, being hailed as a great success especially because of their good connections to London encouraging commuting etc. Policies on migration controls featured in a few attempts and this was generally a helpful addition to the content. There was a tendency in a number of the weaker essays to confuse natural growth with government policy, citing government influence as the chief reason for the urbanisation of the UK.

Statistics

Unit 6461 - Physical Environments

	Max. Mark	A	B	C	D	E
Scaled boundary mark	60	43	38	34	30	26
Uniform mark	90	72	63	54	45	36

Unit 6462 - Human Environments

	Max. Mark	A	B	C	D	E
Scaled boundary mark	60	41	37	33	29	25
Uniform mark	90	72	63	54	45	36

Unit 6463 / 01 - Personal Enquiry

	Max. Mark	A	B	C	D	E
Scaled boundary mark	60	46	40	35	30	25
Uniform mark	120	96	84	72	60	48

Unit 6463 / 02 - Applied Geographical Skills

	Max. Mark	A	B	C	D	E
Scaled boundary mark	60	38	34	30	26	23
Uniform mark	120	96	84	72	60	48

Unit 6464 - Physical Systems, Processes and Patterns

	Max. Mark	A	B	C	D	E
Scaled boundary mark	50	35	31	27	23	19
Uniform mark	90	72	63	54	45	36

Unit 6465 - Human Systems, Processes and Patterns

	Max. Mark	A	B	C	D	E
Scaled boundary mark	50	34	30	27	24	21
Uniform mark	90	72	63	54	45	36

Unit 6466 - Synoptic Unit

	Max. Mark	A	B	C	D	E
Scaled boundary mark	75	50	44	39	34	29
Uniform mark	120	96	84	72	60	48

Notes

Maximum Mark (Raw): the mark corresponding to the sum total of the marks shown on the mark scheme.

Boundary mark: the minimum mark required by a candidate to qualify for a given grade.

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