General Certificate of Education

Geography 5036 Full Course
Specification B

Unit 1   GGB1

Mark Scheme

2007 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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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 that 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 might 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 be regarded as such. More NFA may be added at the standardisation meeting if it 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 the 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 question 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 "trigger" 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 specification 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 the 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 Meetings 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 a 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 level achieved may also occur in the body of the answer if it 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 had 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 used only for questions of 9 marks or more, and Level IV is to be used only for questions over 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.
- 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 the text must be not be left blank – use the wavy line or write "seen" alongside the text.
  All pages must have 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.

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Question 1

(a) **Level 1** **(0-3 marks)**
Answer indicates the nature of the investigation and collection method(s); largely 'what was collected'. General idea of method but not well stated.

Level 2 **(4-5 marks)**
Hypothesis is clearly stated **and** appropriate method(s) of data collection is developed; it is **clear** how the specified data (for that hypothesis) were obtained. e.g. in a river study relating velocity to distance, the method of obtaining float times for a set distance or measuring revolutions/minute with a flow metre, is clearly described. Readings may be an average of several float runs, at different distances downstream.

(b) Candidates are expected to make some reference to their results and to make some comment as to how these added to their understanding, perhaps in relation to established theory or in analysis and evaluation of anomalies.

Level 1 **(0-3 marks)**
Answer is at a basic level; general advantages of field work i.e. "seeing things for yourself".

Level 2 **(4- 5 marks)**
A **clear indication** as to how a **specified result added to understanding**; clear support for general theory or recognition of anomalies and further discussion.

Question 2

(a) Overpopulation occurs when there are too many people for the resources available at the given level of technology. This produces a low standard of living compared with the optimum.
Points mark. 2 marks for well developed definition. **(2 marks)**

(b) Most likely answer will be on China, one child policy. It is likely that some will offer Mauritius as the second example; improving education, birth control and clinics, economic growth as part of government efforts to reduce population explosion of 1960s and attempts to increase resources; de-rocking to increase arable land, inter-cropping to raise yield; increasing FDI to diversify economy.
Some may consider increasing growth rate; France; or other attempts to increase resources such as the Three Gorges Scheme.
Any attempt to address imbalance is acceptable; we should expect to see reference to an example.
Description should include some relevant detail on the attempt and how it was used, together with some assessment of success.

Level 1 **(0-4 marks)**
Answer describes attempt (s) without making any link to solution of imbalance. Low level description of methods.

Level 2 **(5-8 marks)**
Answer makes **clear link** between method or attempt and **how this would address imbalance**.
- One attempt in detail, plus link gives entry to this level.
- Two attempts, done well, can reach top of level.

Level 3 **(9-10 marks**)
Two attempts clearly described and linked to imbalance with some assessment of success.

(c) Renewable could include wind, water (hydro, wave/tidal barrage etc), biomass, geothermal, solar, biofuels.
Renewables, such as wind turbines, solar power, hydro-power, tidal barrages and biomass conversion are potentially infinite, also fuel use (Biofuels).
These tend to be 'cleaner' and less harmful to the atmosphere.
Expensive to develop but cheaper to operate. Usually implemented on a smaller, more localised scale. Can provide power on a small scale.

Point mark:
1 for correct example,
2 for each well developed advantage. (Infinite & cleaver) **(5 marks)**

Question 3

(a)   Some regions had particularly fast growth in certain sectors. For example; Finance/banking grew faster in the SE; primarily due to the capital region; proximity to Europe; functions such as the Stock Exchange, commodity markets etc. Hotel/tourism employment grew quicker in the S, SW and E Anglia, Eden Project etc.

Transport and distribution services (which generally showed a decline over the last 30 years) did increase in E Anglia; this may be linked to the growth of the east coast ports Harwich/Felixstowe, and the growth of the Cambridge area, Silicon Fen. The increase in port activity and industrial growth has generated more firms involved in transport.

Level 1   **(0-4 marks)**
Answer refers to growth of some services and general factors.
1 region = top of Level 1.

Level 2   **(5-8 marks)**
Answer makes **clear link** between **growth** and a **region**; needs a **specific reason** for **growth in area 5 (i.e. 2 examples)**.
2 in detail gives full credit.

(b)   Inward investment is capital coming into the economy from overseas. Any example of a TNC locating in the UK will be acceptable.

Point mark:
2 for definition, (inward & investment)   **(2 marks)**

(c)   Overseas investment brings capital into the economy and can influence employment levels; trade/balance of trade/payments; economic growth; the multiplier effect can encourage growth in other sectors; linkage promotes expansion in ancillary and subsidiary firms at a national or regional level. Therefore impacts upon tax yield. Can reduce local unemployment or trigger migration of workers to meet labour shortfall.

Movement out of UK can produce a negative effect on economy – but may increase profits for shareholders.

Level 1   **(0-4 marks)**
Answer at a general level; reduces unemployment; provides more capital for firms. (Impact to top of Level 1 only).

Level 2   **(5-6 marks)**
Developed answer with **clear links** between **investment** and **impact**; but **there must be some development** of **economic impact**. Two different impacts are needed for full credit.

Question 4

(a)   The photograph shows an area of open moorland vegetation with few trees; there are steep slopes, the valley in the background appears to be narrow and steep sided. Upland catchment with underlying impermeable geology.

         The moorland vegetation/lack of trees will reduce *interception* as well as reducing *evaporation and transpiration (evapotranspiration)*; more of the rainfall will reach the surface, total discharge is likely to be a higher proportion of the total rainfall input.
         The impermeability of the sub surface will mean that there will be *less infiltration*; the amount of water arriving at the surface will exceed the infiltration capacity and produce *overland flow*. This is *faster* than throughflow and baseflow and will travel to the channel quickly, aided by the *steepness of the slope angle.*
         These factors are likely to contribute to a short lag time, a high peak and high total discharge; a flashy hydrograph.

         Level 1   **(0-4 marks)**

         Answer identifies relevant characteristics without linking these to the elements influencing the shape of the hydrograph.
         Only 1 factor developed – Level 1 only.

         Level 2   **(5-6 marks)**

         The **role** of the **factor** is **clearly stated**.
         2 reasons needed for Level 2;
         Two aspects developed with clear explanation sufficient for full credit.

(b)

Month	Jan	Feb	March	April	May	June
Mean Q	53.962	40.198	37.192	27.218	18.843	15.487
Maximum	88.805	113.97	113.81	67.967	40.701	49.185
Max/Mean	1.64	2.83	3.06	2.49	2.16	3.17

Month	July	Aug	Sept	Oct	Nov	Dec
Mean Q	18.065	26.124	33.722	46.746	48.735	54.125
Maximum	42.803	71.331	67.013	134.418	97.233	108.942
Max/Mean	2.36	2.73	1.98	2.87	1.99	2.01

For the mean Q, there is a gradual reduction in flow from Dec/Jan through to June and then increase to October before Q levels off to Dec.

The max Q follows a similar but more varied pattern with highest levels in Feb/March falling to lower levels in May/July and then increasing to a peak in October.

The difference between the mean value and the maximum value varies considerably from month to month; this is particularly the case in February and March and again in October but differences are still significant in low flow months such as June, July and August.

Any scheme to manage the river based on mean flows will not cope with the largest flows; but it would be very expensive to develop strategies to deal with the maximum flows.

It would be very difficult to predict the level of Q for management purposes.

Level 1 **(0-4 marks)**
Answer describes general patterns without linking variations or variability to problems of management.

Level 2 **(5-6 marks)**
Answer presents good description and **some assessment** of river **management issue**.
Appreciates that **degree of variability** would **pose problem in planning adequate level of response** to flood issue.

(c)   Photograph shows strengthening and retention of river bank, gabions, and an attempt to retain a smooth cross profile to keep the channel regular and to maximise the hydraulic radius to increase efficiency.
The pipe may be to feed water into the channel from the valley side to reduce damage to the bank. Any collapse of the bank would interfere with the efficient flow of the channel.
Trees have been planted in this part of the catchment to increase evapotranspiration and interception as well as to improve infiltration. Tree roots will also help to stabilise the soil and keep channel free of sediment.

Level 1 **(0-3 marks)**
Answer describes method(s) without developing a clear link to the efficiency of the channel or reduction in run off from the catchment.

Level 2 **(4-5 marks)**
Answer develops a link between the method and some aspect of flood abatement or flood control. Answer suggests clear link to the physical processes operating in the channel or on valley side. Two developments needed to achieve full credit.