

GCE 2004

June Series



Mark Scheme

Geography A (GGA4)

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 Guidance for A Level Geography Assistant Examiners

Quality of Written Language

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: Accurate and appropriate use of language; descriptions and explanations are expressed with clarity 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 of 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 clear style of writing which clearly addresses the terms of the question;
- demonstrate a degree of organization and use of specialist vocabulary;
- demonstrate sufficient legibility, and quality of spelling, grammar and punctuation to communicate meaning clearly.

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/or 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 a '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

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 the meaning of coastal protection and its various aims (1), contrasting hard engineering as involving direct and physical methods perhaps working against the grain of natural systems whereas softer approaches being interventions more likely to be working with the grain of natural processes and likely to be more in balance with local eco-systems and coastal processes, less likely to disrupt coastal cell functioning, likely to be more sustainable and so on. (1-3). Language which explicitly emphasises distinction (1). Both types needing reference for more than 1 mark. Distribution in terms of initial and ongoing maintenance. (1). **(4 marks)**
- (b) Response should show an ability to accurately read and interpret the map with contrast predominantly between southern Delta Region characterised by hard approaches with reference to the evidence (1-2) compared with sand dunes coast of the central coastal region being conserved and managed rather than transformed (1-2). Judicious comment about the balance being related to the physical conditions, e.g. the contrast between the complex delta of major rivers in the south and its vulnerability to flooding compare to the continuous belt of dunes in the centre affording different levels of risk and opportunity for intervention (1-2 depending on detail). Some comment on balance is necessary for full marks. Accept measured statements about approximate balance or hard v soft, or soft v hard, as evidence is not conclusive from map. Statement which emphasizes hard or soft engineering only (1). **(4 marks)**
- (b) Response should show detailed knowledge and understanding of management of coastal environments, sustainability, economy, feasibility related to characteristics of dune environments. Dune formation and sustenance processes, vulnerability to destruction because offer multiple resources, functions in Netherlands coastal protection, ecosystems diversity, amenity and leisure and recreation. Ideas of solving conflicts, balancing costs and benefits, prioritisation of goals and so on.

Relevant exemplification which contributes to illustration of points made should be credited. Interconnections/knock on effects/coastal systems, some expansion into beach management acceptable.

- Level 1** Generic Descriptor (1-3)
Some awareness of issues of environmental management connected to dune systems; detailed understanding of environmental management but no dune context
- Level 2** Generic descriptor (4-5)
Fuller awareness of at least two issues in clear dune system context showing awareness of relevant dune characteristics. One issue in depth can get to Level 2.
- Level 3** Generic Descriptor (6-7)
Detailed awareness of at least two issues firmly rooted in dune context: sense of comment on their potential for resolution, importance of their resolution etc. Perhaps an expression of a measured and supported view.

(7 marks)

Total for this Question: 15 marks

Question 2

- a) Response should show knowledge and understanding of tectonic plates being elements of earth's crust composed of *sima*, possibly carrying *sial* continental crust (1-4 depending on detail) also showing magnetic stripes. Moving in relation to one another on the mantle below. Earth's crust divided into 8/9 major and many more smaller plates distinct from one another and with more or less clearly definable boundaries/margins, stability within the plate and concentrations of certain forms of geomorphic activity at the margins (1-4 depending on detail). The density/depth Outline of margins only(2). **(4 marks)**
- (c) Response should show knowledge and understanding of crustal formation at Mid Oceanic Ridges leading to/associated with sea floor spreading (1-2 depending on detail). i.e movement away from ridge/ divergence.

Magnetisation of new crust aligned with prevailing magnetic field, periodic changes of earth's magnetic field leading to alternate symmetrical banding at increasing distances from MOR (1-3 depending on detail). Plate movement consequent on this being at the heart of plate tectonic theory (1)

Various ways of obtaining full marks but examiners need to be confident of response relating magnetism to sea floor spreading for 3 or more marks. **(4 marks)**

- (c) Response should show sound and detailed knowledge and understanding of plate tectonics, the global distributions and nature of features such as fold mountains, rift valleys, ocean ridges, deep sea trenches, island arcs, vulcanicity, earthquakes, etc. Spatial correlation of many if not all these features with one another and with plate margins, possibility some detail on different types of plate margins and processes and features associated with them. Possibly identification of major surface elements such as ancient shields, cratons, etc. away from plate margins and not linked to (recent) tectonic processes. Credit comment that other factors may be considered but should not dominate the response. Emphasis on features not on processes.

Relevant exemplification, which contributes to illustration of points made, should be credited. Diagrams could contribute to a response and could attract credit but would need explanatory content to get more than 1 mark and ideally should be accompanied by explanatory text. Diagrams/maps without text – maximum Level 2 if they have clear explanatory content.

Level 1 Generic Descriptor (1-3)
Basic awareness of plates/plate boundaries associated with features.

Level 2 Generic Descriptor (4-5)
Fuller knowledge/understanding with some reference to types of plate margins and suggestions of an overview in relation to question.
Could get up to 5 marks for highly detailed explanatory diagram(s) without text.

Level 3 Generic Descriptor (6-7)
Fuller knowledge/understanding with some detail and diversity in responses, text rich in detail with confident use of appropriate terminology, confident and secure exemplification, clear sense of awareness of holistic/complete nature of explanation offered by plate tectonic theory. Comes to a measured view about 'to what extent?'

(7 marks)

Total for this question: 15 marks

Question 3

- (a) Response should indicate an ability to read and describe accurately the map and distributions shown on it. It should identify a north/north-eastern (more remote) concentration of indigenous land uses probably associated with traditional activities such as hunting, trapping, fishing with limited presence of more modern activities (1-2 depending on detail). More southern, south-western (less remote) concentration of more modern activities made evident by presence of non indigenous settlements, transport links, mineral/energy exploration areas, (1-2 depending on detail) Explicit reference to SW/NE divide (1). Association of more settlement with more modern economic activities (1) Comment reference to Arctic Circle or simple N/S divide (1) **(4 marks)**
- (b) Response should show knowledge and understanding of the nature of the economic activities. Indigenous likely to be primary, outdoor, related to natural environment, seasonal/cyclical influences, small scale, low energy input, sustainable, vulnerable to external disruption (1-3 marks depending on detail). Non-indigenous likely to be more diverse, secondary/tertiary, larger in scale, more spatially concentrated, more energy intensive, more externally oriented, more productive generating higher incomes, less sustainable (1-3 marks depending on detail). Many different points might be made, not necessary to make all or even most of those listed above but for full marks both should be referred to and there should be a clear sense of contrasting either through the use of language or the juxtaposition of comment on each of the two types. Do not credit repetition. **(4 marks)**
- (c) Response should show detailed knowledge and understanding of relevant key issues in development of cold environments such as these. Might be environmental in terms of impacts on local/regional physical systems - both ecological and geomorphic, with some of the difficulties that ensue. Could be creditably illustrated by reference to actual examples of impacts. Sustainability might well be referred to and credited. Social/economic/demographic impacts especially *vis a vis* indigenous/non-indigenous populations and their interest, both real and perceived with ensuing political conflict. Reference to evidence for this suggested by Figure 3 perfectly creditable e.g. areas of mineral/energy search and development in indigenous land use zones. Also be prepared to credit conflicts at a wider scale, e.g. within Canada as a whole or views about cold environment development or indeed conflicts at international global impacts and wider political interest in cold environment development. Unexpected perspectives might emerge and should be recognized such those which are against aspects of contemporary indigenous activities such as trapping and seal culling.

Relevant exemplification, which contributes to illustration of points made, should be credited, such exemplification could well come from cold environments other than northern Canada (or Alaska). Possible expression of a measured and supportive view.

- Level 1** Generic Descriptor (1-3)
Some awareness of issues, perhaps only one type or category of issue, no or simplistic exemplification.
- Level 2** Generic Descriptor (4-5)
Greater awareness of issues, two issues considered, relevant and purposeful illustration or one conflict or issue in detail. Sense of comment rather than mere description.
- Level 3** Generic Descriptor (6-7)
Full awareness of a range of issues, relevant and purposeful illustration, clear sense of comment. At least two issues required.

(7 marks)

Total for this Question: 15 marks

Mark Scheme for Synoptic Essays

Preamble

Examiners should bear in mind that these questions are synoptic in nature and offer candidates the opportunity to demonstrate knowledge and understanding:

1. across a range of geographical subject matter;
2. of connections between the different aspects of geography in the specification;
3. of the importance, where relevant, of human perspectives on themes and issues.

Candidates are advised of this both in the Assessment Unit Rubric and in the Note to Candidate which precedes the essay questions in Section B. Synoptic elements might therefore feature in answers matching all the criteria bands but can be expected to feature more prominently in higher mark bands. It will be seen that explicit synoptic content is a necessary feature of the two band ranges 19-24 and 25-30.

Additionally, essay writing is an important vehicle for the demonstration of communication skills – at level 3 these refer to writing in a manner appropriate to purpose and complex subject matter; organising relevant information clearly and coherently using specialist vocabulary as appropriate and ensuring clarity of meaning through legible text, accurate spelling, punctuation and grammar. (Key Skills – Communication Level 3 C3.3 [QCA]; Para. 13 AS/A Level Geography Specification Outlines [QCA].

Synoptic content and communication aspects should be kept in mind when assessing the unit and are incorporated into the criteria bands set out below which refer to knowledge, understanding and skills. Indicate synoptic content using the letter ‘s’ in the margin as appropriate.

CRITERIA BANDS

Examiners will use the criteria below to evaluate the work, placing the candidate’s performance in the appropriate band and attributing the mark from the left-hand column appropriate to the question concerned. They should seek the best fit from the band descriptor – work adjudged to be in a particular band might not contain all the features attributed to that band.

25 – 30

A very good answer. Consistently relevant to the theme and to the demands of the question. Evaluates explicitly where required. Displays a very confident range of knowledge and understanding by using the appropriate terminology, critically referring to concepts and theory where necessary and establishing relationships between different physical and/or human factors and processes. Synoptic elements are a prominent feature and are fully integrated into the answer and used to purposeful effect in respect of the question’s requirements. Demonstrates, where relevant, either implicitly or explicitly awareness of human perspectives upon geographical themes and issues. Argues coherently and in an organised, logical and balanced fashion. Support is consistent, accurate and detailed. A well developed essay style. Detailed and sophisticated communication skills with fluent and cogent writing style.

19 – 24

A good answer which remains relevant to the theme and demands of the question. Evaluation may now only be implicit. Displays a confident range of knowledge and understanding, but with a few omissions at the lower end, e.g. some terminology missing or some pertinent relationships left unexplored. Synoptic elements should be a feature of the answer and seen to be meeting the questions requirements. Some possibly rather uncritical reference to theory; some reference to awareness of human perspectives and decisions taking on geographical issues and problems. Argues well, but organisation may be suspect in places. Support is invariably there, but may not always be detailed. A competent essay style. Effective communication skills with accurate spelling, punctuation and grammar.

13 – 18

A satisfactory answer ranging down to the mediocre, which always attempts, but not always succeeds to be relevant. Lacking in evaluation. Displays a reasonable grasp of knowledge, but understanding is suspect in places. Relevant theory and concepts might be mentioned but with basic uncritical application. The interconnections and relationships between different physical and/or human processes are briefly mentioned but understanding of their significance is limited. There is some synoptic content which is relevant to the question. Argument and analysis are partial and become less significant in relation to mere description. Increasingly unbalanced as an answer, and the logic and organisation are clearly deficient. Support is not detailed here, occasionally inaccurate and barely consistent. The bare bones of an essay format. Appropriate communication skills so that meaning is almost invariably clear with adequate language skills. Possibly some spelling/punctuation/grammar errors.

7 – 12

A very mediocre answer which is only occasionally relevant to both the theme and the demands of the question. Decidedly deficient in knowledge and understanding with only simplistic notion of relevant theory and concepts. Little if any relevance to inter-relationships between physical and/or human processes and factors or subject matter from other elements in the specification. Increasing irrelevance in a predominantly descriptive context. Clearly lacks an ability to organise material and may drift into another answer. Support is scanty and usually suspect. A weak, barely perceptible, essay format. Basic communication skills – many spelling errors and/or oddities of grammar and punctuation.

1 – 6

A very weak answer which shows little attempt to follow the theme and the demands of the question. A very low level of knowledge and understanding, with even the simplest of concepts avoided. Very inaccurate and may completely miss the point. No idea of how to organise material with haphazard format, evidence of guesswork and little or no support. No attempt at an essay format. Little or no language and communication skills. Many errors in spelling, punctuation and grammar.

Question 4**Coastal environments change over time for many reasons. Discuss 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 *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 scales 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 should include a brief review of what constitutes change at the coast probably emphasizing the diversity of changes and reason associated with a review of the different time and spatial scales linked with these changes. Each type of change should be underpinned by sound, relevant geographical understanding. Many and varied implies that a number but not necessarily all of the following changes should be considered. must be included to access top band. Some narrowness of focus can be tolerated as long as there is a sense of looking at several different types of reason and change. Equally a purely physical or purely human approach could gain full credit as long as there is some variety and breadth in approach and some sense of synopticity. One time scale might be possible for full credit but more than one change is required for full credit. There must be discussion of change though the time scale considered can be large or small.

- Tides, tidal change, seasonality depending on local/regional conditions.
- Varying weather conditions, idea of stability and equilibrium disrupted periodically by major storm events sometimes causing longer term changes. Idea of change is one /cell causing change is another coastal element, ok as long as not overdone.
- Longer term cycles of geomorphologic processes of erosion, transportation and deposition. Models of coastal landform development related to dominant erosional and/or depositional processes related to different contextual factors, e.g. geology/lithology/structure; location/setting.
- Sea level change (isostatic/eustatic) cyclical or long term related to glaciation/deglaciation and its impact on coastal profiles and specific features associated with it such as raised/fossil beaches, wave cut platforms and other relic features; fjords/rias, etc.
- Accidental human impact on the global scale notably climatic change, global warming and predictions of rising sea levels in the near future.
- Deliberate human impact such as management of coastal environments both successful and unsuccessful – comment on the significance and longevity of these within wider spatial and especially temporal contexts might indicate mature geographical thinking.
- Longer run human economic development and settlement of coastal areas related to population growth and change, economic development and so on – an extended response could reasonably be offered here with some historical background and account., tourism likely to be the focus.
- Case study material/exemplars might come from anywhere. In offering valid comparisons and contrasts which inform a response and give it substance and credibility the potential of making broad and specific comparison between LEDCs and MEDCs. Contrasting examples are extremely likely to produce syopticity, etc.

Synopticity will be indicated generally by the breath and depth of the response and more specifically by explicit reference to atmospheric processes, geomorphological processes and the varying contexts within which coastal environments change over time.

Discussion requires a debate to be held and a view should be stated. Any reasonable conclusion can be credited as long as measured, realistic and related to preceding content.

Question 5

Geomorphological processes hinder rather than help human populations. Discuss 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 *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 scales 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 as this is a synoptic question a response of reasonable quality should have some synoptic content.

One side dimensions e.g probably on hinderance/hazard, then no real debate, max 18.

Appropriate content might include:

- A review of geomorphological processes which have the potential to affect development in various and negative ways. Processes should include at least two from tectonic, seismic, volcanic, weathering and mass movement, erosion, transportation and deposition - fluvial, glacial, etc. The review should be secure and accurate.
- The outcomes of the selected processes should be identified and reviewed. Here the impacts on human populations and their activities would likely become explicit. The balance between the idea of the process as a help (resource) or hindrance (hazard) would depend on the process under discussion.
- Vulcanicity - risks of various types and time scales balanced by opportunities/benefits for economic activity including tourism and agriculture.
- Seismicity – likely and reasonably seen as hazard only.

Plate tectonics associated with the above, possibly some idea of landscape formation might emerge here.

Time scales involved might query the relevance of tectonic processes such as sea floor spreading.

Weathering negative effects on built environment set against role in soil formation, landscape development and so on.

Mass movement - likely seen as hindrance only and deposition – depending on circumstance, possibly erosion associated with extreme events, storm conditions and seen principally as hindrance, deposition associated perhaps with flooding and alluvial deposits.

Flood plains and relationship to economic activity, population distributions and so on.

Periglacial processes perhaps especially solifluction/gelifluction might also be reviewed, mainly skeptically.

Glacial processes and their impacts on landscape development especially in upland areas might attract both adverse comment (communication problems, soil deficiencies) or favourable comment – scenic amenity leading to tourism.

In other words a very wide range of content is creditable as long as it is sound and secure and related to the terms of the question

Synoptic elements will be signified by the breadth and depth of the response and relevant references to economic activities, settlement and population distributions and human responses.

- Case study material/exemplars might come from anywhere. Valid comparisons and contrasts for example as between LEDCs and MEDCs will inform a response and give it substance and credibility. Contrasting examples are extremely likely to produce synopticity, etc. especially where the response considers matter such as cultural predisposition, willingness and technological/economic capacity to engage in management and spatially varying human value judgements and perceptions of risk and opportunity.

Discussion requires a debate to be held and a view should be stated. Any reasonable conclusion can be credited but it should be measured and realistic and relate to the preceding content.

Question 6

To what extent are cold environments fragile environments and how far does this affect their development?

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.

Two elements in this question should be addressed to access bands 19-24 and above. However, tolerate some imbalance between the two elements as long as both are clearly addressed. Responses which convey fragility in depth and details with essentially concluding comment on how it affects development – maximum 20. Different types of cold environment can be expected and are perfectly creditable.

Appropriate content might include the following.

- Notions of geomorphological/landscape fragility related to particular sets of past and present circumstances, e.g. climate, topographic leading to their essential physical characteristics. Periglacial aspects in particular might justifiably be emphasized with comment on the potential impact of endogenous and exogenous change or their vulnerability to prospect of climatic change associated with close global warming and impact of even marginal increases in average temperature.
- Ecological/Bio fragility might figure prominently related to low insolation levels, lack of energy, productivity and nutrient cycling, soil characteristics, food chains and how these expose environments to risks of damage from natural or human induced change. Marine environments such as the Southern Ocean with their vulnerability to climate change, ozone depletion on plankton, krill numbers with food chain impacts.

Effects on development are various -

- Might reasonably refer to historic (and contemporary) patterns of settlement and economic activities being related to physical characteristics but not quite engaging with question – more convincing might be references to vulnerability through fragility of traditional communities and vulnerability to damage and decline.
- Contemporary patterns of modern settlement and development with their high levels of dependency on outside support often made through central and regional government agencies as in the Canadian North or, to a much lesser extent than during the Soviet era, in Russia.
- Adjustments made in buildings and infrastructure particularly to their effects on periglacial processes – local thawing, disruption of ecological cycles and systems, etc.
- Effects of fragility on policy for development in terms of conservation and management are creditable and might usefully be illustrated by Antarctic Treaties on mineral and other

exploitation, policies in the Canadian North and current debates on energy resource development in Alaska.

Synopticity will be indicated generally by the breadth and depth of the response in terms of the processes and features associated with fragility and human impacts and responses with sustainability issues and human attitudes/values made evident in cold environment developments.

The “to what extent” element should be addressed in the conclusion by coming to a measured and reasonable conclusion. Any conclusion is creditable as long as clearly related to the preceding discussion.