

GCE

GEOGRAPHY

GEO4B Geographical Issue Evaluation
Mark scheme

2030
June 2014

Version/Stage: 1.0 Final

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

- Various codes may be used such as: 'rep' (repeated material), 'va' (vague), 'NAQ' (not answering question), 'seen', etc.
- 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.

Other 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).

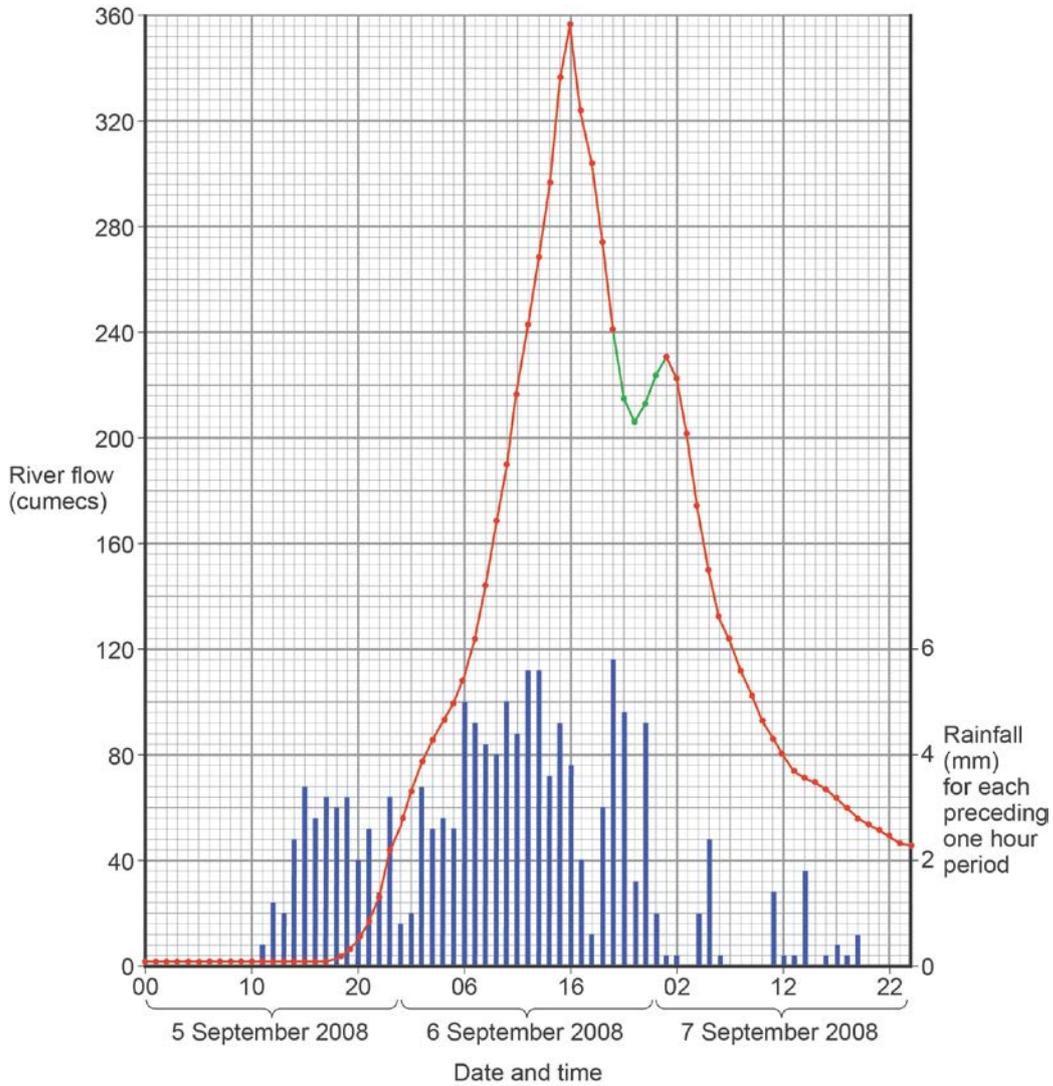
Unless indicated otherwise, always mark text before marking maps and diagrams. Do not give double credit for the same point in text and diagrams.

1 (a)

AO3 –
2

Notes for answers

(2 marks)



Mark scheme

The line is completed clearly and accurately = 2 marks

The line is complete. There are one or two little slips but the pattern is still easily recognisable. = 1 mark

<p>1 (b) AO1 – 2 AO2 – 2 AO3 – 4</p>	<p>Notes for answers</p> <p>The data measuring stations are about 10km apart, but that should not have a big effect because rainfall at Wallington is probably typical of rainfall throughout the basin.</p> <p>Rainfall intensity leading up to the peak which had been very high before the 1600 peak and also fairly high before the 0200 peak, but not quite so intensely high.</p> <p>The nature of the rocks and surface deposits in the drainage basin, which are stated to be fairly impermeable here, thus, shortening lag time.</p> <p>Slopes in the basin, which are quite steep along the edges of the incised flood plain.</p> <p>Vegetation and buildings in the basin. The area is not generally built-up and there is quite a lot of woodland on the steeper slopes, which would tend to slow down runoff and increase lag time.</p> <p>Accept that the Mitford hydrograph is representative of the area and therefore accept references to urbanisation in Morpeth (and the confluence of the tributaries above Morpeth) as appropriate. However, if any candidate realises that the flow was measured upstream of the town they should gain extra credit for that.</p> <p>Mark scheme</p> <p>Level 1 (1 – 4 marks)mid-point 3 A basic answer. There may be some general points but these are not developed clearly or in detail.</p> <p>There are few, if any, references to details from the local area</p> <p>The answer is not developed to form a coherent argument.</p> <p>Level 2 (5 – 8 marks)mid-point 7 A clear answer. Good understanding of the way factors work in this drainage basin.</p> <p>Must link the hydrograph to at least one influencing factor to get into L2. Must link the hydrograph to two factors to reach mid L2.</p> <p>Clear references are made to the way in which specific factors influence the lag time in <i>this</i> basin on <i>this</i> occasion.</p> <p>The answer is coherent and logically structured.</p>	<p>(8 marks)</p>
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<p>2 AO1 – 2 AO2 – 6 AO3 – 7</p>	<p>Notes for answers</p> <p>This question is about reasons for flooding. Ignore discussion of the effects.</p> <p>Human factors include:</p> <ul style="list-style-type: none"> • the construction of the estate on the flood plain • building drains and sewers from estates up the hill through Middle Greens • culverting of streams, leading to increased pressure of water and explosive effects on drain covers • seepage through the flood wall allowed water to flow back onto the land • general building work and drainage of agricultural land in the river basin, speeding run off and through flow • building the footbridge across the river downstream from the estate, which might have slowed down the river's flow • failure to provide sandbags quickly enough • lack of maintenance of the river bed and the flood walls, etc. <p>Of course we must give credit for built up nature of MG reducing infiltration but give much more credit to any answer making the point that it is on the flood plain so the water table is near the surface and infiltration would be very limited anyway!</p> <p>Physical factors include:</p> <ul style="list-style-type: none"> • the wet summer before this period • prolonged, heavy rainfall • generally impermeable nature of the soils in the basin • several tributaries meeting just above Morpeth • three short, flashy streams, running into the river in Morpeth flowing through the estate • steep sided valley, with a fairly narrow flood plain, This is a good opportunity for use of GRs. • etc. 	<p>(15 marks)</p>
	<p>Mark scheme</p> <p>Level 1 (1-6 marks) mid-point 4</p> <p>Relevant points are made about physical factors and/or human factors that played some part in causing the flood but these are basic and not developed in any detail. At this level confusion between physical/ human may be found.</p> <p>Any attempts to assess the relative importance of different factors are basic. They do not go much beyond the level of '...and so we can see both physical and human factors played a part.'</p> <p>Any reference to places are not developed with any accuracy.</p> <p>Any references to further research are basic and not developed in ways</p>	

	<p>that help show an understanding of the question.</p> <p>Level 2 (7-12 marks) mid-point 10</p> <p>Relevant points are made about both physical factors and human factors that played some part in causing the flood. Distinction between physical/human is made clear.</p> <ul style="list-style-type: none"> • If one of these factors is clearly developed the answer can rise above the bottom of the level. • If at least one physical factor and one human factor are developed and there is some clear attempt to assess their relative importance the answer can reach the middle of the level. • To reach the top of the level a range of factors must be considered and assessed clearly. <p>The answer makes specific references to place.</p> <p>The clear and relevant use of the candidate's own research can raise the mark up the level.</p> <p>Level 3 (13 – 15 marks) mid-point 14</p> <p>There is a detailed and relevant discussion of the issues and inter-relationships between physical and human geography.</p> <p>The candidate shows a detailed understanding of the area and of the processes leading to the flooding.</p> <p>The candidate thinks like a geographer.</p>	
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<p>3 (a)</p> <p>AO1 – 3</p> <p>AO2 – 6</p> <p>AO3 – 6</p>	<p>Notes for answers</p> <p>There had been a lot of careful preparation. Plans had been produced by NCC and CMBC and exercises had been held to work out coordinated strategies between these organisations and emergency services. The EA had clear responsibilities and strategies in place for fulfilling those responsibilities.</p> <p>Plans included:</p> <ul style="list-style-type: none"> • monitoring of rainfall and water levels by EA • issuing of warnings by EA • availability of Green & Clean team to try to enhance protection from flood water and evacuate people if, and when necessary • use of pleasure boats from the river for evacuation • places available for evacuees – rest centres and schools • setting up of communication centres to coordinate different groups • support from emergency services – fire, police, ambulance, air force, mountain rescue, etc., as and when needed. <p>Much of the plan worked well. However, the speed and height of the flood were not expected and the plans seemed to be insufficient to cope with the problems of 6 September. Furthermore, some aspects of the plan did not work. Also, there appears to have been some reluctance to act quickly enough for fear of seeming to ‘cry wolf’.</p> <p>Problems that ensued included:</p> <ul style="list-style-type: none"> • EA warnings seemed to be rather late in some areas. Study of the patterns of rainfall and river flow suggests that it should have been clear that flooding was a strong possibility some time before the warnings were sent out. • This might suggest that Met Office warnings to EA were not adequate – but if they were, that the EA was slow to respond. • Rainfall and local runoff seems to have blocked many roads more quickly than expected and so cut them off from emergency vehicles. • Some suggest that there were not enough sandbags and that the delivery of sandbags was erratic. • Boats that should have been available for use were not, because they were not prepared in time. • One EA flood warning was not delivered because of operator error, etc. <p>Note that since the 2008 floods the whole organisation of responsibility for flood management has been reorganised. This can be seen as a criticism of the division of responsibilities under the previous system.</p>	<p>(15 marks)</p>
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Mark scheme**Level 1 (1 – 6 marks) mid-point 4**

The answer selects relevant points from the AIB, which are used in a basic way. However, the answer is mainly descriptive with little, if any, discussion.

The candidate relies almost exclusively on the AIB with little or no demonstration of his or her own knowledge and understanding of rivers, their flooding and the possible responses to that flooding.

Any attempt to assess the response tends to be simplistic.

Level 2 (7 – 12 marks) mid-point 10

The answer makes clear use of material from the AIB and brings the candidate's own knowledge and understanding to bear on that material.

There is clear discussion of the issues, with a consideration of different aspects of preparation for and responses to the flooding.

Credit should be given for attempts to assess the quality of preparation and response, as long as this assessment is based on evidence.

Credit should be given for any relevant reference to the candidate's own research.

Level 3 (13 – 15 marks) mid-point 14

There is a detailed relevant discussion of a range of aspects of both preparation and response.

The answer makes an assessment of the preparation and/or response, and this is clearly based on a range of evidence.

The candidate thinks like a geographer.

<p>3 (b)</p> <p>AO1 – 3 AO2 – 6 AO3 – 6</p>	<p>Notes for answers</p> <p>A 'greater than 100 year flood' is a statistical concept. It is not a reliable measure. However, it is used by planners and accountants to help prepare for contingencies and to prioritise spending demands.</p> <p>The final bill for restoration of the town 'will be counted in tens of millions of pounds'. Insurance on homes and businesses will rise by 'up to 300%' and could seriously damage the town's commercial potential. The price of the proposed scheme is quoted at £17-21 million. There is scope for discussion of the balance between costs and benefits of the scheme. This discussion ought to take into account the likelihood of a recurrence of floods, of this severity.</p> <p>However, the financial cost does not take into account the personal distress and psychological costs suffered by residents.</p> <p>The '100 year flood' concept may not be valid anyway. It has been suggested that climate change might make storms and floods more frequent and of greater intensity. If so, the potential benefits of the scheme will become greater.</p> <p>It would be valid to discuss 'worth spending millions of pounds' from different points of view. There appears to be some political discussion as to how the costs should be shared between central and local government. If the central government's spending on flood control has to be limited, how do the needs of Morpeth compare with those of other parts of the country? Similar discussion of NCC's priorities would also be relevant.</p> <p>During the floods of winter/spring 2014 the Prime Minister stated that 'money would be no object' when helping people to recover from flooding. Although he later repeated this phrase he did avoid making any commitment to increasing the money spent, by central government, on flood defences. Nor did he make any pledges to restore the cuts that had been made to the amount available for long-term building of defences, nor to restore his cuts to Environment Agency funding.</p> <p>A significant minority of answers are referring to individual residents' views, gathered in the field or from secondary sources. These must be given credit unless they are very obviously 'made up'.</p>	<p>(15 marks)</p>
	<p>Mark scheme</p> <p>Level 1 (1 – 6 marks) mid-point 4</p> <p>The answer shows some attempt to discuss whether money should be spent but without showing any real understanding of either:</p> <ul style="list-style-type: none"> • the statistical concept of '100 year flood', • or of the possible influence of climate change and other factors on the likelihood of a recurrence of flooding, 	

	<ul style="list-style-type: none"> • or of local factors that might influence the decision. • or of national factors <p>Level 2 (7 – 12 marks) mid-point 10</p> <p>If one of the following list is clearly considered the answer reaches L2:</p> <ul style="list-style-type: none"> • clear understanding of the statistical concept of ‘the 100 year flood’, • the possible influence of climate change and/ or other factors on the likelihood of a recurrence of flooding, • local factors that might influence the decision • an understanding of the different needs of different parts of the town and of different parts of the basin as a whole • the country’s economic and political situation as a whole. • alternative possible ways of spending money on flood control • insurance/ downward spiral/ multiplier effect/ etc • cost/ benefit analysis • etc. <p>Use of the candidate’s own research should be given credit when this research is used clearly to support ideas expressed in the answer. For instance there might be some consideration of Morpeth in a national context, perhaps with evidence from case studies of other areas. In particular there might be reference to recent flooding in other parts of the country.</p> <p>Level 3 (13 – 15 marks) mid-point 14</p> <p>The answer is detailed and thorough. There is clear and relevant discussion leading to a conclusion supported with evidence.</p> <p>The candidate thinks like a geographer.</p>	
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<p>4</p>	<p>Notes for answers</p> <p>This must be about what has been done or what is being done, not about what ought to be done.</p> <p>In February 2012, the scheme was given the go-ahead with funding shared between Northumberland County Council and National government. In April 2012, plans were being finalised and the contracts for the various parts of the work have been put out to tender.</p> <p>By May 2014:</p> <ul style="list-style-type: none"> • New wall defence at Mitford Road was completed and work on restoring private gardens was nearing completion • Earth bank and flood wall at High Stanners was almost complete, with landscaping still to be finished • Building the flood wall at St Robert’s church was underway • Design of flood wall at Pretoria Avenue finalised 	<p>(5 marks)</p>
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	<ul style="list-style-type: none"> • Flood wall at Chantry completed and the wall is being faced with natural stone in keeping with local buildings • Middle Greens was originally to have a new earth bank built but now decided to use a flood wall instead – so planning permission is being sought • New walls under construction at west end of Low Stanners and in central section. Obstructive vegetation has also been removed from the bank along the whole Low Stanners section. • Small dam to hold back flood water on upper Cotting Burn is awaiting planning permission. New lockdown manhole covers (to prevent bursts due to excess water flow) to be put in place in this area. • New flood defence wall is being built along lower Cotting Burn by the developers of new housing. • Work is well underway on dam and large storage reservoir to retain floodwater at Mitford to the west of Morpeth. Due to finish at end of 2014. 6 culverts provided in this section to ensure that salmon, trout, eels and crayfish can still pass up and down stream safely. • New Morrisons has been built in Low Stanners, right on the flood plain. It has been built with a basement car park that can be used as a flood-water storage area and with flood walls designed to keep flood water out of the main building. <p>Note: due to the excellent and easily accessible information from the EA/ NCC many candidates are going straight to L2. This is not a problem!</p> <p>Note: look for evidence of things actually being “done” but remember that clear detail on the process of planning for the future is also about a form of “doing”.</p> <p>Mark scheme</p> <p>Level 1 (1 – 3 marks) mid-point 2 A basic answer which relies largely on projections from information in the AIB.</p> <p>Lists what has been done with only very limited, basic comment.</p> <p>Level 2 (4 – 5 marks) mid-point 5 The answer shows evidence of clear, coherent, up-to-date research. This research is developed, with comments.</p>	
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