



General Certificate of Education

Geography 6036

Specification B

Unit 5 GGB5

Mark Scheme

2008 examination - January 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.

Further copies of this Mark Scheme are available to download from the AQA Website: www.aqa.org.uk

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GGB5

GENERAL GUIDANCE FOR GCE GEOGRAPHY ASSISTANT EXAMINERS

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 2, 3 and 4 should be indicated 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 2, 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 2 or 3 material by writing "Level 2 (or 3) – 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 3 is to be used only for questions of 9 marks or more, and Level 4 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 1 | <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • 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

Figure 4 shows temperature changes over the past 400 000 years. It shows that warm periods occur approximately every 100 000 years and are then followed by cold periods. It is unlikely that these are linked to human activity because there were so few humans about for most of that period. However, these temperature cycles closely follow the pattern of atmospheric CO₂ change as shown on Figure 4. In fact, the temperature rises even appear to precede the CO₂ increases. So, they appear to have some cause other than the concentration of CO₂ in the atmosphere.

However, the concentration of CO₂ shown on that graph never rises above 285 ppm. On the other hand, Item 2 states that the current concentration of CO₂ is 380 ppm and that this is a result of human activity, mainly the burning of fossil fuels. 440 ppm is predicted to be the “tipping point” that will set off a step change in global warming and that this point could be reached in 20 years.

Therefore, the evidence suggests that Figure 4 is not of huge relevance to the discussion of the present global warming.

The graph from the IPCC, Figure 6, shows that between 1850 and the present, the average global temperature has increased by about 1°C, but that about half that increase comes during the last 35 years. The rate of increase has been even greater during the last 25 years.

Figure 5 shows the same temperature increase between 1860 and 2000. It then goes on to suggest that the rate of increase will increase – even if only the lower prediction is considered. Although this is not backed up with detail about the source of the data it could be assumed that the IPCC has based its data on scientifically reliable sources. Therefore, as the evidence suggests that the rate of increase is fast, and as we know that it is happening at the same time as the big increase in CO₂ concentrations it can probably be assumed that the human activity is causing some or all of the climate change that is shown on the graphs – Figures 5 and 6.

Candidates should then add their own knowledge and understanding from their GCE studies to further illustrate their answers.

Level 1 (1 - 5 marks)

At the bottom of the level, the answer lifts some data from the booklet but does not use it or develop it.

As some basic development of ideas and use of the data to illustrate points takes place the answer moves up the level.

If the candidate refers to learnt information but does not use that data to develop ideas that are relevant to the answer, the mark does not move beyond Level 1.

Level 2 (6 - 10 marks)

The answer shows some relevant development of the information from the Booklet and/or uses the candidate's own knowledge in a clear way to answer the question as set. If there is clear development of the theme of the answer it should move towards the top of the level.

The answer accesses Level 2 if it recognises:

- two different phases/scales long term and short term since 1880
- Figure 4 shows to linked patterns but not necessarily cause and effect
- the acceleration of warming in Figures 5 and 6 suggest a strong link with human activity/industrialisation/population growth
- the relevance of the CO2 footnote
- the importance of the tipping point, the point of no return/feedback loops
- k - new IPCC predictions in 2007 suggest a bigger temperature change is likely.

Level 3 (11 - 15 marks)

The answer contains detailed development of information from the Booklet or from the candidate's own knowledge. If there is detailed development of the theme of the answer it should move towards the top of the level, particularly if the candidate refers to learnt knowledge as well as to information from the Booklet.

The answer accesses Level 3 if it:

- provides a clear discussion of the predictions in Figure 6
- deals with the extent in a balanced way.

The answer shows balance and clarity in its discussion of ideas.

15 marks

Question 2

Page 5 of the AIB states that 'Climate change will increase flood risk for three reasons':

- more intense rains, especially in winter, will increase peak river flows
- Rising sea levels....and tidal surges
- Soils will tend to be wetter in winter.

Each of these points can be developed, linking data from the booklet with the candidate's own knowledge and understanding.

In addition, land use changes, especially increased building of houses, roads, etc., could increase the speed of run-off and reduce infiltration, thus adding to flood risk.

Possible reduction of vegetation cover, consequent upon decreased summer rainfall and increased summer temperatures might also increase run off as a result of decreased interception and infiltration.

Level 1 (1 - 4 marks)

At least one of the possible causes of increased flooding is described. However, the answer is basic with no cause explained clearly.

At this level much of the answer relies on data lifted from the Booklet.

Level 2 (5 - 8 marks)

The answer takes at least one of the reasons for increased flood risk and explains why it is important.

Recognises clearly the contrast between river and sea flooding.

Clear links are made between information from the Booklet and the candidate's own knowledge and understanding.

If three of the bullet points or other points are discussed clearly the answer should reach the top of Level 2.

Level 3 (9 - 10 marks)

The answer is thorough and detailed.

Links between the different causes of flood risk are developed.

The answer is clearly synoptic showing good, synoptic, all-round understanding of the issue.

10 marks

Question 3

Item 4 suggests that summer rainfall will be reduced and that winter rainfall will increase. Moreover, much of the increased rainfall could come in heavy downpours.

This could lead to increased run-off because of saturated soils in winter, baked soils in summer, etc. leading to shorter lag times and increased peak river flows.

The effects of increased winter rainfall and increased torrential nature of the rainfall could be further increased by reduced vegetation cover leading to reduced interception, and reduced infiltration.

As the rate of river flow increases its ability to erode and transport material increases at a rate that is more than a simple arithmetic increase. Therefore increased flashy river flow will lead to a greatly increased rate of erosion and transportation.

Similarly, increased surface run-off will lead to increased mass wasting, sheet wash and soil erosion, particularly if the soil is less well bound together by root systems.

Level 1 (1 – 4 marks)

The answer makes at least one basic point.

Links between ideas are not developed.

The candidate relies on material lifted from the booklet but not developed using knowledge and understanding.

Where the candidate's own knowledge and understanding are shown they are very basic – even confused.

Level 2 (5 – 8)

At least one idea is developed clearly.

Links are seen between climate and/or vegetation and/or soil and/or hydrology and the actions of rivers to erode and transport material.

Although clear links must be seen do not expect complete explanations of complex inter-relationships at this level.

Level 3 (9 – 10 marks)

The answer shows detailed appreciation of the links between different aspects of the topic.

It is synoptic and shows good geographical understanding.

10 marks

Question 4

The aspects of the causes of climate change that need to be planned for include:

- carbon emissions from houses, workplaces and transport
- increased carbon emissions caused by inefficient movements, including private as opposed to public transport and urban layouts that encourage increase movements in everyday life
- generation of electricity that uses fossil fuels as opposed to renewables.

The aspects of climate change and its consequences that need to be planned for include:

- rising temperatures
- decreased precipitation
- increased storminess of precipitation
- increased river flooding risk
- rising sea level and increased risks of erosion and flooding
- increased erosion risk as a consequence of more torrential rainfall
- provision of a reliable water supply at a time of reduced rainfall, less reliable rainfall and increased demand from an increased population.

Candidates can suggest a variety of ways of planning for a reduction of any of the causes. For instance, they could discuss small scale generation of renewable energy, such as solar panels on roofs, heat exchanges, mini-wind turbines and so on, or reduced energy use by better insulation and triple glazing or by planning communities where the need for journeys to work, shopping or social activities is reduced.

Similarly, they can suggest ways of helping people to live with the consequences, including designing house that are better equipped to cope with high temperatures in summer, or designing the whole area so that it is protected from increased flood levels - whether from rivers or the sea.

Flood control and prevention in the Gateway area is an important aspect. Answers could consider building more defences, or abandoning some defences to allow the development of wetland areas, which might act as a more effective barrier to tides. Leaving land on the flood plain for flood water storage should also be considered, but this needs to be considered alongside the need to build housing, communications infrastructure, etc. Management of the upper parts of the drainage basins could also be considered - afforestation, less intensive farming, etc.

Water supply could be provided by storage in reservoirs, from ground water supplies or by importing water from areas of surplus. Increased recycling of water, water saving and improved distribution might also be considered.

Level 1 (1 - 5 marks)

The answer consists of a series of isolated points. They are basic, with little connection or development of ideas. There is little practical application of these ideas to the Gateway area.

Level 2 (6 - 10 marks)

The answer makes at least one clear point where a cause or a consequence of global warming is linked well to a reaction by the developers and planners. There is some practical application of these ideas to the Gateway area.

Level 3 (11 - 15 marks)

The answer is well developed with a range of points, including both causes and consequences, linked well to reactions by the developers and planners. There is detailed practical application of these ideas to the Gateway area. It is synoptic and shows a real understanding of the application of geographical ideas to the case study area. A clear consideration of the issues at different scales within the TG area should reach Level 3.

15 marks