

GCE 2005
January Series



Mark Scheme

Geography Specification B

(GGB5)

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.

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General Instructions to Examiners on Marking

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.
- Indicate repeated material with "rep".
- 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 1**
- 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 2**
- 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 3**
- 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 1**
- 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 2**
- 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**Notes for answers**

The area is a zone of tectonic instability. It lies close to the destructive plate margin where the North American Plate is being subducted beneath the Caribbean Plate. The North American Plate plunges down into the mantle, at an angle. Heat generated by friction leads to melting of the plate. Magma rises back towards the surface. Reservoirs of magma build up, and pressure on these reservoirs increases. When pressure is released, volcanic eruptions occur. Lava, gases, pyroclasts and ash are erupted from the volcanoes. There is a whole string of such volcanoes parallel to the plate margin.

In the literature, it is not always clear whether the Caribbean Plate is continental or oceanic. It has certainly not been formed by ocean floor spreading, like the Atlantic floor has been. It is probably old and thick, but probably less dense than the Atlantic floor. Do not penalise candidates who suggest that the Caribbean is a continental plate.

- Level 1** *The answer contains basic points of understanding but is incomplete. There might also be some major errors and misunderstandings.* **1-3 marks**
- Level 2** *The answer makes clear and coherent. Some of the points are developed, but there is not a complete account of the processes leading to the volcanic activity. There may be some small errors and misunderstandings.* **4-7 marks**

This all gives a basic Level 2 mark:-

*Movement of plates
Convergence
Subduction
Melting
Return of magma to surface.*

These ideas allow features to be linked with processes to move up Level 2:

*Relative densities
Frictional heating
Benioff zone
Magma rises/less dense
Trough and island arc,
etc.*

Relevant comparisons with other areas can also raise an answer through the Level.

- Level 3** *The answer is detailed and thorough. A full understanding of the causes of vulcanicity in the area is shown. If several of the points given in the table above are explained clearly, the answer should reach Level 3. Similarly, if detailed, relevant comparison with other studies are used, the answer should reach Level 3.* **8-10 marks**

Question 2**Notes for answers**

Primary effects are likely to be similar to those experienced in the past. These might include ash falls, gas and magma eruptions and ash and lava flows. Earthquakes also occur when the volcano erupts. The ash flows lava flows have been in an easterly direction and are confined to sparsely populated or unpopulated areas. The ash falls are more damaging and more widespread. They travel in whichever direction the wind is blowing.

Chances of ash and lava flows occurring in the next 30 years are provided in Item 5 of the AIB. They are 5% in Zone 5 and in the next 6 months; 14% in the next 5 years; and 25% in the next 30 years; that is there is only a 1:4 chance in the next 30 years, which seems to be reasonably safe, especially the warning that will be given of any eruption.

People can be trapped, burned or suffocated by the primary effects of the volcano.

The immediate secondary effects caused by the earthquakes are rock falls and landslides. Again, these are mainly in populated areas because they are on the flanks of the volcano.

The main secondary threats from the ash are to farmland, fishing grounds, houses and the air that people breathe. Obviously, damage to the farming and fishing affects people's livelihood and can lead to emigration. The threats to industry and tourism also caused people to leave as they lost their livelihoods. It is not known just how long the damage to farming and fishing will last. In fact, the fertilising effect may bring benefits to the farmland in the long-term.

Build up of ash on roofs can cause collapse of houses. This problem should be fairly easy to deal with. Lung diseases might be caused by people breathing in the ash. Neither the short-term, nor the long-term consequences of this have yet been studied in detail.

Loss of wildlife is a consequence of eruptions. However, eco-systems do re-establish themselves, although they may take very different forms after the eruption.

Do not worry about precise differentiation between primary/secondary, as long as the candidate has some ideas of the difference.

Level 1 *The answer contains some basic facts or ideas but these are probably lifted from the AIB with little or no development. There is no clear discussion of the primary and secondary effects of the eruptions and there is little understanding of key ideas in the answer.* **1-3 marks**

Level 2 *The answer is clear, with facts and ideas taken from the AIB and used clearly to make points. The distinction between primary and secondary effects is made clearly and supported with examples. The answer is developed to show the candidate's understanding of a variety of geographical ideas.* **4-7 marks**

Examples to reach Level 2 are distinction between:

- physical/human
- Short-term/long-term
- local/regional
- economic/social

or technical details

or other relevant examples for comparison

Level 3 *The answer is developed well. Facts and ideas are taken from the AIB and from the candidate's own knowledge and they are used to make elaborated points. The answer shows that the candidate can make clear links between different aspects of the geography syllabus to write in a synoptic way. Also, allow credit for sensible suggestions, not in AIB at all levels.* **8-10 marks**

Question 3**Notes for answers**

There are many ways to go about this. I have suggested one way below, but examiners must respond positively to any realistic strategies that candidates suggest.

I think that the main aim should be to avoid deaths, because this is a basic human responsibility. One way to do this is by reviewing and enforcing a clear policy to keep people out of the danger areas, which are quite clearly defined. Another is by providing a clear evacuation plan. This needs to allow people to leave any areas in immediate danger and, if necessary, to leave the island. Detailed aims for the planners can be discussed.

However, the livelihood of the islanders needs to be preserved if possible. This means that farmland and fishing need to be protected, if possible. If that is not possible then new areas need to be opened up which are away from the danger zones. In that case, infrastructure needs to be put in place to allow the population to move to new land.

Housing needs to be provided and/or strengthened and/or proofed against the consequences of vulcanicity.

Medical research needs to look at the consequences of breathing ash, and of the best way of protecting people from breathing it in.

- Level 1** *Answers at this level will consist of a lot of lifted material that has not been used to any great extent. Material may have been brought together from different parts of the AIB, but not developed any further. This can allow the answer to reach the top of this level.* **1-6 marks**
- The answer contains some basic suggestions but there is little relevant justification of the suggestions. There is not clear overall structure to the answer. Some of the suggestions might be quite unrealistic. Others may show considerable misunderstanding of the problems that might occur, and the likelihood of their occurrence.*
- Level 2** *To reach this level, something must be added to, or developed from information that has been taken from the AIB.* **7-12 marks**
- The answer is clear, with some ideas that are practical and well justified. It is reasonable well structured and covers realistic possible scenarios. The plan seems to be incomplete in some important respects though, and may show that the candidate misunderstands some significant aspects of the situation. Some clear notice has been taken of the criteria stated in the question. Some development of hurricane risk.*
- Level 3** *The answer goes beyond the information provided in the AIB, either with:-* **13-18 marks**
- *detail from the candidate’s own research,*
 - *balancing of risks/costs/benefits*
 - *clear evaluation and prioritisation*
 - *balanced discussion of volcanic/hurricane research.*
- The answer is thorough and practical. A range of suggestions is made and most of these are well justified. The justifications show a good understanding of the geographer’s approach to problem solving.*
- There will be some synopticity in the answer, bringing together ideas from different areas of the subject.*
- Level 4** *The answer is thorough and complete* **19-20 marks**
It is practical and imaginative
It deals well with a range of ideas
It is synoptic and shows geographical insight into the problems of the island and the possible solutions to those problems.

Question 4**Notes for answers**

At present, the island's economy is based on farming and fishing. Both are threatened by volcanic activity. Research could look at ways of protecting land or reefs from ash, etc., or it could concentrate on finding new area for these activities where the threat is not so strong. Alternatively, it could look at the possibility of using the volcanic material – perhaps encouraging it to break down more quickly to make it possible to farm the land again.

Research is also needed into the needs of the people. How many of them are likely to stay on the island, and how many are likely to return to Montserrat from their life as refugees. Then further research might be carried out into the best, safest places to build suitable housing, and into the best ways to make that housing suitable to withstand likely future volcanic activity, hurricanes and/or earthquakes.

What are the possibilities of rebuilding a tourist industry on the island? Several suggestions are made in the AIB. Some of these might be researched – on the island and through market research in probable countries of origin. Then, if the industry is to grow, what facilities are needed in terms of accommodation, activities, infrastructure, food and so on.

Candidates might also consider infrastructure renewal and development, attracting light industry, mining the volcanic minerals, and so on. This question should give scope to the candidates' imagination. Do not rule anything out – if a justification is attempted.

- Level 1** *The candidate offers some basic suggestions with little or no relevant justification. This may be limited to stating a plan or mentioning a need for research. The suggestions are likely to be very similar to suggestions that are already in the AIB.* **1-3 marks**
- Level 2** *Specific reference to the information or research that is needed. The candidate offers some suggestions, which are clearly based on the island's needs. There is some relevant, geographical justification of the suggestions. A well-developed plan for long-term development with implications for research but no specific detail can reach Level 2, but MAX 5.* **4-7 marks**
- Level 3** *The answer is thorough with imaginative and practical suggestions for further research. The justification of some of the suggestions is thorough and firmly based in an understanding of geography. The answer shows synopticity.* **8-10 marks**