



ASSESSMENT and
QUALIFICATIONS
ALLIANCE

Mark scheme

June 2003

GCE

Geography B

Unit GGB1

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General Guidance

The Dynamics of Change

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 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 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 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 level 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 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) The areas with less than 3000 calorie intake per day are mainly between the tropics, although there are extensive areas (with large populations) north of the Tropic of Cancer; China, Pakistan, Nepal, northern India, Afghanistan, Japan, eastern Mediterranean, northern Africa. Some areas extend to south of Tropic of Capricorn, Chile, South Africa.

Many of these are part of the 'South' in development terms.

Most are LEDCs, but this does not effectively describe distribution.

One mark for idea of LEDCs/South, but two marks for inter tropical concentration. Additional credit for examples of anomalies.

(4 marks)

- (b) Over-population exists when there are too many people in an area in relation to the amount of resources at the level of technology available. This produces a lower standard of living than the optimum. If population total were reduced, or resources and technology increased, then the balance would change and living standards would rise.

One mark for reference to relationship between population and resources. Additional mark for reference to level of technology/standard of living.

(2 marks)

- (c) (i) Most likely answer will be on China; one child policy, although some may offer Mauritius; improving education, birth control and clinics, economic growth as part of government efforts to reduce population explosion of the 1960s and attempts to increase resources.
Any attempt 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.
- Level 1** *Answer describes basic method of control and gives general points
Detailed description of method* **0-2 marks**
- Level 2** *Two aspects well developed sufficient for full credit.* **3-5 marks
(5 marks)**
- (ii) This could be approached at different levels.
We could see reference to one specific example/project; the Three Gorges Scheme in China,
Or, one country; e.g. Mauritius, where de-rocking produced an increase in available land, inter-cropping increased output of produce and foreign investment was attracted to increase industrial growth/skills and ‘resources’.
Or, candidates could refer to larger scale ideas such as the Green Revolution and attempts to increase output/yields.
- Any attempt is acceptable; the word ‘governments’ can be seen as one country, or a method applied by several countries.
- Level 1** *Answer describes general aspects of attempt without illustrating how it would increase resources* **0-2 marks**
- Level 2** *Answer indicates how the method influences resource availability or potential e.g. de-rocking is clearly linked to the increase in the land available for cultivation which would increase the resource base.* **3-5 marks
(5 marks)**

Question 2

- (a) The hypothesis should be clearly stated; this could be directional hypothesis or a null hypothesis.

The method of collection must be appropriate for the stated hypothesis; e.g. if the hypothesis is relating one variable against distance then it should be clear how the data was sampled/collected at different points.

Level 1 *Answer indicates the nature of the investigation and collection methods; largely 'what was collected'*

0-2 marks

Level 2 *Appropriate method of data collection is developed; it is clear how the specified data (for that hypoth.) was obtained.*

3-5 marks

Properly stated hypothesis needed for full marks

(5 marks)

- (b) Any technique of presentation is acceptable; graphs, charts, maps, transects.

NB Spearman is not a method of presentation.

The description of its application should be clear; it should be possible for the reader to be able to apply the technique so described.

The question could be answered very effectively through the use of a sketch diagram to illustrate the 'appearance' of the technique as applied.

Level 1 *The method is named but application is very general; drawing of scattergraph/kite diagram; it would not be possible to apply method successfully.*

0-2 marks

Level 2 *The method is clear, e.g. axes of scattergraph/kite diagram are clearly indicated; it is clearly shown how the method was used.*

3-5 marks

(5 marks)

Question 3

- (a) Manufacturing employment has decreased from about one third (30%) in 1978 to under one fifth (17%). Service employment (as shown) has grown from 59% (under two thirds) to 76% (about three quarters). The increase in services (17%) is greater than the decline in manufacturing (13%) because agriculture and construction have both declined between 1978 and 1998. The biggest proportional growth has been in banking etc; 11% to 19%. Percentage in transport/communication did not change.

One mark for general comparison; additional marks for quantification/elaboration of scale change/differences within services.

(3 marks)

- (b) Candidates might be expected to select one activity from the services, given in the pie chart. This might focus answers on services rather than high tech manufacturing. The most straightforward to deal with is banking etc. Although this has increased in all regions it has grown at a particularly fast rate in London and the SE; along with other major regional centres such as Leeds and Manchester. The attractions of major urban centres, and particularly the capital and capital region are clear. Although these companies do not need to agglomerate in order to function, they often do. As the financial and political centre, London, with its links to Europe and the further international community, is very attractive. Transport etc. has not increased nationally, but it has seen growth in E Anglia; the growth of the east coast ports Harwich and Felixstowe and links to EU, together with the emergence of the Cambridge Science Park Hotels, restaurants have seen growth in the East Anglia and SW; but also Wales, NW, East Midlands; obvious links with leisure/tourism and business growth. Public admin etc has grown in all areas; particularly E Anglia, SW, E Mids, Yorks & Humb. As such services are usually provided in relation to population it is a reflection of aspects of population change and growth in other activities. There have been many hospital and school closures in larger urban areas as a result of declining population.

Credit any valid reason for regional variation for chosen service activity.

Credit up to 2 marks for each well developed reason.

General 'factors' to max 2.

(4 marks)

(c) The precise detail will depend upon the example(s) chosen; but we might expect to see some common elements in the answer.

Although population growth has slowed down in the last 30 years; there is an increasing demand for housing; an increasing desire to be home owners; an increase in wealth; social changes such as separation and divorce; have all led to a need for further housing development. There is an increasing number of the elderly and a reduction in the number of children; smaller family size. This has contributed to continued expansion on the urban fringe; detached, executive style housing despite smaller families.

There has been the growth in 'starter homes' and single-occupancy units, houses and homes adapted for elderly residents, flats and modern terraced homes (generally up to two bedroom); mainly central (often brownfield) locations.

- Level 1** *A basic answer which describes housing areas – no reference to Social & Demographic changes* **0-3 marks**
- Level 2** *Answer develops ideas on changes (either social or demographic) and shows how the changes link to the growth of a related type of housing or location. Some reference to S & D needed to access top of level.* **4-8 marks**
- Level 3** *Answer makes a clear reference to both types of change; good links to both type (size) and location of housing developments.* **9-10 marks (10 marks)**

Question 4

- (a) (i) Rainfall increases up to 7 hours into depression and then remains at similar levels until 11 and 12 hours when there is a marked increase up to 3.0 and then 3.8mm per hour.

There is no rain between 13 and 17 hours, then the highest hourly value in the 18th hour at 4.2mm. High rainfall lasts for 2 hours and then tails off. The most intensive rain falls in the 18th and 19th hours; 8.5mm falls between 18 to 20 hours inclusive.

Credit elements of pattern (increasing rain/dry/high rainfall input/levels of intensity;

For full credit the answer must deal with the periods 0-12, 13-17, 18-24 hours

(4 marks)

- (a) (ii) The pattern is characteristic of the passage of a depression with gradual increase in the intensity of rainfall during the approach of the warm front; rain generally ceasing in the warm sector, and short-lived, but heavy, rain during the passage of the cold front.

This should be related to the cooling of the tropical maritime air by uplift and by contact with cold air; this cooling to dew point produces condensation, cloud and precipitation. The angle of the two fronts is relevant here; the much steeper angle of the cold front (1:50) produces faster uplift and heavier rain, but the front passes over quicker as a result of the steeper gradient. It is generally dry in the warm sector; uplift is gentle (air may even be subsiding if the warm front is moving faster than the cold front) and there is less likelihood of precipitation.

Level 1 *Changes are related in a general way to the passage of fronts; rain along fronts/dry in warm sector*

(0-3 marks)

Level 2 *Answer develops links between fronts/warm sector and rainfall pattern; reasons are clear; some process is developed. Reasons for rain along fronts and reason for difference in intensity plus some comment on warm sector is enough for full credit.*

**4-6 marks
(6 marks)**

- (b) The hydrograph is likely to be flashy; the period of prolonged heavy rainfall (antecedent conditions) would produce a degree of saturation in the pore spaces in the soil. This would restrict infiltration and produce a higher degree of surface run-off. As this is a faster form of transfer, the hydrograph is likely to respond faster; there will be a short lag time, steep rising limb and a relatively high peak. Given the time it would take for water from the periphery of the catchment to reach a gauging station, the two heavier inputs of rainfall may not be apparent on the hydrograph; but allow candidates to suggest a pattern of two peaks. The steady input in the early part of the storm may serve to saturate the pore space and raise the water table; the later very heavy input could then produce a very steep limb. The water is likely to move through the system fairly quickly as there is unlikely to be much infiltration and throughflow; most of the water will flush through as surface run-off. Accept candidate's hydrograph description (sketch would be useful) and assess reasons in relation to given shape/characteristics.

Level 1 *Answer describes basic hydrograph and identifies possible factors without linking to stated shape.*

0-3 marks

Level 2 *Answer establishes clear link between factor/reason and a specified characteristic of hydrograph; rising limb, lag time, falling limb, peak, total discharge.*

4-7 marks

For full credit some reference to given rainfall input is needed

(7 marks)