edexcel

Mark Scheme (Results)

June 2011

GCSE Geography A 5GA2H
Natural Environment

Edexcel is one of the leading examining and awarding bodies in the UK and throughout the world. We provide a wide range of qualifications including academic, vocational, occupational and specific programmes for employers.

Through a network of UK and overseas offices, Edexcel's centres receive the support they need to help them deliver their education and training programmes to learners.

For further information, please call our GCE line on 0844 576 0025, our GCSE team on 0844 576 0027, or visit our website at www.edexcel.com.

If you have any subject specific questions about the content of this Mark Scheme that require the help of a subject specialist, you may find our **Ask The Expert** email service helpful.

Ask The Expert can be accessed online at the following link:

http://www.edexcel.com/Aboutus/contact-us/

Alternatively, you can contact our Geography Advisor directly by sending an email to Jonathan Wolton on:

GeographySubjectAdvisor@edexcelexperts.co.uk.

You can also telephone 0844 372 2185 to speak to a member of our subject advisor team.

June 2011
Publications Code UG028011

General Marking Guidance

- All candidates must receive the same treatment. Examiners must mark the first candidate in exactly the same way as they mark the last.
- Mark schemes should be applied positively. Candidates must be rewarded for what they have shown they can do rather than penalised for omissions.
- Examiners should mark according to the mark scheme not according to their perception of where the grade boundaries may lie.
- There is no ceiling on achievement. All marks on the mark scheme should be used appropriately.
- All the marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme. Examiners should also be prepared to award zero marks if the candidate's response is not worthy of credit according to the mark scheme.
- Where some judgement is required, mark schemes will provide the principles by which marks will be awarded and exemplification may be limited.
- When examiners are in doubt regarding the application of the mark scheme to a candidate's response, the team leader must be consulted.
- Crossed out work should be marked UNLESS the candidate has replaced it with an alternative response.
- Mark schemes will indicate within the table where, and which strands of QWC, are being assessed. The strands are as follows:

  i) ensure that text is legible and that spelling, punctuation and grammar are accurate so that meaning is clear

  ii) select and use a form and style of writing appropriate to purpose and to complex subject matter

  iii) organise information clearly and coherently, using specialist vocabulary when appropriate.

Question Number	Acceptable Answers	Reject	Mark
1 (a)(i)	Ireland		**1**
(a)(ii)	80km – (Allow answers between 75-105km)		**1**
(a)(iii)	Point mark Max 2 without evidence from Figure 1a 1 mark is available for evidence. Do not credit mirror image. E.g. Increased fetch causes greater potential for erosion (1), as wind can build bigger waves over a larger stretch of water (1). Evidence from figure 1a - Ireland has a bigger fetch therefore waves are likely to be more powerful therefore more erosive.		**3**
(a)(iv)	Max three without comparative statements. Max 2 if only reference to one of the required elements. Factors to include e.g. swash/backwash, frequency, energy, wavelength, period etc. Allow contrasting as well as comparative comments. E.g. Destructive waves have a greater backwash than swash (1) compared to constructive waves due to their higher energy (1) meaning that they can erode beaches (1). Constructive waves have a lower frequency (1) as a result of their longer wavelength (1) Destructive waves are plunging whereas constructive are surging (1). Destructive waves are higher (>1m) compared with constructive (1).		**4**
(b)(i)	Slumping - a rotational movement of land at the coast (1), triggered by saturation (1) Allow simple statements about water in cracks and downward movement of land. Credit explanations at 1 mark.		**2**
(b)(ii)	Loss of land (1) Destruction of property/infrastructure (1) Loss of animal habitats (1) Causes coastal recession (1)		**1**
(b)(iii)	Maximum 2 marks for description. Explanations credited at 1 mark each. Max 3 marks without a process or full sequence. Max 3 without suitable diagram. E.g. Spit – Movement of material along a coastline due to LSD. Occurs where there is a change in direction of the coastline. Over time build up of spit as more sediment is deposited offshore. May curve at end due to action of wind/waves. Formation of salt marsh due to spit protecting area from wave action.		**4**

Question Number	Acceptable Answers	Reject	Mark
(c)(i)	Point mark. Description required. Types of hard engineering on photograph - rock groynes and gabions, although will probably see a sea wall instead because not clear from photograph. Allow references to advantages and its purpose. E.g. Hard engineering is stronger (1) and more durable (1). The rock groynes help build beaches (1) which absorb the energy of the waves (1). They are cost effective in the long term (1).		**3**

Question Number	Indicative content	
1(cii)	Candidates should focus on methods to reduce the effects of coastal flooding, e.g. forecasting systems, building design, land-use planning and education. Specific means something like the name of a scheme, a date or a number. Accept management schemes if relate to flooding. Other schemes for example to do with cliff recession max level 1.	
Level	Mark	Descriptor
	0	No rewardable material
Level 1	1-2	A basic answer which has simple descriptive statements about reducing coastal flooding.
Level 2	3-4	To reach level two there should be explanation about an example or a specific point. The top of the level requires at least two specific points which could be part of one or more examples or a number of explanations or a specific point and an explanation.
Level 3	5-6	An explicit answer with a range of specific and explained points which could be from different examples.

Question Number	Acceptable Answers	Reject	Mark
2 (a)(i)	Plunge pool		**1**
(a)(ii)	25m (Allow 23-27m)		**1**
(a)(iii)	Max 2 without explanation. Max 2 without evidence from diagram. 1 mark is available for evidence. E.g. Erosion of softer rock leading to the overhang of harder rock ledge (1) Attrition of collapsed material in plunge pool (1) Hydraulic pressure on the plunge pool floor (1) Erosion over time leading to waterfall recession and gorge formation (1)		**3**
(a)(iv)	Max three without comparative statements. Max 2 if only reference to one of the required elements. Likely focus - watershed/mouth/source/confluence or tributary **OR** could look at the changing channel characteristics in the upper and lower stages of the river. Max 2 for a list of comparative landforms. E.g. Watershed is the boundary of the drainage basin usually an area of highland, often found in the upper stage (1), whereas the mouth where the river meets the sea is in the lower stage (1). Near the source the velocity is slower (1), compared to the mouth where it has increased (1)		**4**
(b)(i)	Slumping - a rotational movement along the river bank (1), triggered by saturation of banks(1) Allow simple statements about water in cracks and downward movement of land. Credit explanations at 1 mark.		**2**
(b)(ii)	Loss of land (1) Damage to property (1) Damage to river defences (1) River blockage (1) Loss of animal habitat (1) Material in the river (1)		**1**
(b)(iii)	Maximum 2 marks for description. Explanations credited at 1 mark each. Max 3 marks without a process or full sequence. Max 3 without suitable diagram. E.g. Levees Formed during flood events when the river breaches its banks. Water loses energy as it leaves the channel therefore deposition occurs. Larger material is deposited first nearest bank. Sequential deposition. Over time this material builds up to form levees.		**4**

Question Number	Acceptable Answers	Reject	Mark
(c)(i)	Description required. Point mark. Roads submerged (1), cars stranded (1), homes flooded/damaged (1), roads/routes blocked due to flood waters (1). Any effect is acceptable if from photograph.		**3**

Question Number	Indicative content	
2(c)(ii)	Candidates should focus on methods to reduce the effects of river flooding, e.g. forecasting systems, building design, land-use planning and education. Specific means something like the name of a scheme, a date or a number. Accept management schemes if relate to flooding.	
Level	Mark	Descriptor
	0	No rewardable material
Level 1	1-2	A basic answer Simple descriptive statements about the effects of flooding.
Level 2	3-4	A clear answer To reach level two there should be explanation about an example or a specific point. The top of the level requires at least two specific points which could be part of one or more examples or a number of explanations or a specific point and an explanation.
Level 3	5-6	An explicit answer with a range of specific and explained points which could be from different examples.

Question Number	Acceptable Answers	Reject	Mark
3 (a)(i)	50m – (Allow answers between 45-75m)		**1**
(a)(ii)	South (Accept SE)		**1**
(a)(iii)	Medial moraine		**1**
(a)(iv)	Max **2** for description. Max **2** without process. E.g. U-Shaped valley As a glacier bulldozes through area, due to gravity, it erodes the valley sides through abrasion/plucking. Abrasion causes rock to be scoured from the valley sides. Over time this leads to the formation of a steep sided valley and flat valley bottom.		**3**
(a)(v)	Max two without comparative statements. Comparative statements likely to include location of process or the action. Lodgement is due to glacial movement whereas ablation is specifically due to recession/melting. Lodgement occurs where material beneath the glacier is pressed into the bedrock (1) due to the advance/retreat of the glacier (1). Ablation is where material is dropped by the glacier as it melts (1). This occurs mainly at the snout of the glacier (1). Ablation can occur on the surface of the glacier (sublimation) (1).		**4**
(b)(i)	Outline required. Credit explanations at 1 mark. E.g. Freeze thaw weathering occurs when temperatures fluctuate diurnally around zero (1). Freezing and thawing causes water to expand and contract (1) leading to rock breaking apart (1). Creation of scree (1).		**2**
(b)(ii)	Creates scree/talus (1) Creates sediment for glacier to transport (1) Leads to mountains becoming eroded (1) Jagged rocks (1)		**1**
(b)(iii)	Maximum 2 marks for description. Explanations credited at 1 mark each. Max 3 marks without a process or full sequence. Max 3 without suitable diagram. E.g. - Arêtes: Explanation of corrie formation leading to steep back wall. Formation of back to back corries forming to produce a steep sided, knife-edged ridge. Processes to include freeze thaw, plucking and abrasion.		**4**
(c)(i)	Point mark. Skiers disturbing snow due to skiing (1) Noise made disturbs snow leading to avalanche (1) People ignoring warning signs (1)		**2**

Question Number	Indicative content	
3 (cii)	Candidates should focus on methods to reduce effects of avalanches, e.g. forecasting systems, building design, land-use planning and education. Specific means something like the name of a scheme with a date or a number. Accept management schemes if relate to avalanches	
Level 1	1-2	A basic answer which has simple descriptive statements about the effects of avalanches.
Level 2	3-4	To reach level two there should be explanation about an example or a specific point. The top of the level requires at least two specific points which could be part of one or more examples or a number of explanations or a specific point and an explanation.
Level 3	5-6	An explicit answer with a range of specific and explained points which could be from different examples.

Question Number	Acceptable Answers	Reject	Mark
4 (a)(i)	Y		**1**
(a)(ii)	Point mark. Plates are moving apart (1) Use of data (1) Different rates of movement (1) Faster at Y (1)		**3**
(a)(iii)	1		**1**
(a)(iv)	Maximum 2 marks for description. Explanations credited at 1 mark each. Max 3 marks without a process or full sequence. E.g. - Formation of volcanoes at DPB: Magma rises due to convection currents, leading to pressure and doming of the crust (oceanic). Magma rises through the weaknesses in the crust. Eventually (low viscosity) magma erupts onto the surface. The continued movement of plates pulls the plates apart leading to more effusive eruptions.		**4**
(a)(v)	Max three without comparative statements Max 2 if only reference to one of the required elements. Convergent characteristic features to include fold mountains, subduction zones, trenches, volcanoes (explosive) and earthquake activity. Conservative creates rifts or faults leading to lateral movement of the ground and earthquakes. E.g. At a convergent plate boundary plates subduction can lead to earthquake formation (1) due to pressure build up between two plates (1). Earthquakes also occur at conservative plate boundaries on fault lines (1), but due to tension (1). Subduction of the oceanic plate leads to magma formation and explosive volcanic eruptions (1). No magma is created at conservative plate boundaries (1) therefore there are no volcanic eruptions (1).		**4**

Question Number	Acceptable Answers	Reject	Mark
(b)(i)	Point mark. Max 2 without explanation. Areas may be popular for tourism e.g. Turkey (1) Earthquakes could cause landslides which expose mineral resources which can be mined (1) Areas may have and emergency plans (1) therefore residents perceive safety (1) People feel it may not happen to them (1) Buildings are made to a resistant level therefore perception of safety (1) Family and friends (1) Jobs / work (1)		**3**
(c)(i)	Point mark. Allow extra credit for development. Land use planning (1) Building design (1) Evacuation (1) Food and medical (1)		**3**

Question Number	Indicative content	
4(c)(ii)	Candidates should focus on effects of either volcanic eruption or an earthquake. They should attempt to explain the effects in relation to the event. Specific means something like the name of a scheme, a date or a number.	
Level	Mark	Descriptor
	0	No rewardable material
Level 1	1-2	A basic answer which has simple descriptive statements about the effects of an earthquake or a volcanic eruption.
Level 2	3-4	To reach level two there should be explanation about an example or a specific point. The top of the level requires at least two specific points which could be part of one or more examples or a number of explanations or a specific point and an explanation.
Level 3	5-6	An explicit answer with a range of specific and explained points which could be from different examples.

Question Number	Acceptable Answers	Reject	Mark
5 (a)(i)	Correctly drawn sections of a pie chart – must have all three correct (and labelled) for 2 marks		**2**
(a)(ii)	Max 2 for description. Credit specifics. E.g. People have more disposable income (1) this enables a more materialistic lifestyle (1). Products purchased have a lot of packaging which contributes to waste (1). People are more wasteful as it is often cheaper to purchase a new item rather than fix an item (1)		**4**
(a)(iii)	Credit explanations where given at 1 mark. Credit examples at 1 mark. Max 2 list Recycling – description of facilities (1) Incineration – an outline of the process (1) Landfill – an outline of what or where (1)		**4**
(b)(i)	Sizewell/Oldbury/Heysham/Hartlepool/Torness/Hunterson		**1**
(b)(ii)	Point mark. Max 3 without map evidence. Such as names or numbers. I mark available for map evidence. Coastal areas (1) Mainly in the south (1) None found inland (1) Areas of clustered N P stations e.g. in the South east and East of England (1) Numbers within different areas of the UK e.g. 2 found in Wales (1) Might refer to data e.g. size or closure date (1)		**4**
(c)	Max 2 without explanation. Types to include: solar, wind, HEP geothermal etc. E.g. Disadvantages Not a suitable site to construct or generate electricity (1) Environmental issues such as noise (1) Can lead to destruction of ecosystems e.g. biofuels (1) Low aesthetic value upsets local people (1) Expect references to specific types.		**4**

Question Number	Indicative content	
5(d)	Must focus on UK reduction of energy wastage at any scale. Main focus should not be individual Marks will be awarded based on QWC – see beginning of mark scheme. Specific means something like the name of a scheme, a date or a number.	
Level	Mark	Descriptor
	0	No rewardable material
Level 1	1-2	A basic answer Simple descriptive statements about reducing energy wastage or focus on the individual
Level 2	3-4	A clear answer To reach level two there should be explanation about an example or a specific point. The top of the level requires at least two specific points which could be part of one or more examples or a number of explanations or a specific point and an explanation.
Level 3	5-6	An explicit answer with a range of specific and explained points which could be from different examples.

Question Number	Acceptable Answers	Reject	Mark
6 (a)(i)	All three sections of pie chart to be completed (and labelled) for full marks		**2**
(a)(ii)	Max 2 for description. E.g. HIC lifestyle is water abundant e.g. showering, use of water greedy appliances (1). Whereas in an LIC there could be a shortage of water (1). It could be unequally distributed (1), therefore people may have limited access (1).		**4**
(b)(i)	South West or North west or North east		**1**
(b)(ii)	Max 3 without map evidence. Point mark. In south east and south of England there is serious water supply problems (1) Groups/clustered of serious water supply problem areas/ moderate water supply problem areas. (1) Water supply problem areas in bands (1). As go north there are lower water supply problem areas except South west (1) Use of evidence (1).		**4**
(b)(iii)	Max 2 without explanation. Credit specifics max 1 E.g. Low annual rainfall in south east/south (1) therefore greater water supply problems. Major cities are located in the South/SE areas (1), which result in higher demand therefore more series water supply problems (1). For example more people consume water for showering (1). Most arable land in South East/East Midlands (1). Low water supply problems in North West/South West due to relief rainfall (1).		**4**
(c)	Max 2 for description. Must refer to industry and agriculture for max. Credit developed points. Allow 1 mark for specific detail. Can refer to any relevant method in industry e.g. Tap restrictors/push taps/shower regulators/push-button showers/water metering. Agriculture – optimising crop irrigation, sprinkler systems, drip irrigation, creation of furrows to limit run off.		**4**

Question Number	Indicative content	
6(d)	Can refer to any water management scheme from either HIC or LIC. Should make clear the reasons for the scheme. Marks will be awarded based on QWC. **–** see beginning of mark scheme. Specific means something like the name of a scheme, a date or a number. Max level 1 for incorrect case studies.	
Level	Mark	Descriptor
	0	No rewardable material
Level 1	1-2	A basic answer Simple descriptive statements about a water management scheme
Level 2	3-4	A clear answer To reach level two there should be explanation about an example or a specific point. The top of the level requires at least two specific points which could be part of one or more examples or a number of explanations or a specific point and an explanation.
Level 3	5-6	An explicit answer An explicit answer with a range of specific and explained points.

Further copies of this publication are available from
Edexcel Publications, Adamsway, Mansfield, Notts, NG18 4FN

Telephone 01623 467467
Fax 01623 450481
Email publication.orders@edexcel.com
Order Code UG028011 June 2011

For more information on Edexcel qualifications, please visit
www.edexcel.com/quals

Pearson Education Limited. Registered company number 872828
with its registered office at Edinburgh Gate, Harlow, Essex CM20 2JE