



ASSESSMENT and
QUALIFICATIONS
ALLIANCE

Mark scheme

June 2003

GCE

Geography A

Unit GGA4

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General Guidance

Quality of Written Communication

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 style of writing which matches the requirements of the question and acknowledges the potential complexity of the subject matter;
- demonstrate relevance and coherence with appropriate use of specialist vocabulary;
- demonstrate legibility of text, and qualities of spelling, grammar and punctuation which do not detract from the clarity of meaning.

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 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 Co-ordination 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 '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 Advice

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 Co-ordination Meeting and subsequently by telephone with the Team Leader as necessary.

Question 1

- (a) Response should show knowledge and understanding of role of energy in development of coasts and coastal features. Most responses will refer to waves – allow up to 3 marks for clear and full statements on origin and nature of wave energy – probably related to winds including specifically named types of storm event (hurricanes etc) (1-3) Winds themselves (1-2). Gravity and its tidal effects (1-3). Tides and associated currents, longshore currents, storm surges and so on (1-2 depending on detail). Sources of energy of human activity e.g. hydrocarbon fuels (1-3) Insolation (1) Responses should concentrate on sources of energy rather than be diverted by effects or impacts or processes. **4 marks**
- (b) Response should show knowledge and understanding of relevant factors including alignment of coasts (high energy/low energy coast lines) (1-3), fetch (1-3) coastal configuration (1-3) frequency of storms (1-3), local tidal conditions(1-3), comment on human intervention (1). At least 2 factors needed for full marks. Allow 3 marks for particularly rich and well-developed single factor. **4 marks**
- (c) Response should show detailed knowledge and understanding of relevant marine and sub-aerial processes. There is an enormous range of possibilities in relation to the photograph with 2 profile contrasts evident seemingly related to the presence or absence of groynes. Wave erosion a necessary element of any response leading to cliff retreat through undercutting and slumping, collapse etc., thus leading to exposed free face, weathering and other slope processes; deposition of beach material. Type of cliff material.
- Presence or absence of (binding) vegetation, related to slope angle, stable slopes (or not). Possible references to human intervention, e.g. groynes on beach (contrasts) might have had an impact. (Further human references might be rather speculative.)
- Level 1** Generic Descriptor. Simple understanding through sound description of profiles with explanatory content, brief description with limited explanation perhaps in terms of wave action only. **1-3 marks**
- Level 2** Generic Descriptor. More refined understanding with sound description of profiles with fuller explanation of more than one factor. **4-5 marks**
- Level 3** Generic Descriptor. Clear understanding with full description of coast with distinctions and full explanation of more than one factor e.g. waves and mass movement. **6-7 marks**
- (15 marks)**

Question 2

- (a) Response should show awareness of earthquake (seismic) waves as shock waves passing through the mantle and crust resulting from localised quakes, with specific focus/epicentre in crust (1). Knowledge and understanding of P waves transmitted through vibrations in mantle along same alignment as wave direction (1-2) compared with S waves transmitted through vibrations at right angle to wave direction (1-2) consequent different speeds therefore leading to measurement at different times. P waves are the first (primary) waves to arrive, whereas S waves arrive later. P waves are 'push and pull' waves (compressional waves), S waves are 'shake' waves. P waves pass through liquid and solid, S waves through solid only. P waves pass through mantle and core, S waves through mantle only (distortional waves). Differences in impact/outcome. Language and approach which emphasise distinction (1).

4 marks

- (b) Response should show knowledge and understanding of earth structure composition of crust, mantle and core, variations in their density (1-2), zones of discontinuity (Moho, Guten) (1) causing refraction of P and S waves leading to shadow zones where P and S waves are not experienced (1-2). S waves reflected by core back into mantle. Description of wave pattern in Figure 2 without underpinning knowledge of processes – max2.

4 marks

- (c) Responses should show knowledge and understanding of the spatial distribution of earthquakes mainly related to plate tectonic boundaries and processes. An outline (or outlines) of seismically relevant events or processes at one or more types of plate boundary should attract credit. Such content should be used to demonstrate that location of earthquakes is indeed highly predictable over a period of time especially at certain types of plate boundary.

Sceptical comment on predictability of location should be credited. Useful distinctions might be made between the certainty of location within narrow as opposed to longer time frames and/or on how exactly locations can be predicted say within a human time scale. Such content is likely to indicate that the response is trying to convey an answer "to what extent...?" On the other hand positive comment on the idea of seismic gaps and earthquake location prediction might well be made.

Relevant exemplification which contributes to illustration of points made should be credited. Measured distinctions between LEDC/MEDC contexts should be rewarded.

Level 1 Generic Descriptor (1-3) Simple understanding of plate tectonics possibly rather uncritical reference to - predictability of location.

Level 2 Generic Descriptor (4-5) More detail on and refined understanding of plate tectonics more clearly being used to develop the idea of predictability – beginnings of measured and sceptical comment.

Level 3 Generic Descriptor (6-7) Convincing detail and refined understanding of plate tectonics purposefully related to locational predictability – measured and sceptical comment leading to a clear conclusion on "to what extent...".

7 marks**(15 marks)**

Question 3

(a) Response should indicate knowledge and understanding of permafrost conditions operating in periglacial conditions. Definition of active layer. Distinction being made between continuous and discontinuous permafrost in terms of the periodicity and intensity of frost, seasonal melting and mobility of upper ground levels (1-2). Extension of answer into possibilities for various periglacial processes to take place involving disturbance, movement of active layer etc. (1-2) Possibility of biotic processes in active layer (1-2). **4 marks**

(b) Response should show knowledge and understanding of one or more processes. Most likely responses will refer to solifluction/gelifluction - however frost creep, development of involutions, ice wedges, pingos and so on are all creditable. Also frost shattering within regolith, seasonal surface drainage, aolian processes e.g. blown material (sandbar). Please refer to Collard pp 226-233 to familiarise yourself with relevant content. 1-4 marks for one process or 3+1, 2+2 or 1+1+1+1 depending on number of processes outlined, however *outline* means more than just identify and the simple identification of 4 relevant processes might attract 1 mark. **4 marks**

(c) Response should show knowledge and understanding of relevant landscape processes and landforms operating/affecting and present in periglacial regions and their connection with permafrost. A selection of landforms rather than all landforms can be realistically expected and the terms of the question require at least two to be considered. Relic features as well as contemporary features are creditable and reference to both might provide a way of assessing the role of permafrost.

Contemporary features linked to permafrost include solifluction lobes, pingos and patterned ground, cryoturbations, ice wedges and so on are all potentially relevant. Relic features associated with formerly glaciated landscapes such as corries/cirques, features associated with glaciated valleys and glacial deposition and fluvio-glacial features are all legitimate.

Relevant exemplification which contributes to illustration of points made should be credited.

Level 1 Generic Descriptor (1-3) Simple understanding of the origin of at least one landform with basic or implicit reference to the role of permafrost.

Level 2 Generic Descriptor (4-5) More refined understanding of at least two landforms enabling comparison and contrast of role of permafrost.

Level 3 Generic Descriptor (6-7) Clear understanding of the role of permafrost with convincing detail on processes allowing a measured response which makes a statement on the extent to which permafrost is a critical factor. **7 marks**

15 marks

Question 4

To what extent do you agree with the view that coastal systems are too complex to ever be completely manageable?

This question is intended to enable candidates to engage in broad human and physical geographical themes represented elsewhere in the specification (and quite possibly and creditably from outside the specification as well) from a *coast processes and problems* specialisation. It should enable the introduction and elaboration of such human and physical geographical themes and allow for the human environment relationship to be explored. The response can be exemplified and illustrated at a variety of scale and contexts and the assigned task enables a discussion of values and policy aspects to be incorporated.

See generic scheme for criteria band - examiners are reminded that clear synoptic content is required for credit of 19 and over. However it is difficult to imagine an answer of reasonable quality without some synoptic content.

Appropriate content might include:

Identification and review of coastal processes and problems reference to variety and interrelationship of energy and material inputs, problems identified have implications for the overall content of the response. Allow a narrow range of at least two problems as long as it generates a full discussion. Problems might include erosion and its impacts, coastal retreat, flooding and deposition issues, prospects of rise in sea level, salinisation etc each of these should be considered in terms of influencing factors showing some awareness of complexity. Possibly a view into future sea level changes.

Systems approach may be very usefully used to underpin the discussion and illustrate the multiplicity of inter-connections and possible outcomes of management - leading to discussion of possible impacts - these could include reference to coastal systems elsewhere e.g. further along the coast - other natural systems. The idea of coastal cells could profitably be introduced. Approaches to management could well be reviewed, depending on what problems are mentioned.

Reward accurate and apt application of principles and illustration/exemplification. Such case study material/exemplars might come from anywhere. They will probably emphasise the difficulties and lack of success - look for balance in responses probably by reference to gradually increased understanding and more effective (or more realistic/pragmatic) management strategies with greater wealth and economic development. Perhaps also/or by reference to successful management strategies or indeed that some management is better than none.

Examples might be drawn from anywhere and in offering valid comparisons and contrasts they inform a response and give it substance and credibility. Both broad and specific comparisons between LEDW and MEDW contexts are extremely likely to produce synopticity etc.

Synopticity will also be indicated by wider reference to varying environments and systems and managing their impacts on ecosystems and human settlement and economic activity to atmospheric processes and potential climatic change.

The question clearly requires a discussion approach and the response should come to a view - any conclusion is creditable as long as it is reasonable and related to the preceding contents and discussion.

(30 marks)

Question 5

Discuss the view that geomorphological processes such as weathering, mass movement and those resulting from volcanic and earthquake activity cannot be managed but merely adapted to.

This question is intended to enable candidates to engage in broad human and physical geographical themes represented elsewhere in the specification and quite possibly and creditably from outside the specification as well from a *geomorphological processes and hazards* specialisation. It should enable the introduction and elaboration of such human and physical geographical themes and allow for the human environment relationship to be explored. The response can be exemplified and illustrated at a variety of scale and contexts and the assigned task enables a discussion of values and policy aspects to be incorporated.

See generic scheme for criteria band - examiners are reminded that clear synoptic content is required for credit of 19 and over. However it is difficult to imagine an answer of reasonable quality without some synoptic content.

Appropriate content might include: review of different types of geomorphological processes including others than those listed above. The extent to which they impact upon human affairs either intermittently or persistently whether for human benefit or not. A broad or narrow view may be taken as long as more than one process is reviewed there is potential for trade off between breadth and depth.

A review of two or more processes should emphasise their inevitable inexorable nature illustrated by some detailed description and explanation of the processes. Reference can be expected to the scale of the processes, their role in the operation of wider natural systems. The potential for management should be considered and this will vary depending on the processes selected. Generally a sceptical view can be expected although with regard to coastal and fluvial processes it is possible that there is some scope for effective management.

The potential to adapt to the various processes is much more evident and persuasive and measured analysis and comment on adaptation to seismicity, vulcanicity can be credited - risk acceptance is a justifiable and creditable point. Weathering and mass-movement is capable of some management - avalanche control, attempts to buttress, stabilise slopes and so forth.

Spatial variations in capacity to manage and adapt could well be creditable and be linked with levels of development, technical capacity, types of economy and cultural disposition. The ability to adapt might usefully be linked with the notion of sustainability.

Case study material/exemplars might come from anywhere. In offering valid comparisons and contrasts they potentially inform a response and give it substance and credibility. Synopticity will be enhanced by application of discussion to varying contexts, for example both broad and specific comparisons between LEDW and MEDW contexts are extremely likely to produce synopticity etc. Synopticity will be further signified by reference to different types of setting – rural/urban, agricultural/industrial, climatic type, biome and/or rooting the discussion in contexts or themes present elsewhere in the specification.

The question clearly requires a discussion approach and the response should come to a view - any conclusion is creditable as long as it is reasonable and related to the preceding contents and discussion.

(30 marks)

Question 6

Cold environments may be developed in a sustainable manner. To what extent do you agree with this statement.

This question is intended to enable candidates to engage in broad human and physical geographical themes represented elsewhere in the specification and quite possibly and creditably from outside the specification as well from a *cold environments and human activity* specialisation. It should enable the introduction and elaboration of such human and physical geographical themes and allow for the human environment relationship to be explored. The response can be exemplified and illustrated at a variety of scale and contexts and the assigned task enables a discussion of values and policy aspects to be incorporated.

See generic scheme for criteria band - examiners are reminded that clear synoptic content is required for credit of 19 and over. However it is difficult to imagine an answer of reasonable quality without some synoptic content.

Appropriate content might include: a review of the process and nature of development what it means for example in terms of agricultural, industrial and commercial change, its potential impacts on the environment both locally and globally and so on.

The concept of sustainability should be reviewed, supported by a reasonable definition - in this context an emphasis on maintaining the environment as a vulnerable one but also more general global sustainability aspects.

The characteristics of cold environments should be accurately outlined, this might be a combination of location, and aspects of their physical environment - ecological, climatic and geomorphological. This could be inclusive in coverage and as per specification might include polar and tundra regions, Southern Ocean and mountainous environments in lower latitudes.

Physical and locational characteristics might well be described as impacting upon potential for development with a need to manage and control environments by intervention if modern activities are to be undertaken and modern living conditions are achieved.

Various development options/strategies might be outlined and scrutinised.

Improving, extending existing more traditional activities such as trapping, hunting and so on might be argued as offering potential for sustainability.

Mining and mineral extraction might attract more sceptical comment, as would manufacturing in most forms.

Commercial/tertiary activity may well be argued as offering more potential for sustainability - indeed tourism in some of its modern variants e.g. eco-tourism designed to maintain resources may be seen as a perfect strategy or may attract a more critical view.

Settlement development and the environmental demands placed on the environment by modern communities might attract comment. Demands for energy, warmth, material supplies and related infrastructural requirements may well be questioned in terms of acceptability.

A discussion on whether any development in cold environments is sustainable in global terms is perfectly relevant and given the demands and requirements of modern communities might attract sceptical comment.

Case study material/exemplars might come from anywhere falling within the cold environment frame. In offering valid comparisons and contrasts which inform a response and give it substance and credibility the potential of making broad and specific comparisons between LEDCs and MEDCs or the Canadian/Alaskan Arctic compared with the Russian/Siberian Arctic. Contrasting examples are extremely likely to produce synopticity etc.

Synopticity will be indicated by wider reference to development processes, deeper discussion of sustainability, contrast environments and economic activities and so on.

The question clearly requires a discussion approach and the response should come to a view - any conclusion is creditable as long as it is reasonable and related to the preceding contents and discussion. **(30 marks)**