



ASSESSMENT and  
QUALIFICATIONS  
ALLIANCE

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# Mark scheme January 2004

## GCE

### Geography B

### Unit GGB4

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## General Instructions to Examiners

It is important that every Examiner marks the scripts to the same standard as the rest of the panel. All Examiners must operate the Marking Scheme in a similar and consistent manner, and hence they must all participate in the application of that scheme at the Standardisation Meeting. In particular they should take careful note of all decisions taken or changes made at the meeting. Examiners are allocated to a Team Leader for the period of examining, and any difficulties that arise should be discussed with that person.

## The Marking Scheme

The Marking Scheme consists of two sections for each question or sub-question – the Notes for Answers and the Mark Scheme itself.

### Notes for Answers (NFA)

These indicate the possible content for the various sections of the question paper. In some cases (for example short answer questions) the NFA may indicate the only response that is acceptable, but in many cases they indicate either a range of suitable responses, or an exemplar of the type of response required. Therefore, in most cases the NFA do **not** provide model answers, and should not be regarded as such. More NFA may be added at the standardisation meeting if it is felt by the Principal Examiner that details of appropriate ways of answering the question have been omitted.

### The Mark Scheme

This is provided in italics and provides the instructions to Examiners as to how they are to assess the work of candidates. The number of marks allocated within the mark scheme to a question should correspond to the number of marks for that question on the question paper.

There are two ways in which the Mark Scheme operates:

- (a) it indicates how the marks to short answer questions are to be allocated – usually to a maximum of 4 marks.
- (b) it indicates how Examiners should move through the Levels in a level response mark scheme – usually to all questions of 5 marks or more. Each Level has a levels descriptor, with clear statements of the “triggers” to move candidates from one level to another. Each Level contains a range of marks as shown on the Mark Scheme.

A number of features have been used to distinguish between Levels, for example:

- a number of characteristics, reasons, attitudes etc.
- the degree of specification, for example the use of specific case studies, or accurate detail
- responses to more than one command word, for example, describe and suggest reasons
- the degree of linkage between two aspects of the question
- the depth of understanding of a concept.

### The Marking Process

A sample of an Examiner's marked scripts will be marked again by a Senior Examiner according to the procedures set out by the Board. Also the scripts may be re-examined at the Awards Meeting and the subsequent Grade Review. Therefore, it is most important that Examiners mark clearly according to the procedures set out below.

- All marking should be done in red.
- The right-hand margin should be used for marks only.
- The overall mark for a question must be ringed at the end of the answer.
- The total mark for the question must be transferred to the front of the script.
- The left-hand margin is where an indication of the level achieved is written.  
Comments and codes (see below) may also be written on the left.
- Indications of the levels achieved may also occur in the body of the answer if this is easier for the Examiner to apply (e.g. in the marking of diagrams).
- Ticks should be used for short answer responses and Level I responses only, with one tick representing one mark (to the maximum allowed in a Levels scheme).
- Levels II, III and IV should be indicated with a Roman II, III or IV on the script, and this symbol should be used each time this Level is achieved. Examiners may wish to bracket an area of text where this level of response has been achieved.
- Once a candidate has reached Level II, additional Level I credit should be indicated using a + symbol. If these points are of sufficient quality **one additional mark** can be awarded (assuming no further Level II points are made).
- Examiners may indicate strong Level II or III material by writing "Level II (or III) – "good" in the left hand margin of the script. The Examiner should ensure that this is reflected in the **awarding of an appropriate number of marks** at the end of the answer.
- Level III is to be used only for questions of 9 marks or more, and Level IV is to be used only for questions of 25 marks in total.

### Other Mechanics of Marking

- Underline all errors and contradictions.
- Cross out irrelevant sections using a line from top-left to bottom right. (However, be careful to check that there is no valid material, however brief, in the mass of irrelevance).
- Indicate repeated material with "rep".
- Other useful marking codes can be used, for example, "va" for vague, "NQ" or "Not Qu." for failure to answer the question, "Irrel" for irrelevant material, and "SIF" for self-penalising material.
- Put a wavy line in the left-hand margin to indicate weak dubious material.
- If the rubric is contravened, mark all answers but count only the best mark towards the candidate's total mark for the script. Put the mark for the question on the front of the script in the usual way, but also write "RAM Rubric" on the front of the script.
- Large areas of text must not be left blank – use the wavy line or write "seen" alongside the text. All pages must have an indication that they have been read, especially supplementary sheets.
- Unless indicated otherwise always mark text before marking maps and diagrams – do not give double credit for the same point made in the text and a diagram.

### Quality of Language Descriptors

The following descriptors concerning the quality of language must be applied to **all** questions in which candidates are required to produce extended writing. To attain full marks available at a level of response, the appropriate Quality of Language descriptor must be achieved. Use the same quality of language levels as are used in the geographical element of the mark scheme under consideration.

#### **Three-level descriptors**

- LEVEL I**
- Style of writing is suitable for only simple subject matter.
  - Expression of only simple ideas, using a limited range of specialist terms.
  - Reasonable accuracy in the use of English.
- LEVEL II**
- Manner of dealing with subject matter is acceptable, but could be improved.
  - Reasonable clarity and fluency of expression of ideas, using a good range of specialist terms, when appropriate.
  - Considerable accuracy in the use of English.
- LEVEL III**
- Style of writing is appropriate to subject matter.
  - Organises relevant information and ideas clearly and coherently, using a wide range of specialist vocabulary, when appropriate.
  - Accurate in the use of English.

#### **Two-level descriptors**

- LEVEL I**
- Manner of dealing with subject matter is acceptable, but could be improved.
  - Reasonable clarity and fluency of expression of ideas, using a good range of specialist terms, when appropriate.
  - Considerable accuracy in the use of English.
- LEVEL II**
- Style of writing is appropriate to subject matter.
  - Organises relevant information and ideas clearly and coherently, using a wide range of specialist vocabulary, when appropriate.
  - Accurate in the use of English.

**Question 1****(a) Notes for answers**

**Market processes** operate in an environment where the ability to pay the going rate will take precedence over any local or national concerns. Often objectors cannot afford to outbid the developer. Consequently the latter very often gets her/his way, and the development goes ahead with the minimum of consultation. Consultation can often take the form of an opportunity to voice objections or propose counter-proposals, but with no right of independent arbitration or of appeal. Market processes may be relatively quick but they involve only the owner and the purchaser and the people involved in the transaction.

**Planning processes** attempt to provide a means by which local authority planners can:

- listen to the local community (and therefore appear to be more democratic)
- listen to the organisation responsible for a proposal of change
- have overall development control.

Any refusal that a local authority planning committee may give may lead to an appeal, or may result in a developer going to a higher body, for example, national Government in the form of the Department for the Environment, Food and Rural Affairs. Planning processes are costly (in terms of both time and money) for Local Authorities.

*Up to 4 marks for either term to an overall maximum of 6 marks.* (0-6 marks)  
**(6 marks)**

**(b), (c) and (d) Notes for answers**

Clearly, we are in the hands of the candidates here. What follows is a generic mark scheme, and the standardisation meeting will apply it the light of the material offered by candidates.

- (b) **Level I** – *basic statements of the origins of the conflict. Area of conflict is not clearly stated at the required local scale. Accept background of conflict.* (0-2 marks)

**Level II** – *more detailed statements of the origins of the conflict. Clearly linked to named area, which is at a suitable local scale.* (3-5 marks)  
**(5 marks)**

- (c) **Level I** – *generalised naming of the participants, with brief and generalised statements of attitudes both for and against the issue.* (0-3 marks)

**Level II** – *participants are clearly identified by name, and attitudes are clearly attributed to the identified participants in the conflict. The recognition of variation in basis of attitudes within groups will move the candidate to the higher end of the mark range. If the candidate groups the participants, accept only one group of attributes.* (4-7 marks)  
**(7 marks)**

- (d) **Level I** – *simple statements of process by which the conflict is being resolved with no statement of possible outcome. The statements could apply to any such conflict, there being no specificity to the identified conflict.* (0-3 marks)

**Level II** – *analysis of the processes by which the conflict is being resolved. Some statement of specific success or an up-to-date assessment of progress towards it.* (4-7 marks)  
**(7 marks)**

**Total for Question 1 = 25 marks**

**Question 2****(a) Notes for answers**

The climate of the tropical regions of Africa with wet and dry seasons is transitional between the Equatorial rain forests and the hot deserts. Therefore, variations occur with increasing latitude. However, all areas are characterised by having a dry season (no or limited rain) and a wet season (when up to 90% of the annual rainfall falls).

At the rain forest margins:

- precipitation is over 1000mm per year with one or two dry months;
- the temperature ranges from 22C in the wet season to 28C in the dry season.

At the desert or semi-arid margins:

- precipitation is under 500mm per year with 9/10 dry months, and the reliability of the rainfall decreases with increasing latitude;
- the temperature ranges from 18C in the wet season to 34C in the dry season.

During the Dry Season, the Subtropical anticyclone moves over the desert margins of the area. The ITCZ is on the equatorial side. Hence, these areas are affected by trade winds blowing from the land towards the coasts (offshore).

During the Wet Season, there is the migration polewards of the ITCZ. This reverses the wind direction such that it blows from the sea to the land (onshore).

*Level I – simple statements of seasonal climatic characteristics, with limited detail in terms of direction, rainfall amounts or temperature readings. (0-3 marks)*

*Level II – detail of seasonal climatic variations with accurate statements / directions / figures of wind, rainfall and temperature. (4-7 marks)*  
**(7 marks)**

**(b) Notes for answers**

There is a very pronounced peak in the discharge of rivers during the late summer months of August to October. This corresponds not only to the heavy rainfall at this time, but more specifically to the period of water surplus in the soil moisture budget (see below). The spell of maximum precipitation in June to August, the soil moisture recharge, does not immediately lead to an increase in the discharge. Discharge reduces rapidly during the onset of the dry season, and then remains low from November to May during the water deficit period. The minimum discharge occurs soon after the period of highest temperatures, the time of peak evapo-transpiration.

*Level I – simple statements connecting river discharge to rainfall amounts. No references to the role of the soil moisture budget. (0-2 marks)*

*Level II – appropriate use of the soil moisture budget, for example, recognition that highest discharge occurs at time of soil moisture surplus and not highest discharge. Statements relating to the role of evapo-transpiration will access this level. (3-5 marks)*  
**(5 marks)**

**Notes for answers**

A typical soil moisture budget graph for a location that experiences a climate with wet and dry seasons (N. Hemisphere):

- Precipitation is greater than potential evapo-transpiration between July and September, whereas potential evapo-transpiration is greater than precipitation between October and June.
- When precipitation is greater than potential evapo-transpiration, at first there is some refilling of water into the pores within the dry soil. This is soil moisture recharge. When the soil is saturated, excess water will have difficulty infiltrating into the ground, and may flow over the surface. This is soil moisture surplus.
- When potential evapo-transpiration is greater than precipitation, water is at first evaporated from the ground surface and transpired from plants. Water may also be brought up to the surface through capillary action and then evaporated. This is soil moisture utilisation. However, eventually the soil will dry out completely, creating a soil moisture deficit.

It therefore has:

- a lengthy period of moisture deficit, and a short period of moisture surplus;
- total annual potential evapo-transpiration greater than total annual precipitation.

*Reserve two marks for the construction of the diagram – a line for ppt and a line for evt.*

*(0-2 marks)*

*Max 3 marks for correctly labelled diagram. One mark for correct identification or explanation of each of SM recharge, surplus, utilisation and deficit.*

*(0-4 marks)*

**(6 marks)**

**(c) Notes for answers**

Most trees are deciduous, losing their leaves in the dry season, although some evergreens are also found. Their hard leathery leaves reduce transpiration losses, and some plants may be microphyllous (small leafed) to reduce transpiration.

In the tree savanna: a parkland exists with isolated acacia trees with low umbrella shaped crowns, shading root areas and thus reducing soil moisture evaporation. The trees show xerophytic characteristics, with dense cell fluids, hard waxy leaves, thorns, and protected stomata which all reduce water loss. The trees lose leaves in the dry season. The baobab, with its very thick fleshy spongy trunk, insulative bark, and long tap roots bears leaves for only a few weeks. All of these reduce water losses.

In the grassland savanna: the grasses between the trees become shorter and sparser. The grass is perennial, it dies back during the dry season and then regrows from root nodules in the wet season. The grasses are tussocky enabling some retention of moisture. The naturally created straw dies down and protects roots.

In the shrub or scrub savanna: there are mainly acacia trees, thorn bushes or short tufted grasses. Many generate short stems from a single stock, with deep branched roots and dormant seeds which compete for water. In some plants even the stems may be capable of photosynthesis. Some grasses are feathery and wiry, and turn their blades away from the strong sun, all of which reduces water loss. In the same way, thorns reduce transpiration by having a small surface area.

**Level I** – simple statements of adaptations with no link to species, or depth of understanding;  
or good description of one adaptation only. (0-3 marks)

**Level II** – more than one adaptation explained well. (4-7 marks)  
(7 marks)

**Total for Question 2 = 25 marks**



### Question 3

#### Notes for answers

Human activity can either damage (degrade) or improve (upgrade) soils by altering characteristics and influencing soil processes.

Soil degradation:

- harvesting of crops removes the natural supply of recycled nutrients and organic material;
- removing vegetation, e.g. as a result of deforestation or overgrazing, increases the amount of precipitation reaching the ground surface; this will increase surface run off and encourage soil erosion and loss of nutrients;
- ploughing under wet conditions can produce a plough pan which restricts drainage. It can also break up stable peds and loosen soil making it more vulnerable to wind erosion with the resultant loss of nutrients;
- growing the same crop year after year (monoculture) causes a depletion of nutrients at particular depth in the soil profile;
- the use of heavy machinery and overstocking causes compaction. This creates a platy structure which impedes drainage and could lead to water-logging.

Soil improvement (conservation):

- adding fertiliser, either NPK or farm yard manure (FYM) will improve nutrient content;
- growing vegetation – helps to stabilise the soil and return leaf litter providing a longer term solution to soil erosion;
- improved farming methods influence soils;
- crop rotation/fallow periods allow soil to replenish nutrients;
- shelter belts reduce the impact of wind erosion;
- improving field drainage lowers the water table and improves aeration;
- liming raises the pH, improves soil structure and increases the availability of calcium;
- cultivation and drainage improves structure by breaking up peds creating a crumb structure and increasing pore space;
- mulching, the addition of organic material to the soil, for example ploughing in stubble;
- ploughing does help to aerate the soil and break up peds and deep ploughing can improve overall soil drainage; beneficial in poorly drained areas if undertaken at the right time.

Human influences can stop a succession from reaching the climatic climax vegetation or can deflect the succession towards a different climax; this produces a plagioclimax vegetation. Deforestation, animal grazing, fire / clearance or trampling can arrest a succession and cause it to be altered. In the British Isles, heather now dominates uplands that were once forested. Heather would have occurred naturally but in smaller amounts. Present dominance has been encouraged and maintained by deforestation and managed burning which has eliminated less fire-resistant species. Sheep grazing has prevented the regeneration of climax woodland as the animals destroy the young saplings. In other areas heather has invaded surfaces where the removal of oak and birch woodland has led to increased soil erosion through leaching and an increase in acidity which has restricted the regrowth of trees. Much of the present day vegetation of the British Isles is a plagioclimax largely as a result of clearance from the Roman and Anglo Saxon periods through to the 11<sup>th</sup> century, when only about 10% of woodland remained in England and Wales.

**Mark scheme.**

<b>G</b>	<b>Level I 0 - 6</b>	<b>Level II 7 - 12</b>	<b>Level III 13 - 17</b>	<b>Level IV 18 - 20</b>
	Simple statements of human activities on the characteristics and profiles of soils.	More detailed description of human activities on the characteristics and profiles of soils.	Well developed detail of human activities on the characteristics and profiles of soils. A wide range of activities is described.	
	Simple statements of human activities on vegetation successions.	More detailed outlining of human activities on vegetation successions.	Well developed outlining of a variety of human activities on vegetation successions.	
		Simple statements of relative importance.	Detailed statements of relative importance with some recognition of the role of natural processes.	Recognition of complexity of the issue. Overall link back to quotation, either in favour or against, but based on strength of the argument.
<b>S</b>	<b>Level I 0 - 1</b>	<b>Level II 2 - 3</b>	<b>Level III 4 - 5</b>	
	Information is adequately organised, and presented with a reasonably accurate use of English.	Well-organised and presented with an accurate use of English. Limited examples.	Well-organised and presented in a clear and logical manner with a very accurate use of English. Range of examples.	

**Total for Question 3 = 25 marks**

**Question 4****Notes for answers**

The People's Republic of China is the world's most populous country (1.26 billion) and the second largest economy measured on a purchasing power parity basis (after the United States). In the mid 1990s the Chinese Government created Special Economic Zones (SEZs) and "open cities". These are areas of the country that are allowed to attract foreign companies to set up factories there. Foreign investors receive preferable tax, tariff and investment treatment. This also means that foreign companies now had access to Chinese markets, in an area where wages and production costs were particularly low. China benefits from this arrangement by earning money from abroad, and increasing the skills of its workforce. Both of these types of area were initially concentrated on the East Coast - facing the Pacific and Taiwan. For example, in the vicinity of Hong Kong four SEZs - Zhuhai, Shenzhen, Shantou and Xiamen were established, in addition to the acquisition of the commercial hub of Hong Kong itself. "Open Cities" also stretched down this coast from Tianjin in the north to Shanghai to Zhanjiang in the south. There are now over 2000 SEZs, heavily concentrated along the Pacific Coast. This area is rapidly developing into the economic **core** of the country. There are large numbers of foreign invested factories which assemble imported components into consumer goods for export. Clothing manufacturers are also investing in large numbers. Another indication of this is that in 1991, China authorised some foreign banks to open branches in Shanghai and allowed foreign investors to purchase shares in Chinese stocks. In 2001, over \$41 billion was received as Foreign Direct Investment (FDI), of which the main sources are the USA, Japan, Taiwan and TNC investment through Hong Kong.

FDI has not only taken place on the Pacific coast, there has also been investment in key locations within the body of the country. Perhaps one of the most contentious aspects of this concerns the Three Gorges Dam on the Yangtze River. The main aims of this projects are:

- to control flooding and reduce the incidence of associated death and destruction;
- to generate HEP. It is hoped that the scheme could generate 18% of the country's present energy needs;
- to provide water for irrigation for more cash crop production (cereals and flowers);
- to improve river transport by eradicating the large numbers of rapids on that section of the river.

Other **Resource Frontiers** exist where there is potential for mineral development, particularly fuels. They include:

- the major oilfields at Daqing and Liaohe in NE China which produce two thirds of the country's oil;
- offshore oilfields on the east coast in the Bohai Sea (east of Tianjin), the Pearl River Mouth and the Gulf of Tonkin;
- gas fields to the west in Xinjiang Province;
- HEP on the upper sections of the Yellow River.

China's recent economic growth has not been without problems:

- the economic poverty of the **periphery** - the rural interior and mountainous areas to the west and south. The latter are characterised by subsistence farming and pastoral activities, with low living standards even by Chinese standards;
- the large state owned industries that still exist (steel, armaments, textiles) have had difficulty keeping pace with the new private companies in competitive terms;
- there is massive migration of people from the rural areas to the rapidly growing cities;
- the control that the government had over its population policy is declining as people move away from authoritarian communities to the more liberal coastal areas;
- the environment is deteriorating rapidly, with large losses of arable land to soil erosion and economic development, and extensive air pollution.

**Mark scheme.**

<b>G</b>	<b>Level I 0 - 6</b>	<b>Level II 7 - 12</b>	<b>Level III 13 - 17</b>	<b>Level IV 18 - 20</b>
	Simple statements of the core - periphery relationship in the identified country	More detailed description of the core –periphery relationship. Some use of named examples.	Well developed detail of the core - periphery relationship. Good use of case study material.	
	Simple statements of the policies that have been put in place by national government.	Detailed statements of the policies that have been put in place by national government.	Well developed description of the policies that have been put in place, which may include detail of the mechanisms by which the policies operate.	
		Simple statements of success or otherwise.	Detailed statements of the success of the policies, or otherwise, with some recognition of changes through time as effects have come into place. Recognition that success may depend on area directly affected.	Recognition of complexity of the issue. Overall link back to quotation, either in favour or against, but based on the strength of argument.
<b>S</b>	<b>Level I 0 - 1</b>	<b>Level II 2 - 3</b>	<b>Level III 4 - 5</b>	
	Information is adequately organised, and presented with a reasonably accurate use of English.	Well-organised and presented with an accurate use of English. Limited examples.	Well-organised and presented in a clear and logical manner with a very accurate use of English. Range of examples.	

**Total for Question 4 = 25 marks**