AQA

A-LEVEL
Geography

GE04B Geographical Issue Evaluation
Mark scheme

2030
June 2016

Version 1.0: Final Mark Scheme

Mark schemes are prepared by the Lead Assessment Writer and considered, together with the relevant questions, by a panel of subject teachers. This mark scheme includes any amendments made at the standardisation events which all associates participate in and is the scheme which was used by them in this examination. The standardisation process ensures that the mark scheme covers the students' responses to questions and that every associate understands and applies it in the same correct way. As preparation for standardisation each associate analyses a number of students' scripts: alternative answers not already covered by the mark scheme are discussed and legislated for. If, after the standardisation process, associates encounter unusual answers which have not been raised they are required to refer these to the Lead Assessment Writer.

It must be stressed that a mark scheme is a working document, in many cases further developed and expanded on the basis of students' 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 from aqa.org.uk.

General Guidance for GCE Geography Assistant Examiners

The mark scheme for this unit includes an overall assessment of quality of written communication. There are no discrete marks for the assessment of written communication 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.

Marking – the philosophy
Marking is positive and not negative.

Mark schemes – layout and style
The mark scheme for each question will have the following format:
a) Notes for answers (nfa) – exemplars of the material that might be offered by candidates
b) Mark scheme containing advice on the awarding of credit and levels indicators.

Point marking and Levels marking
a) Questions with a mark range of 1-4 marks will be point marked.
b) Levels will be used for all questions with a tariff of 5 marks and over.
c) Two levels only for questions with a tariff of 5 to 8 marks.
d) Three levels to be used for questions of 9 to 15 marks.

Levels Marking – General Criteria
Everyone involved in the levels marking process (examiners, teachers, students) should understand the criteria for moving from one level to the next – the 'triggers'. The following general criteria are designed to assist all involved in determining into which band the quality of response should be placed. It is anticipated that candidates' performances under the various elements will be broadly inter-related. Further development of these principles will be discussed during the standardisation process. In broad terms the levels will operate as follows:

Level 1: attempts the question to some extent (basic)
An answer at this level is likely to:

- display a basic understanding of the topic
- make one or two points without support of appropriate exemplification or application of principle
- give a basic list of characteristics, reasons and attitudes
- provide a basic account of a case study, or provide no case study evidence
- give a response to one command of a question where two (or more) commands are stated e.g. “describe and suggest reasons”
- demonstrate a simplistic style of writing perhaps lacking close relation to the terms 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: answers the question (well/clearly)
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
- give a number of characteristics, reasons, attitudes
- provide clear use of case studies
- give responses to more than one command e.g. “describe and explain..”
- 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: answers the question very well (detailed)
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
- give a wide range of characteristics, reasons, attitudes
- provide detailed accounts of a range of case studies
- respond well to more than one command
- demonstrate evidence of discussion, evaluation, assessment and synthesis depending on the requirements of the assessment
- 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.

Mechanics of marking

- All errors and contradictions should be underlined.
- Various codes may be used such as: 'rep' (repeated material), 'va' (vague), 'NAQ' (not answering question), 'seen', etc.
- Use a wavy line to indicate weak dubious material (avoiding crossing out).
- Unless indicated otherwise, always mark text before marking maps and diagrams. Do not give double credit for the same point in text and diagrams.

Annotation of Scripts

It is most important that examiners mark clearly, according to the procedures set out below.

- The right hand margin should be used for marks only.
- Where an answer is marked using a levels response scheme, the examiner should annotate the scripts with 'L1', 'L2', or 'L3' at the point where that level has been reached in the left hand margin. At each point where the answer reaches that level, the appropriate levels indicator should be given. In addition, examiners may want to indicate strong material by annotating the script as 'Good Level… '. Further commentary may also be given at the end of the answer. Where an answer fails to achieve Level 1, zero marks should be given.
- Where answers do not require levels of response marking, the script should be annotated to show that one tick equals one mark. The tick should be positioned in the part of the answer which is thought to be creditworthy. For point marked question where no creditworthy points are made, zero marks should be given.

1	**Notes for answers** Remember, the question is about *issues* and not just about stats. It is also about *generation* and not consumption. Issues associated with the energy mix include: • The need to reduce the release of greenhouse gases • The approaching obsolescence of UK's nuclear power stations • Unreliability of some alternative energy sources • Strategic issues of trade and geo-politics • Peak oil and the coming exhaustion of some traditional energy sources • Changes in the price of various fuels and in the balance between the prices of conventional and alternative fuels • Development of new technologies including carbon capture as well as alternative power sources • Updating the energy grid to make it more efficient, reducing demand for generation **Mark scheme** **Level 1** 1 – 4 marks (mid point = 3) Allow credit for relevant description of the present situation. Issues are stated. There may be some basic description and discussion of the issues but this is mainly or entirely lifted directly from the AIB and does not illustrate the candidate's own knowledge and understanding or bring together information from different parts of the AIB to develop arguments. **Level 2** 5 – 8 marks (mid point = 7) There is a clear description of at least one issue along with a clear discussion of how at least one of the issues might develop in the period up to 2030. If at least two key issues are discussed clearly the answer can reach the top of the level. **Level 3** 9 – 12 marks (mid point = 11) To get into this level there must be a clear and thorough discussion of at least two issues associated with the current energy supply situation. At the top of the level the answer as a whole must be clear and detailed and show good geographical understanding of a range of issues associated with the energy mix in the UK.	**[12 marks]**

2	**Notes for answers** Factors that might be considered include: • This is the highest possible estimate and there is a 90% chance that there is actually less gas present than this. • The actual lateral extent of the potential gas bearing rock in the Lower Bowland Shales is unknown. • Test wells have not yet been drilled. • The amount of gas that can be extracted will depend on economic and technological factors that apply at that time. • Environmental and other protests might stop or limit production in some areas. • Councils, enquiries and/ or ministers could refuse permission to frack in some areas. • The permission to frack will be particularly difficult to obtain in urban areas and in National Parks and AONBs. • Knowledge and understanding of the underlying geology. **Mark scheme** **Level 1** 1 – 4 marks (mid-point = 3) At least one relevant point is made in a basic way. The mark within the level can increase with additional points being made or with a single point being developed to show some basic knowledge of that factor. **Level 2** 5 – 8 marks (mid-point = 7) At least one point is explained with some degree of clear understanding shown. Increased detail and clarity of understanding can raise the mark through the level. Clear references to research on the current situation regarding enquiries and permission will raise the mark within Level 2.	**[8 marks]**

3 (a)	**Notes for answers** Minimisation of risk includes the following points mentioned in the AIB: • Sites will be licensed by the government • Seismometer array will monitor earth tremor risk • Wells will be drilled to monitor groundwater • Access track will be built to reduce traffic on local roads • Impermeable membrane and ditch around site will reduce the risk of damage from spillage • Wells will be cased with concrete and steel to prevent escapes of gas and fracking fluids into surface rocks • Flaring off of gas to avoid its escape into local air Further research could show further points including: • Earth bank to be built around the site to hide it and reduce noise • Oil interceptor to be put in place to reduce pollution from spills • Flare tower to be enclosed to reduce noise and visual impact • Traffic management plan to reduce congestion and danger on local roads • Seismicity warning system linked to the array, which will automatically stop drilling if danger is indicated • On-site lighting designed to prevent 'light spillage' outside the site Benefits to the area mentioned in the AIB include: • Cheaper and more secure gas supply • Payment of £100,000/ well plus 1% of the total revenues to local communities Further research, and geographical knowledge and understanding, could show: • Local businesses may provide goods and services to the drilling company • Jobs could be provided in the local area (Cuadrilla suggests up to 11 at each exploration site Up to 2000 on The Fylde Up to 80'000 nationally Benefits to the country mentioned in the AIB include: • increased energy security • lower gas prices • tax revenues Further research, and geographical knowledge and understanding, could show: • Shale gas produces less greenhouse gas than coal, so it is claimed to be environmentally friendly during the transition from coal fired power stations to greener alternatives Use annotations • **MR** = risk management **NB** = national benefit • **LB** = Local benefit	**[15 marks]**

Mark scheme

Level 1 1 – 5 marks (mid-point = 3)
At least one relevant point is made by lifting material from the AIB.
As more points are taken from the AIB, but not discussed or developed using the candidate's own ideas or knowledge, the answer rises through the level.
At the top of this level there is some development of ideas but the answer still relies almost entirely on the AIB with little or no discussion of the ideas.

Level 2 6 – 10 marks (mid-point = 8)
To reach this level there is at least one point, on either risk reduction or positive benefits, that has been developed or discussed showing understanding or knowledge that goes beyond what was given in the AIB.
To advance beyond the bottom of Level 2 the answer must make reference to both the risk reduction and the positive benefits
To reach the top of the level the candidate must develop ideas on **both** risk reduction **and** positive benefits.

Level 3 11 – 15 marks (mid-point 13)
The answer achieves a range of developed points, including risk management and local and national benefits.
The answer is thorough and shows clear geographical understanding of the situation. It is balanced and considered, showing a sensible caution in accepting the point of view of any single organisation or group. The answer considers a range of evidence sources.
The answer makes balanced reference to both risk reduction and positive benefits.

3 (b)	**Notes for answers** The suggestions include monitoring: • fracking fluids left in the ground • fracking fluids that come back to the surface • the length of time that the risks remain after the well is abandoned • the effects of truck movements in the local area • the effects of flaring of gas produced from test wells • the treatment of waste fluids from fracking • noise pollution in the local environment, • the drilling process He is also insistent that a supervisory body, quite independent from the industry, should be given clear responsibilities for the monitoring. At present: • Health and Safety Executive (HSE) has responsibility during the work on the well but *only* for the safety of the workforce • Environment Agency (EA) has responsibility for monitoring and controlling water and air pollution but at a time of reduced funding and increased responsibility (especially for flood control) their opportunities to inspect and control are limited and difficult to enforce • The County Council will have to take on a lot of responsibility for long term supervision of abandoned sites, organising clean-up work if necessary • Water Authorities will also have responsibility for ensuring that water supplies are not polluted **Mark scheme** **Level 1** 1 – 4 marks (mid-point 3) At the bottom of the level the candidate identifies at least one relevant suggestion and makes a basic comment. At the top of the level a range of suggestions is recognised and basic comments are made, but there is no clear evaluation. **Level 2** 5 – 8 marks (mid-point 7) At the bottom of the level the candidate presents some clear relevant, discussion. As the number of points discussed increases and the clarity and depth of discussion increases the mark rises through the level. At the top of the level the discussion leads to some clear conclusion. **Level 3** 9-10 (mid-point 10) To reach level 3 the discussion must be balanced and based on careful and detailed analysis of the evidence available. The answer must show a good understanding of the geography of the situation. A range of concerns must be discussed in detail for the answer to reach the top of the level.	**[10 marks]**

4	**Notes for answers** Credit can be awarded for a range of approaches including: • Planning where to conduct enquiry • Planning how to select survey sample • Considering which questions to ask • Pre-testing the questions and adapting them if necessary • Considering how suitable the data would be for analysis and testing the hypothesis • Considering health and safety, including risk analysis **Mark scheme** **Level 1** 1 – 5 marks (mid-point 3) Stating a hypothesis can gain up to 2 marks if it is relevant and testable. Outlining methods without any clear justification can gain up to 2 marks. To reach the top of the level the answer must start to present a basic justification for the methods chosen. **Level 2** 6 – 10 marks (mid-point 8) Answer cannot rise above the bottom of the level (6 marks) without a clear and relevant hypothesis being stated. If an element of the method is outlined clearly and there is some justification the mark can enter level 2. If this links clearly to the hypothesis stated it can move up in the level. If the answer outlines at least two stages of the method and justifies them clearly it can move to the top of the level. **Level 3** 11 – 15 marks (mid-point 13) The hypothesis must be stated clearly and must include a clear and testable spatial element. The method must be clearly linked to testing the hypothesis, and must be described in detail with most aspects of the method being justified. At the top of the level the answer will show ability to think like a geographer and to apply geographical understanding in a practical situation.	**[15 marks]**