



General Certificate of Education

Geography 5036

Specification B

GGB1 The Dynamics of Change

Mark Scheme

2005 examination - June series

Mark schemes are prepared by the Principal Examiner and considered, together with the relevant questions, by a panel of subject teachers. This mark scheme includes any amendments made at the standardisation meeting attended by all examiners and is the scheme which was used by them in this examination. The standardisation meeting ensures that the mark scheme covers the candidates' responses to questions and that every examiner understands and applies it in the same correct way. As preparation for the standardisation meeting each examiner analyses a number of candidates' scripts: alternative answers not already covered by the mark scheme are discussed at the meeting and legislated for. If, after this meeting, examiners encounter unusual answers which have not been discussed at the meeting they are required to refer these to the Principal Examiner.

It must be stressed that a mark scheme is a working document, in many cases further developed and expanded on the basis of candidates' reactions to a particular paper. Assumptions about future mark schemes on the basis of one year's document should be avoided; whilst the guiding principles of assessment remain constant, details will change, depending on the content of a particular examination paper.

General Guidance for GCE Geography Assistant Examiners

Quality of Written Language

As required by QCA, the marking scheme for this unit includes an overall assessment of quality of written communication. There are no discrete marks for the assessment of written communications but where questions are “Levels” marked, written communication will be assessed as one of the criteria within each level.

- Level 1:** Language is basic, descriptions and explanations are over simplified and lack clarity.
- Level 2:** Generally accurate use of language; descriptions and explanations can be easily followed, but are not clearly expressed throughout.
- Level 3:** Accurate and appropriate use of language; descriptions and explanations are expressed with clarity throughout.

Levels marking – General Criteria

The following general criteria relate to knowledge, understanding and their critical application and the quality of written communication as outlined in the AQA Geography A subject specification. They are designed to assist examiners in determining into which band the quality of response should be placed, and should be used when assessing the level of response an answer has achieved. It is anticipated that candidates’ performances under the various dimensions will be broadly inter-related and the general guidelines for each level are as follows:

- Level 1:** An answer at this level is likely to:
- display a basic understanding of the topic;
 - make one of two points without support of appropriate exemplification or application of principle;
 - demonstrate a simplistic style of writing, perhaps lacking close relation to the term of the question and unlikely to communicate complexity of subject matter;
 - lack organisation, relevance and specialist vocabulary;
 - demonstrate deficiencies in legibility, spelling, grammar and punctuation, which detract from the clarity of meaning.
- Level 2:** An answer at this level is likely to:
- display a clear understanding of the topic;
 - make one or two points with support of appropriate exemplification and/or application of principle;
 - demonstrate a clear style of writing which clearly addresses the terms of the question
 - demonstrate a degree of organisation and use of specialist terms.
 - demonstrate sufficient legibility of and quality of spelling, grammar and punctuation to communicate meaning clearly.

Level 3: An answer at this level is likely to:

- display a detailed understanding of the topic;
- make several points with support of appropriate exemplification and/or application of principle;
- demonstrate a sophisticated style of writing incorporating measured and qualified explanation and comment as required by the question and reflecting awareness of the complexity of subject matter and/or incompleteness/tentativeness of explanation;
- demonstrate a clear sense of purpose so that the responses are seen to closely relate to the requirements of the question with confident use of specialist vocabulary;
- demonstrate legibility of text, and qualities of spelling, grammar and punctuation, which contribute to complete clarity of meaning.

NB A perfect answer is not usually required for full marks. Clearly it will be possible for an individual candidate to demonstrate variable performance between the levels. In such cases the principle of best-fit should be applied. Experience suggests that the use of exemplars within this mark scheme and the discussion which takes place during the Standardisation Meeting normally provides sufficient guidance on the use of levels in marking.

Annotation of Scripts

- Where an answer is marked using a levels of response scheme the examiner should annotate the script with a 'L1' 'L2' or 'L3' at the point where that level is thought to have been reached. The consequent mark should appear in the right-hand column. Where an answer fails to achieve Level 1, zero marks should be given.
- Where answers do not require levels of response marking, each script should be annotated to show that one tick equals one mark. It is helpful if the tick can be positioned in the part of the answer which is thought to be credit-worthy.

General

It is important to recognise that many of the answers shown within this marking scheme are only exemplars. Where possible, the range of accepted responses is indicated, but because many questions are open-ended in their nature, alternative answers may be equally credit-worthy. The degree of acceptability is clarified through the Standardisation Meeting and subsequently by telephone with the Team Leader as necessary.

GGB1

Question 1

(a) (i) Abrasion is a process of erosion in which material that is being carried by the river is used to wear away other material on the banks and bed of the channel. **2 marks**

(ii) Attrition is the process by which particles are reduced in size and become more rounded as they collide during transportation downstream. **2 marks**

(b) Increases in discharge (and velocity) increase the size (and range) of particles that can be picked up and transported. This can be related to competence and capacity, which vary in relation to velocity. This is normally shown in the Hjulstrom Curve; silt and small sand are picked up first; clay particles and larger sands are only picked up as the velocity increases; gravels are only picked up at higher discharges. As discharge decreases the particles are deposited in size order, largest first. Clay particles can still be transported at very low velocity.

Level 1

Answer presents general pattern of change; increase related to larger particles; decrease linked to deposition. **0-3 marks**

Level 2

Some development of detail; link to competence/capacity or comments on specific particle groups. Reference to transport (or deposition) needed to score full marks. **4-6 marks**

(c) Focus on ‘cross-section’.
We should expect some detail on the actual shape of the channel cross-section, together with some written illustration as to how processes of erosion (specified) and deposition have contributed to that shape. The ‘labelled’ diagram could be used to give information or simply be a confirmation of the ‘shape’.

Level 1

Answer presents a diagram with inadequate labelling; no link between the processes and the shape. **0-3 marks**

Level 2

Well-developed answer with clearly labelled supporting diagram to illustrate the role of specified processes; good links to ‘shape’. **4-7 marks**

Question 2

- (a) Infant mortality is the number of deaths of children under the age of one year, expressed per thousand live births per year.

Point mark. Two marks for a well expressed definition.

2 marks

- (b) The percentage of population in the older age groups is rising; there is an increase in the number and percentage of elderly dependent population. This is sometimes referred to as the 'demographic' time bomb'. There is a smaller percentage of economically active population to support this growing number of the elderly. This has implications for economic growth, pension provision, health provision and cost. It may have implications for the age of retirement and attitudes towards extending working life. It has some impact on the availability of housing stock and the provision of specialist care and accommodation, etc.

Point mark. Credit up to two marks for each well-developed problem.

5 marks

- (c) An opportunity to develop ideas on attitudes towards environmental/social issues resulting from using particular types of energy.

Acid deposition; dry deposition of SO₂, NO₂ and nitric acid and the wet deposition of sulphuric acid and compounds of ammonium. The major cause is the burning of fossil fuels in power stations, smelting of metals and vehicle exhaust fumes.

Greenhouse gases: increased concentration of CO₂-in the atmosphere. CO₂ allows incoming short wave radiation to pass through but absorbs some of the long wave radiation emitted from the Earth to space. This produces a warming; the greenhouse effect. One of the major reasons for the increase in CO₂ is the burning of fossil fuels containing hydrocarbons – coal, oil, gas – but large-scale deforestation has also contributed as trees are a major store of non-atmospheric carbon dioxide.

Deforestation: removal of forested land by cutting or burning.

Environmental impact on hydrology and soil erosion but also a contributory factor to the effects of increased CO₂ levels (as above).

Removal may be for fuel, or to gain access to energy resources.

Strategies/solutions: use of catalytic converters; burning fuels with lower sulphur content, reduction in fossil fuels, gas desulphurisation schemes; reduce overall demand for electricity and car travel.

Planned programmes of timber cutting to avoid depletion.

Level 1

Answer identifies some causes in a general way with a brief reference to possible solutions.

0-3 marks

Level 2

A more developed answer which develops specific causes. One problem answered well can access Level 2. Specific strategies/solutions are linked to a cause. Two problems answered well can achieve top of level – needs to be some reference to strategies for chosen problems..

4-8 marks

Level 3

A well-developed/structured answer, which develops a range of causes and strategies for a specified problem.

9-10 marks

Question 3

- (a) (i) Large increase in banking, finance, insurance etc ; 11% - 18%
Distribution, hotels, restaurants etc ; 18%-23%
Public admin, education , health, other services; 23½ - 27%
Credit only ONE 'general' comment. **3 marks**

- (ii) Wide range of possible factors; increase in disposable income; sub-contracting of internal services for manufacturers; demographic changes (increased needs of ageing population); new technology requires additional service engineers; growth of producer services (marketing, R&D, communication, legal, financial, consultancies, IT) reflecting economic change and growth, increased consumption, growth in leisure time.

Point mark. Each well-developed factor with clear link to increase in services. Up to two marks for each factor/reason. **5 marks**

- (b) The main changes have been
- the continued displacement of poorer population to the urban fringe as a result of redevelopment of inner areas; clearance/regeneration.
 - the movement of wealthier groups towards the CBD and inner areas; particularly young (ish) well-educated, high income, legal/financial/business employees.

Close to CBD and its attractions, and close to work.

There are marked differences in the central area between wards that have undergone some form of gentrification and those that have not. Candidates could argue that the pattern of segregation has only been slightly modified by these changes, segregation by wealth is still largely based on a poor centre-wealthy fringe model. The pattern is more complex than before.

Level 1

Answer describes aspects of the existing pattern and reference to basic movements, but no link to change to pattern. **0-3 marks**

Level 2

Key triggers to this level;

Answer makes clear reference to some **change** to the pattern;

comments on how this has changed;

links to **processes** influencing the changes;

reference to **examples**. **4-8 marks**

Question 4

- (a) Clearly content depends upon chosen theme. This is testing skills in establishing aims and hypotheses.

Point mark. (1 times 3)
Clear aim = 1
General research question form = 1
Well-stated hypotheses = 2
Aim + hypotheses = 3

3 marks

- (b) Answer requires detail on the specific methods used to collect data on one stated hypothesis. Comment is required on the two variables identified together with some indication as to achievement of accuracy. This could, for example, relate to taking an average of a number of sets of timings in using a float method to determine river velocity, or giving precautions in the correct use of equipment to enable accurate readings to be obtained. ‘Accuracy’ could be based upon appropriate sampling methods, etc. Allow any comments that would help to achieve more accurate or more representative data.

Level 1

Answer describes ‘what was collected’ but with no detail on method. Comments on taking ‘averages’ without any indication as to why this is relevant in the context of the study. A bland reference to ‘averages’ without appreciation of the significance of the averaged data.

0-3 marks

Level 2

Answer provides detail on collection of both variables. This could, in the case of ‘distance’ measurements, simply be some reference to the data interval; readings taken every 100m downstream from centre of CBD/urban area.

Some aspect of accuracy is developed well.

Some reference to collection and accuracy is needed for full credit, but a balance is not essential.

4-7 marks