

Mark Scheme (Results)

Summer 2015

Pearson Edexcel GCSE in Geography A
(5GA2F/01)

Unit 2: The Natural Environment

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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.

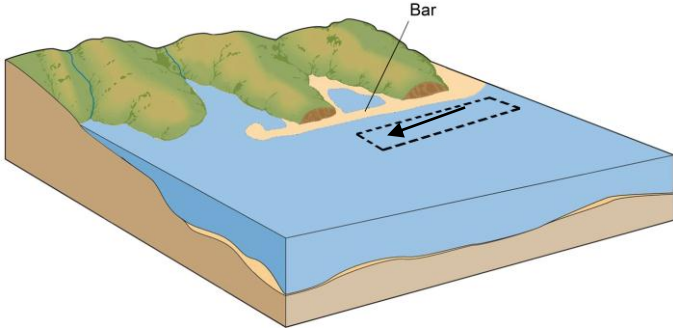
Placing a mark within a level mark band

- The instructions below tell you how to reward responses within a level. Follow these unless there is an instruction given within a level. However, where a level has specific guidance about how to place an answer within a level, **always** follow that guidance.
- **2 mark bands**
Start with the presumption that the mark will be the higher of the two.
An answer which is poorly supported gets the lower mark.
- **3 mark bands**
Start with a presumption that the mark will be the middle of the three.
An answer which is poorly supported gets the lower mark.
An answer which is well supported gets the higher mark.
- **4 mark bands**
Start with a presumption that the mark will be the upper middle mark of the four.
An answer which is poorly supported gets a lower mark.
An answer which is well supported and shows depth or breadth of coverage gets the higher mark.

- 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.*

Spelling, Punctuation and Grammar Marking Guidance

- The spelling, punctuation and grammar assessment criteria are common to GCSE English Literature, GCSE History, GCSE Geography and GCSE Religious Studies.
- All candidates, whichever subject they are being assessed on, must receive the same treatment. Examiners must mark the first candidate in exactly the same way as they mark the last.
- Spelling, punctuation and grammar marking criteria should be applied positively. Candidates must be rewarded for what they have demonstrated rather than penalised for errors.
- Examiners should mark according to the marking criteria. All marks on the marking criteria should be used appropriately.
- All the marks on the marking criteria are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the marking criteria.
- Examiners should be prepared to award zero marks if the candidate's response is not worthy of credit according to the marking criteria.
- When examiners are in doubt regarding the application of the marking criteria 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.
- Handwriting may make it difficult to see if spelling, punctuation and grammar are correct. Examiners must make every effort to assess spelling, punctuation and grammar fairly and if they genuinely cannot make an assessment, the team leader must be consulted.
- Specialist terms do not always require the use of complex terminology but the vocabulary used should be appropriate to the subject and the question.
- Work by candidates with an amanuensis, scribe or typed script should be assessed for spelling, punctuation and grammar.
- Examiners are advised to consider the marking criteria in the following way:
 - How well does the response communicate the meaning?
 - What range of specialist terms is used?
 - How accurate is the spelling, punctuation and grammar?

Question Number	Answer	Mark
1(a) (i)	<p>Arrow should be in the correct direction - allow arrows which are outside of the box.</p> 	1

Question Number	Answer	Mark
1(a) (ii)	D - Spit	1

Question Number	Answer	Mark
1(a) (iii)	A - Waves lose energy	1

Question Number	Answer	Mark
1(b)	<p>Longshore drift transports sediment along the coastline.</p> <p>When there is a change in the direction of the coastline, this material is deposited</p> <p>If the spit continues to grow across a bay it will form a bar.</p> <p>The bar may block the bay and form a lagoon behind it.</p>	4

Question Number	Answer	Mark
1(c)	<p>Fetch: A larger fetch (1) can lead to bigger/destructive waves (1) which could cause more erosion (1) at the base of cliffs/remove beach material (1) OR Smaller fetch leads to low energy/constructive waves (1) which leads to less erosion (1)</p> <p>Weathering: Increased weathering breaks the cliff down (1) which can lead to greater cliff instability (1) leading to increased cliff recession (1) OR Less weathering leads to more stable cliffs (1) therefore a lower rate of recession.</p> <p>Allow reference to how weathering causes recession, for example allow an outline of each type of weathering process, e.g. freeze thaw weathering expands leads to water expansion (1) causing cliff to crack/break (1).</p> <p>No credit for named weathering processes</p> <p>Maximum two marks if only one factor given.</p> <p>Candidate must outline both elements of the question for maximum.</p>	<p>4</p> <p>(1+1)+ (1+1)</p>

Question Number	Answer	Mark
1(d)	<p>Influence of geology on coastal landforms:</p> <ul style="list-style-type: none"> • Rock type • Orientation of the rock • Strength of rock – composition e.g. jointing <p>Softer rock causes some area of the coast to be eroded faster (1) because it cannot withstand the force of the wave. (1) This may lead to the formation of headlands, with harder rock and bays with softer rock (1)</p> <p>Joints/Cracks in cliffs can lead to the formation of a cave (1) due to the sea gradually widening the crack through erosion. This could widen to form an arch (1). Igneous rocks will erode at a slower rate than sedimentary rocks (1)</p> <p>Maximum 2 if no reference to landforms.</p> <p>Maximum 3 marks with reference to one landform.</p> <p>Maximum 3 marks without explanation</p>	<p>4</p> <p>(1+1+1) +1</p> <p>OR</p> <p>(1+1)+ (1+1)</p>

Question Number	Answer	Mark
2(a) (i)	B – A259	1

Question Number	Answer	Mark
2(a) (ii)	B 40 km ²	1

Question Number	Answer	Mark
2(a) (iii)	D - When discharge is greater than the channel capacity	1

Question Number	Answer	Mark
2(a)(iv)	<p>The flooded area is smaller on the chalk than on the clay.</p> <p>Chalk allows water to pass through it because it is permeable.</p> <p>Chichester is more likely to flood as it is found on clay.</p> <p>Flooding happens when there is less infiltration and greater runoff.</p>	4

Question Number	Answer	Reject	Mark
2(b)	<p>Note- The reasons below are common in both the upper and middle stages of the river Candidate can only be credited for reference to one stage in river.</p> <p>The channel is shallower than (what would be expected) downstream (1) this can be seen as rocks are visible through the flow (1)</p> <p>There is evidence of larger boulders (1) – which we could be less likely to find downstream (1) as these have not yet been eroded (1) (by attrition (1)).</p> <p>Large sediment bar (1) – suggested evidence of both erosion and deposition (1) – river does not have enough energy to carry away the sediment (1) (suggested variable seasonal discharge (1)).</p> <p>The river has started meandering (1) – evidence of a steeper river cliff and slip off slope (1).</p> <p>Rapids – as the water passes larger boulders (1) – less common in the lower course.</p> <p>River is set in steep sided valley (1) which suggests further upstream as the rock may be harder (1) or not yet eroded (1) or higher altitude nearer the source (1).</p> <p>Credit the identification of characteristics even if written next to only one part of the answer.</p> <p>Candidate must give two outlines for maximum marks.</p> <p>Candidate must outline both features given for max marks. An outline is a brief explanation or a developed idea.</p> <p>Maximum of 2 marks for descriptions which are not developed.</p>	<p>Lower course and course characteristics</p> <p>Landform formation</p>	<p>4</p> <p>(1+1)</p> <p>+</p> <p>(1+1)</p>

Question Number	Answer	Mark
2(c)	<p>Effects of flooding reduced through planning and education:</p> <p>Planning</p> <ul style="list-style-type: none"> • Building away from floodplains • Preparing the local populations with hazard maps and information packs • Installing defences to overcome known danger points. • Evacuation procedure in place if flood escalates <p>Education</p> <ul style="list-style-type: none"> • Improved understanding in the local population to help them now what to do in a flood • Develop understanding through leafleting and internet by organisations such as DEFRA/ EA • Learn about flooding in school education (credit what they may learn) <p>Credit other sensible suggestions.</p> <p>Do not credit duplicate points across the two categories. e.g. Leaflets issued by the local council/DEFRA (1) to improve the understanding in the local population (1) therefore they know what to do in the event/or lead up of a flood. Install defences in areas prone to flooding (1). This could include temporary floodwalls or placing sandbags in front of property (1) which will result in less water affecting properties (1). An effective evacuate programme (1) will reduce potential deaths and injuries (1) as people will not be near danger if the river bursts its banks (1) Houses could be built away from the floodplain to avoid flooding (1) or homes in flood risk area could have important items moved to a higher level to avoid flood damage (1).</p> <p>Maximum of 3 without reference to a place example or specific scheme/strategy/organisation.</p> <p>Do not give credit for examples.</p> <p>Must refer to both planning and education for maximum.</p>	<p>4</p> <p>(1+1) + (1+1)</p> <p>or</p> <p>(1+1) + 1+1</p>

Question Number	Answer	Mark
3(a) (i)	D – North west to south east	1

Question Number	Answer	Mark
3(a) (ii)	C – Most are found within the crater (caldera)	1

Question Number	Answer	Mark
3(b)	A. Movement on a fault line	1

Question Number	Answer	Mark
3(c)	<p>Earthquakes are measured with a seismometer.</p> <p>These instruments detect the energy released during an earthquake.</p> <p>They help scientists understand the earthquake event.</p> <p>This information is used to reduce the impact of earthquakes.</p>	4

Question Number	Answer	Mark
3(d)	<p>Planning Identify areas that are more at risk from earthquakes (1) through hazard mapping (1) by assessing the geology of the area (1) which will identify potential areas to improve protection (1).</p> <p>Identify how buildings can be made more safe (1) and then encourage tenants to make the necessary adjustments (1), e.g. install shatterproof glass or attach furniture to the walls to stop it moving (1)</p> <p>Ensure that infrastructure is secure (1), e.g. automatic gas pipe shut down systems to prevent fires (1).</p> <p>Education Practise emergency drills (1) to ensure that people know what to do in the event of an earthquake (1) and so that they know the emergency procedure post-earthquake (1), for example 1st September in Japan as a memorial to the Great Kanto Earthquake 1923 (1).</p> <p>Ensure that people are aware of the precautions to take at home (1), through a media program or teaching (1). This may include emergency hazard kits (1) with torches, clean water, food and first aid in case of isolation (1).</p> <p>Candidate must outline both planning and education for maximum marks.</p>	<p>4</p> <p>(1+1)+ (1+1)</p>

Question Number	Answer	Mark
3(e)	<p>Description only is required.</p> <p>Ocean trenches form when the two converging plates meet (move towards each other) (1). This occurs as a result convection currents (1). The denser plate (often the oceanic) subducts beneath the other plate (1). Parts of the oceanic plate melt as it nears the mantle (1). The melt rises through cracks in the crust (1). This melt is under great pressure so eruptions are explosive (1). Forming composite type volcanoes (1).</p> <p>Give marks for extended descriptions.</p> <p>Must refer to magma erupting out of the ground for max marks.</p> <p>Allow up to 2 marks for either generic comments (which are non-specific) or relevant comments but in the wrong context e.g. divergence or hotspots e.g. magma rising.</p>	<p>4</p> <p>1+1+1+1</p>

Question Number	Answer	Mark
4(a) (i)	C - To use items again	1

Question Number	Answer	Mark
4(a) (ii)	B -Less landfill space is needed.	1

Question Number	Answer	Mark
4(a) (iii)	D - washing machine	1

Question Number	Answer	Mark
4(b)	<p>Point mark descriptions of cartoon:</p> <p>The cartoon suggests a consumer society/materialistic view (1) "throw-away" society (1) as shown by the bin encouraging people to throw away last month's items (1) Encouraging people to buy new electronics/gadgets (1) People can afford to replace rather than fix (1) Technology becomes obsolete very quickly (1)</p> <p>Allow 1 mark for development through an example</p> <p>Accept other reasonable ideas linked to the cartoon.</p>	<p>3</p> <p>1+1+1</p>

Question Number	Answer	Mark
4 (c)(i)	D - cinema	1

Question Number	Answer	Mark
4(c)(ii)	<ul style="list-style-type: none"> • Excessive packaging • Disposable packaging • Uneaten food • Issuing of items with single use • High turn-over of customers • Limited shelf life of warm food • Cheaper to throw away packaging than to wash up plates etc. 	1

Question Number	Answer	Mark
4(d)	<p>Types of waste management to include: Landfill, incineration, recycling, exporting, composting</p> <p>eg Landfill (1) is where waste is buried in the ground (1). This allows large amounts of waste to be managed (1) and is commonly used for domestic and municipal waste (1). Allow credit for collection and processing of waste.</p> <p>Incineration (1) is where waste (organic) material is burnt/combusted (1). Often hazardous waste or industrial waste which cannot be sent to landfill is incinerated (1). Incineration can be linked to energy recovery (through heat) (1).</p> <p>Recycling (1) is where materials are turned into new products (1).</p> <p>Compositing (1) of organic waste (1).</p> <p>Allow one mark for named method. Do not credit reasons for the method.</p>	2 (1+1)

Question Number	Answer	Mark
4(e)	<p>An example of energy waste in the household (1) with some development (1)</p> <p>e.g. Single glazed windows (1) allow heat to escape more easily (1) leading to higher heating bills (1)</p> <p>Lack of loft insulation/ allow heat to escape more easily (1) leading to higher heating bills (1)</p> <p>Doors and windows are left open (1) so heat energy escapes from the home (1)</p> <p>Thermostats are set too high (1) so energy is used where it is not needed (1)</p> <p>Leaving lights/electrical items on/on standby (1) uses more energy than needed (1) making energy bills more expensive (1)</p> <p>(Allow only one mark for idea of items left on).</p> <p>Allow 1 mark for statistics on heat loss.</p> <p>Accept all relevant answers but no credit for solid waste</p>	<p>4</p> <p>(1+1)+ (1+1)</p> <p>OR</p> <p>(1+1+1) +1</p> <p>OR</p> <p>1+1+ (1+1)</p>

Question Number	Indicative content	
*4 (f) QWC i-ii-iii	<p>Question is about renewable energy – all reference to non-renewable energy measures are not worth credit.</p> <p>Answers should focus on how the development of the resource impacts people.</p> <p>The focus can be any renewable energy source to include HEP, solar, tidal, wind, wave or geothermal.</p> <p>Impacts can be positive and negative</p> <p>Impacts on people will depend on the type, general examples include:</p> <ul style="list-style-type: none"> • Disruption to view (aesthetic impact) • Loss of land • Impact on flora and fauna • Increased pollution 	
Level	Mark	Descriptor
0	0	No acceptable response
1	1–2	One or two ideas partially related to renewable energy supply. Examples likely absent. Largely ignores the impact on the environment. Very basic use of geographical terminology –communication not always clear
2	3–4	Description of one or two ideas related to the impact of a renewable energy source on the environment. Examples may be included, but are of limited relevance to the answer. Basic use of geographical terminology – communication not always clear.
3	5–6	One partially explained point and descriptive points on the impact of renewable energy source on the environment. For top of level expect two or more partially explained points, or one well developed point. Exemplification may be used, especially in the top of this band. Generally clearly communicated but with mixed use of geographical terminology.
SPaG Level 0	0	Errors severely hinder the meaning of the response or candidate does not spell, punctuate or use the rules of grammar within the context of the demands of the question.
SPaG Level 1	1	<i>Threshold performance</i> Candidate spells, punctuates and uses the rules of grammar with reasonable accuracy in the context of the demands of the question. Any errors do not hinder meaning in the response. Where required, they use a limited range of specialist terms appropriately.

SPaG Level 2	2-3	<i>Intermediate performance</i> Candidate spells, punctuates and uses the rules of grammar with considerable accuracy and general control of meaning in the context of the demands of the question. Where required, they use a good range of specialist terms with facility.
SPaG Level 3	4	<i>High performance</i> Candidate spells, punctuates and uses the rules of grammar with consistent accuracy and effective control of meaning in the context of the demands of the question. Where required, they use a wide range of specialist terms adeptly and with precision.

Question Number	Answer	Mark
5(a) (i)	B -Water found underground in soil and rock.	1

Question Number	Answer	Mark
5(a) (ii)	B - The water supply can be easily managed.	1

Question Number	Answer	Mark
5(a) (iii)	C - watering golf courses	1

Question Number	Answer	Mark
5(b)	<p>Candidates can gain credit by describing what the appearance or purpose.</p> <p>A dam/Hoover Dam is shown in Photograph D (1)</p> <p>It is built across a step sided canyon (valley) (1)</p> <p>The dam is very tall (1) (over 30m)</p> <p>Allow descriptive comments on how the dam looks e.g. made of concrete.</p> <p>Water is stored behind the dam in a reservoir(1)</p> <p>Water can be regulated from the reservoir to prevent drought (1)</p> <p>Can be supplied to local people through pipes (1)</p> <p>This helps dry areas regulate water in periods of drought (1)</p> <p>Rivers and rainwater flow into the dam (1) and water is slowly released (1) and can be used for drinking (1)</p> <p>Allow one mark credit for either dam or reservoir – not both</p> <p>Do not allow credit for references to descriptions which do not relate to water supply.</p>	<p>3</p> <p>1+1+1</p> <p>OR</p> <p>(1+1)+1</p>

Question Number	Answer	Mark
5(c) (i)	B – India	1

Question Number	Answer	Mark
5(c) (ii)	<p>Credit any relevant reason</p> <ul style="list-style-type: none"> • Showering society • Non-essential use e.g. watering gardens • Leisure activities • Large population • As people can afford its use • Have technology to clean it (so higher use) <p>Accept other reasonable ideas</p> <p>Do not credit just reference to domestic, industrial or agricultural</p>	1

Question Number	Answer	Mark
5(c) (iii)	<p>Problems can include: Pipe leakage, spatial variability, or seasonal variability in precipitation etc.</p> <p>Old Victorian pipe system in London often leaks (1) therefore amount sourced is not equal to the amount used (1).</p> <p>In some parts of HICs there is a water deficit (1) therefore water has to be transferred from other areas (1).</p> <p>Some parts of UK have seasonal rainfall (1) therefore if there is a high demand they import water (1)</p> <p>Contamination (1)</p> <p>Allow 'problems' associated with consumption/use.</p>	2 (1+1)

Question Number	Answer	Mark
5(d)	<p>Domestically; Use of water meters Hose pipe bans Use of water hippos</p> <p>e.g. Water meters are used to give people an indication of how much water is used (1). This encourages people to use less water (1), or on which use to cut down on (1).</p> <p>People install water hippos in their toilet (1) which reduces the amount of water used in a flush (1) these go into cisterns and reduce the volume of the flush (1)</p> <p>Pricing (1) so it becomes very expensive to waste / consume lots of water (1)</p> <p>Leaflets and campaigns from Water Companies (1) which tell people about how they can reduce consumption (1)</p> <p>Water butts (1) which collect waste water from the roof (1) which can be used to water the garden</p> <p>Maintenance/repairs on water based appliances (tap/dishwasher etc.) (1) to prevent waste water (1)</p> <p>Shower flow "reducers" / timers (1) Shower timers are used, to limit shower times to 4 or 5 minutes (1), this stops people standing in the shower for prolonged periods and wasting water (1).</p>	<p>4</p> <p>(1+1)+ (1+1)</p> <p>OR</p> <p>(1+1+1) +1</p>

Question Number	Indicative content	
*5 (f) QWC i-ii-iii	<p>This question requires the candidate to focus on appropriate technology – i.e. small scale approaches, which have a community focus and are sustainable.</p> <p>They include: Boreholes Tube wells Gravity fed systems Small scale dams Water conservation methods Water recycling systems</p> <p>Examples are places where the approaches are used.</p>	
Level	Mark	Descriptor
0	0	No acceptable response
1	1–2	One or two ideas partially related to water supply. Examples likely absent. Largely ignores the idea of appropriate technology. Very basic use of geographical terminology – communication not always clear.
2	3–4	One or two ideas described in relation to the impact of how appropriate technology is used for water supply in LICs. Examples may be included, but are of limited relevance to the answer. Basic use of geographical terminology – communication not always clear.
3	5–6	One partially explained point on how appropriate technology is used for water supply in communities in LICs. For top of level expect a range of partially explained points, or one well developed point (on one or more types of AT). Needs to have exemplification in the top of this band. Generally clearly communicated but with mixed use of geographical terminology.
SPaG Level 0	0	Errors severely hinder the meaning of the response or candidate does not spell, punctuate or use the rules of grammar within the context of the demands of the question.
SPaG Level 1	1	<i>Threshold performance</i> Candidate spells, punctuates and uses the rules of grammar with reasonable accuracy in the context of the demands of the question. Any errors do not hinder meaning in the response. Where required, they use a limited range of specialist terms appropriately.
SPaG Level 2	2-3	<i>Intermediate performance</i> Candidate spells, punctuates and uses the rules of grammar with considerable accuracy and general control of meaning in the context of the demands of the question. Where required, they use a good range of specialist terms with facility.

SPaG Level 3	4	<i>High performance</i> Candidate spells, punctuates and uses the rules of grammar with consistent accuracy and effective control of meaning in the context of the demands of the question. Where required, they use a wide range of specialist terms adeptly and with precision.
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