

Mark Scheme (Results)

Summer 2012

GCSE Geography A 5GA2H
Natural Environment

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Question Number	Acceptable Answers	Reject	Mark
1 (a)(i)	<p>Point mark Credit straight lifts from text.</p> <p>Barriers put in as an extra (1) Drop of 5 metres (1) Loss of land (1) Disruption to traffic (1) Threat of a future landslide (1) Traffic is controlled by lights (1) Loss of coastal path (1) Coastal road is disrupted (1)</p>		3

Question Number	Acceptable Answers	Reject	Mark
1 (a) (ii) 1	Slumping (Rotational)/Slipping/Landslides	Soil creep	1
1 (a) (ii) 2	<p>Must have a cause effect link for max</p> <p>When water saturates the rock (1) leads to overlying soil to slip along a plane (1) This occurs due to the effect of gravity (1)</p>		2

Question Number	Acceptable Answers	Reject	Mark
1 (a)(iii)	<p>Max 2 without explanation Could refer to coastal management (lack of it), geology or fetch. Affects can be an increase or a decrease in rate of erosion. Max 3 if only one factor.</p> <p>Coastal Management A sea wall would provide a barrier to the waves (1) which absorbs wave energy (1) leading to a reduction in the rate of coastal erosion (1)</p> <p>Fetch Increased fetch would lead to waves with greater energy (1) which would therefore be more destructive (1) causing more erosion.</p> <p>Geology More resistant geology such as Chalk /limestone/ igneous rock (1) can withstand greater impact from waves (1) therefore would erode less quickly</p>		4

Question Number	Acceptable Answers	Reject	Mark
1 (b)(i)	Point mark Runs parallel to coastline (1) Approximately 2km long (1) (accept 1.7 - 2.3Km) Describe direction of spit (1) N to S Is approximately 1km wide (1) (accept 0.7 - 1.3) It runs in a straight line (1) Extends south beyond coast (1)		2

Question Number	Acceptable Answers	Reject	Mark
1 (b)(ii)	Max 1 if not labelled Max 2 if no line of longshore drift. Changes should represent a realistic change to the feature. E.g. May show extension of the spit (1) an area of marsh land behind the spit, (1) curvature of the spit, (1) or repositioning of the spit, (1) or even erosion of the spit. (1) LSD should be from top to bottom (N to S)(1)		3

Question Number	Acceptable Answers	Reject	Mark
1 (c)	Formation of a stack. Max 2 without explanation. Max 3 without reference to process Max 3 without full sequence. Credit description and explanation on the diagram(s) E.g. Stacks begin as part of an eroding headland. Wave refraction causes waves to attack the side of the headland. Joints are exploited by erosion (named process e.g. hydraulic action, corrasion). Repeated erosion causes a cave, which becomes eroded through to become an arch. Pressure on the arch and force of gravity ultimately cause the collapse of the arch, leaving a stack. For 4 - sequence or named process		4

Question Number	Indicative content	
1(d)	<p>Candidates should focus on an example which is managed by soft or hard engineering methods such as groynes, sea walls, revetments, managed retreat etc.</p> <p>How do management techniques reduce erosion?</p> <ul style="list-style-type: none"> • Groynes build beaches to stop long shore drift - these absorb wave energy to reduce erosion. • Sea walls reflect the wave energy and therefore protect the land behind the wall from, erosion. • Revetments absorb the wave's energy resulting in low energy swash. • Managed retreat is a policy which allows the coastline to erode. 	
Level	Mark	Descriptor
	0	No rewardable material
Level 1	1-2	A basic answer Simple descriptive statements about management, with some reference to named types of engineering.
Level 2	3-4	To reach Level 2 there should be explanation about an example or a specific point. Linkage to a named example. The top of the level requires at least two specific points or a specific point and an explanation, which could be part of one or more examples, or two explanations with some attempt to use geographical terminology.
Level 3	5-6	An explicit answer with at least two specific and explained points which could be from different examples.

Question Number	Acceptable Answers	Reject	Mark
2 (a)(i)	Point mark. Mostly along the rivers (1), where the confluences are (1) linear pattern (1) reference/proximity to places (1), use of evidence (from scale bar) (1). Some areas dotted away from the River Indus (1) Sea.		3

Question Number	Acceptable Answers	Reject	Mark
2 (a)(ii)	Monsoon rainfall/heavy rainfall/200mm of rainfall in 24 hours	Just 'Rain'	1

Question Number	Acceptable Answers	Reject	Mark
2 (a)(iii)	Point mark Must have a cause effect link for max Death by drowning the crops Water covered the land for sustained periods (1) and crops need oxygen to survive (1). Arable fields are covered in sewage (1) leading to the plants becoming intoxicated (1).	Repeated statements e.g drowning	2

Question Number	Acceptable Answers	Reject	Mark
2 (a)(iv)	Max 2 without explanation Max 3 for one method e.g. Flood warning systems - could give people advance notice of poor weather (1) flood risk areas could be designated (1) and people at risk could be evacuated (1) Washlands - could be created to store flood water within the drainage basin (1), thereby lessening the impact of flooding on settled areas (1) Floodplain zoning - positioning land use in such a way to avoid floods (1), based on prior data (flood frequency) (1). Not building on land directly adjacent to the river (1) on land which floods frequently (1).		4

Question Number	Acceptable Answers	Reject	Mark
2 (b)(i)	Fastest flow/thalweg		1

Question Number	Acceptable Answers	Reject	Mark
2 (b)(ii)	Deposition		1

Question Number	Acceptable Answers	Reject	Mark
2 (b)(iii)	Max 1 if not labelled E.g. Development likely to be the formation of an oxbow lake. Erosion at the neck of the meander and extension of the meander head.		3

Question Number	Acceptable Answers	Reject	Mark
2 (b)(iv)	<p>Formation of floodplain and levee Max 2 without explanation. Max 3 without reference to process Max 3 without full sequence. Credit descriptions or explanations on diagrams</p> <p>As a river floods material is washed in the area surrounding the channel. It is sequentially deposited with larger particles dropped first due to a reduction in energy within the river leading to levee formation adjacent to channel. Floodplains are formed of smaller particles which require less energy to be held in the flow. Repeated flooding leaves layers of sedimentation which builds a floodplain.</p>		4

Question Number	Indicative content	
2(c)	<p>Candidates should focus on an example which is managed by soft and hard engineering methods for example channelization, embankments, culverts, washlands, floodplain zoning and flood warning system.</p> <p>How do management techniques reduce the impact of flooding</p> <ul style="list-style-type: none"> • Channelisation - concreting the channel reduces friction therefore moving discharge faster downstream therefore reducing the likelihood of flooding at that point. • Embankments - increases the height of the banks therefore increasing channel discharge capacity. • Floodplain zoning - using flood magnitude frequency to determine suitable locations for land use. 	
Level	Mark	Descriptor
	0	No rewardable material
Level 1	1-2	A basic answer Simple descriptive statements about management, with some reference to named types of engineering.
Level 2	3-4	To reach Level 2 there should be explanation about an example or a specific point. The top of the level requires at least two specific points or a specific point and an explanation, which could be part of one or more examples, or two explanations
Level 3	5-6	An explicit answer with a range (at least two) of specific and explained points which could be from different examples.

Question Number	Acceptable Answers	Reject	Mark
3 (a)(i)	<p>Point mark. Credit straight lifts from Figure 3a. Mountainous regions (1)</p> <p>Remote so have less impact on population (1) Extensive - cover a large area so can build large power station (1) Some flat land - easier to build up reservoir(1) Hard/solid geology - suitable for dam construction(1) The area has large rivers (1)</p>		3

Question Number	Acceptable Answers	Reject	Mark
3 (a)(ii)	<p>Max 2 for description of uses Max 3 without examples Max 3 if only one example/use.</p> <p>E.g. Skiing/snowboarding (1) on the Alpine slopes in Italy (1) Walking/Hiking (1) around the Fjord lands of Norway (1). Research by academics (1) on the Hekla volcano in Iceland. (1)</p>		4

Question Number	Acceptable Answers	Reject	Mark
3 (a)(iii) 1	Lateral/Medial/Terminal/Ground/Push		1
3 (a)(iii) 2	<p>Point mark. Cause effect needed for max</p> <p>e.g. Lateral moraine is found where material which falls(1)/eroded from valley sides accumulates in ridges adjacent to the glacier(1), Terminal Moraine - material found at the furthest extent of the glacier (1) deposited as the glacier started to melt (1). Medial Moraine – material found in the centre of a glacier (1) as two lateral moraine from two glaciers join. Ground Moraine - Material is deposited below the glacier (1) as the glaciers pass through valley.</p>		2

Question Number	Acceptable Answers	Reject	Mark
3 (b)(i)	Plucking Abrasion Grinding	Freeze thaw weathering!	1

Question Number	Acceptable Answers	Reject	Mark
3 (b)(ii)	Freeze thaw/Physical		1

Question Number	Acceptable Answers	Reject	Mark
3 (b)(iii)	Max 1 if not labelled E.g. Could refer to build up of ice within the corrie, or movement of corrie glacier into valley, or even post glacial melting and tarn formation		3

Question Number	Acceptable Answers	Reject	Mark
3 (b)(iv)	Truncated spurs. Max 2 without explanation. Max 3 without reference to process Max 3 without full sequence. Credit description and explanation on diagrams As gravity pulls a glacier downhill through a valley, erosion such as plucking and abrasion remove rocks from the valley wall. Over time the shape of the valley becomes U-shaped and past interlocking spurs become truncated.		4

Question Number	Indicative content	
(c)	<p>Explanation of the cause and effects of a named avalanche. Credit any relevant causes or effects. Max Level 2 if only causes or effect. Must explain causes and effect for max.</p> <p>Causes of avalanches weather conditions - leading to fresh snow wet snow deforestation Human activity Wind direction leading to snow piles Earthquakes</p> <p>Effects Death and injury Damage to infrastructure and buildings Burial</p>	
Level 1	1-2	A basic answer Simple descriptive statements on the causes and/or effects of an avalanche.
Level 2	3-4	To reach Level 2 there should be explanation about an example or a specific point. The top of the level requires at least two specific points or a specific point and an explanation, which could be part of one or more examples, or two explanations
Level 3	5-6	An explicit answer with a range (at least two) of specific and explained points which could be from different examples. Must have both causes and effects for Level 3.

Question Number	Acceptable Answers	Reject	Mark
4 (a)(i)	Point mark Accept direct lifts from Figure 4a. Building collapse (1) Deaths of 307 people (1) 70000 homeless (1) Economic cost of 4 billion Euros (1)		3

Question Number	Acceptable Answers	Reject	Mark
4 (a)(ii)	Convergence (of African and Eurasian) (1) Pressure build up between African and Eurasian Pressure release from friction between African and Eurasian plate (1)		1

Question Number	Acceptable Answers	Reject	Mark
4 (a)(iii)	It measures strength of the earthquake/magnitude (1) (it must have this for max) It is a logarithmic scale (1), where one point is 10 times more powerful than the previous (1).	References to numerical scale 1-9	2

Question Number	Acceptable Answers	Reject	Mark
4 (b)	Max 2 without explanation Max 3 without examples (examples need to be more than country names) E.g. People unaware of threat/poorly educated of hazards (2) No eruption in recent history therefore perceive the volcano to be dormant/extinct (2) People have faith in government action (1) The soil is fertile so they can grow more (2) Less developed countries, people do not have the means to move away (2) People are benefitting from a local tourist industry (1) because they run souvenir shops (1) therefore make more disposable income.(1)		4

Question Number	Acceptable Answers	Reject	Mark
4 (c)(i)	West		1

Question Number	Acceptable Answers	Reject	Mark
4 (c)(ii)	Oceanic		1

Question Number	Acceptable Answers	Reject	Mark
4 (c)(iii)	<p>Credit changes over time to 2 marks. Max 2 if not labelled</p> <p>Could show erosion of present day cone; creation of seamounts/erosion of other volcanic cone; development of atolls; build up of present day cone due to volcanic activity; development of a new volcanic cone (to east of present).</p>		3

Question Number	Acceptable Answers	Reject	Mark
4 (d)	<p>Max 2 without explanations 1 mark per explanation</p> <p>Divergent features to include - basic volcanic cones, transform faults, basaltic lava, lava plateaux's, earthquakes, Mid-ocean ridge, fumaroles, geysers, rifts.</p> <p>E.g. Ridges form at divergent plate boundaries as rising magma erupts above the sea floor. (1) Lava forms in a series of layers and builds up over time(2). If lava builds up above the surface then shield volcanoes/fissure volcanoes can form (2). These are not explosive (1) and lava flows gently out of them (1).</p>		4

Question Number	Indicative content	
4(e)	<p>Must refer to earthquake event. Focus should be building design and forecasting. E.g. earthquake proof buildings, land use spacing; use of fault line hazard maps. Max Level 2 if only forecasting or building design.</p> <p>Attempt to forecasting Use of seismometers to monitor stress Earthquake cloud Study of stress in geology / seismic gap Hazard mapping using historic data Radon gas / groundwater</p> <p>Building design Structural support - cross bracing Internal building support - fixing fixtures to wall Use of aseismic building materials e.g reinforced concrete Weight control in tall building Land use spacing for building</p>	
Level	Mark	Descriptor
	0	No rewardable material
Level 1	1-2	A basic answer Simple descriptive statements about how the effects of earthquakes are reduced
Level 2	3-4	To reach Level 2 there should be explanation about an example or a specific point. The top of the level requires at least two specific points or a specific point and an explanation, which could be part of one or more examples, or two explanations
Level 3	5-6	An explicit answer with a range (at least two) of specific and explained points which could be from different examples. (5) two pieces of spec. detail and explanation. (6) two specific points and both explained.

Question Number	Acceptable Answers	Reject	Mark
5 (a)(i)	Point mark Credit lifts from figure 5. Recycled glass used for road building (1) Plastic cups into pens/pencils (1) Paper remade into recycled toilet paper. (1)		2

Question Number	Acceptable Answers	Reject	Mark
5 (a)(ii)	Max 2 without some explanation Max 2 without evidence from Figure 5 (can be implicit) E.g. Paper put in recycling bins instead of going to landfill. The recycling process uses this paper instead of trees therefore less deforestation.		3

Question Number	Acceptable Answers	Reject	Mark
5 (a)(iii)	Max 2 without explanation Max 2 for generic comments. Must have local scale scheme facts for full marks Rewards - negative aspects - e.g fines for not recycling. Alternative - house to recycling centre. Regain Polymers Limited in West Yorkshire specialises in recycling rigid plastics, such as polystyrene, polyethylene and polypropylene. The material is sorted, washed, grinded and formed into pellets. These pellets are then used to make into new plastic products such as plastic bottles. May alternatively refer to recycling scheme by local council.		4

Question Number	Acceptable Answers	Reject	Mark
5 (b)i	Point mark Max 2 for listed responses / Cooks tour Max 3 without data. Uneven spread - LICs / HICs Higher usages in more developed continents (1) Highest in North America (1) OR lowest in S. America North/South divide (1), except Australasia (1) Use of data (1)		4

Question Number	Acceptable Answers	Reject	Mark
5 (b)(ii)	Energy which once used cannot be used again (1) within a generation (1). May offer an example (1) Max 1 without reference to 'cannot be used again...'		2

Question Number	Acceptable Answers	Reject	Mark
5 (b)(iii)	Max two without explanation. Max 3 if only advantages/disadvantages explained. e.g. Advantages: Relatively cheap once set up It does not contribute directly to global warming as it minimises CO2 output Disadvantages: Difficulty in set up due to inappropriate location Some are seen as an eyesore as they dominate the landscape. Initial set up can be expensive therefore not seen as cost effective Impact on bird migration. Noise.		4

Question Number	Indicative content	
5(c)	<p>Must focus on solutions to energy waste in the home Marks will be awarded based on QWC - see beginning of mark scheme. Specific means name of a place where methods are employed, a date or a numerical statistic (e.g savings heat loss). Reject reference to national schemes</p> <p>Solutions to domestic energy waste cavity wall insulation loft insulation energy efficient light bulbs double glazing Use of an energy meter</p> <p>No reward for recycling waste</p>	
Level	Mark	Descriptor
	0	No rewardable material
Level 1	1-2	A basic answer Simple descriptive statements about solutions to energy waste. Standard of spelling, punctuation and grammar will have reasonable accuracy and limited use of specialist terms.
Level 2	3-4	To reach Level 2 there should be explanation about an example or a specific point. The top of the level requires at least two specific points or a specific point and an explanation, which could be part of one or more examples, or two explanations. Standard of spelling, punctuation and grammar will be fairly accurate in the context of the question and will have some specialist terms.
Level 3	5-6	An explicit answer with a range (at least two) of specific and explained points which could be from different examples. Standard of spelling, punctuation and grammar will have consistent accuracy and there will be use of a range of specialist terms.

Question Number	Acceptable Answers	Reject	Mark
6 (a)(i)	<p>Point mark</p> <p>That because local villagers use the water for everyday business (1) for example faeces from toilets or excrement from animals (1), it can pollute the waterways (1). When people use the waterway for drinking (1) it can lead to people contracting disease (1), such as cholera (1).</p> <p>Accept - Adults collecting 'clean' water Children who have to look after themselves, implication of not knowing better i.e dirty water</p>		4

Question Number	Acceptable Answers	Reject	Mark
6 (a)(ii)	Typhoid, cholera, dysentery, bilharzia		2

Question Number	Acceptable Answers	Reject	Mark
6 (a)(iii)	<p>Max 2 if no explanation Max 3 if only one example explained Max two for general answers (without examples)</p> <p>Can refer to boreholes, small scale dams, or recycled sewage water. Focus must be on improving supply. (maintained by locals)</p> <p>Boreholes tap into water from local aquifers. This enables locals to gain direct access and not have to travel great distances for water. It can also improve the water quality, which leads to better quality of supply. Small scale dams - built by and maintained by the local community (can apply to other aspects of alternative technology) to increase water supply, can be used for irrigation.</p>		4

Question Number	Acceptable Answers	Reject	Mark
6 (b)(i)	Murcia		1

Question Number	Acceptable Answers	Reject	Mark
6 (b)(ii)	Point mark Max 3 without evidence East/West divide (1) Areas on East coast suffer the most (1) Exception is in north near Zaragoza/River Ebro (1) And Madrid in the centre (1) Most surplus is in North West/North West (1) Reference to map evidence (places/scale) (1)		4

Question Number	Acceptable Answers	Reject	Mark
6 (b)(iii)	Max 2 without explanation. Max 3 for 1 demand. E.g. Tourists create extra demand for drinking water/water for cooking (1) therefore increased strain on supply (1). Tourist activities such as water parks (1) can lead to increased demand in barren areas (1). People on golf holidays create extra demand (1) as courses need to be watered (1). Swimming pools from hotels take from the local water supply (1).		4

Question Number	Indicative content
6(c)	Can refer to any water management scheme from either HIC or LIC. Need to focus on the positive and negative effects of the scheme. Specific means something like the name of a place (where scheme is employed), a date or a numerical statistic. Positive effects Increased water supply to agriculture / industry Reduction in flooding Monitoring and control of discharge Creation of energy Negative effects Flooding of land behind reservoir Silting of the dam Loss of alluvial material downstream - effects on agriculture Relocation of homes due to construction Earthquake threat Marks will be awarded based on QWC - see beginning of mark scheme. Specific means something like the name of a place, a date or a number.

Level	Mark	Descriptor
	0	No rewardable material
Level 1	1-2	A basic answer Simple descriptive statements about a water management scheme Standard of spelling, punctuation and grammar will have reasonable accuracy and limited use of specialist terms.
Level 2	3-4	To reach Level 2 there should be explanation about an example or a specific point. The top of the level requires at least two specific points or a specific point and an explanation, which could be part of one or more examples, or two explanations. Standard of spelling, punctuation and grammar will be fairly accurate in the context of the question and will have some specialist terms.
Level 3	5-6	An explicit answer with a range (at least two) of specific and explained points which could be from different examples. Standard of spelling, punctuation and grammar will have consistent accuracy and there will be use of a range of specialist terms.

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