GCSE

Geography B (Geography for enquiring minds)

Unit **J384/01**: Our natural world

General Certificate of Secondary Education

Mark Scheme for June 2018

Annotations

Annotation	Meaning
BP	Blank page
SEEN	Noted but no credit given
✔	Tick
？	Unclear
✖	Cross
^	Omission mark
L1	Level 1
L2	Level 2
L3	Level 3
L4	Level 4
DEV	Development
PLC	Relevant place detail
BOD	Benefit of doubt
IRRL	Tick
C	Communicate findings
⸘	Not Relevant

Question			Answer	Mark	Guidance
1	(a)		A weather event that is significantly different from the average/ usual weather pattern (✓) A weather event that can cause a threat to life (✓) A weather event that can cause damage (to property) (✓)	1	(✓) Do not credit Weather that it is extreme Examples with no attempt to define the key word.
	(b)		Warm water moves eastwards instead of westwards (✓) Warmer temperatures occur in South America (✓) Easterly winds are weaker across the Pacific Ocean (✓) Lack of cold water along coast of South America (✓) Trade winds swap direction/ Westerly (✓) Low pressure (✓) More rainfall in South America (✓) Drought (✓) Increased risk of flooding (✓) Increased risk of mud slides (✓)	3	3 x 1 (✓) for valid points interpreted from the resource suggesting how South America may be affected during an El Niño year Credit Impacts on the Central and South Pacific Changes in weather in South America, as they can be inferred from understanding Fig. 1. Winds may either weaken or reverse direction Do not credit A second contradictory idea without making it clear that 2 different parts of South America are affected.
	(c)		A: Bar graph (✓)	1	(✓) Mark any clear indication of an answer. If two answers are given, then award 0.

Question			Answer	Mark	Guidance
	(*d)		**Level 3 (6–8marks)** An answer at this level demonstrates **thorough** knowledge (AO1) and **reasonable** understanding (AO2) of the technological developments that are used to mitigate the impacts of a tectonic hazard. There will be a **thorough** analysis of the technological developments used to mitigate the impacts of a tectonic hazard (AO3). This will be shown by including **well-developed** ideas about the technological developments used to mitigate the impacts of a tectonic hazard. There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated. **Level 2 (3–5 marks)** An answer at this level demonstrates **reasonable** knowledge (AO1) and **basic** understanding (AO2) of the technological developments that are used to mitigate the impacts of a tectonic hazard. There will be a **reasonable** analysis of the technological developments used to mitigate the impacts of a tectonic hazard (AO3). This will be shown by including **developed** ideas about the technological developments used to mitigate the impacts of a tectonic hazard. There is a line of reasoning presented with some structure. The information presented is in the most-part relevant and supported by some evidence. **Level 1 (1–2 marks)** An answer at this level demonstrates **basic** knowledge (AO1) and **basic** understanding (AO2) of the technological developments that are used to mitigate the impacts of a tectonic hazard. There will be a **basic** analysis of the technological developments used to mitigate the impacts of a tectonic hazard (AO3). This will be shown by including **simple** ideas about the technological developments used to mitigate the impacts of a tectonic hazard. The information is basic and communicated in an unstructured way. The information is supported by limited evidence and the relationship to the evidence may not be clear.	8	**Indicative Content** Responses could include: Building design Prediction Early warning systems Note that all technological developments must be hazard-appropriate Example of a **well-developed** idea: Early warning systems involve automatic texts that are activated if seismometers detect potential earthquakes. Although the technology only gives a few seconds warning it can be enough for people to hide under tables protecting themselves from falling rubble. The disadvantage of this system is it is very expensive and may be impractical for an LIDC where not everyone may own such a device. Example of a **developed** idea: In Iceland. seismographs are used to monitor volcanic eruptions. If abnormal movement is detected, warnings are sent out to everyone via mobile phones. Example of a **simple** idea: Monitoring the volcano using seismometers to detect if their might an eruption and action can be taken. Max 3 marks if a non-tectonic hazard is assessed.

Question			Answer	Mark	Guidance
			0 marks No response worthy of credit.		

Question			Answer	Mark	Guidance
2	(a)		B: Large-scale, long-term changes in average temperature and weather patterns (✓)	1	(✓) Mark any clear indication of an answer. If two answers are given, then award 0.
	(b)		There are cycles/ fluctuations in the data (✓) between 75,000 and 120,000 years in length (DEV). The cooling is relatively gradual with more sudden warming (✓) (C) There are around cycles of cooling and warming (✓) between about 3°C above current temperature and -9°C below current temperature (DEV). The warming is relatively rapid (✓) (C) The overall trend shows a fluctuating change in temperature (✓). 125,000 years ago, there was a warm climate with a temperature of 2°C above present compared to -9°C below present, 140,000 years ago (DEV) This happens every 75,00 to 120,000 years (✓) (C)	4	2 x 1 (✓) for describing the trend 1 x 1 (DEV) for appropriate use of data 1 x 1 (C) for communicating the answer in an appropriate and logical order Ensure that the data used is temperature change from present. Credit A rapid increase in temperature A rapid decrease in temperature Do not credit A gradual increase in temperature A gradual decrease in temperature
	(c)		The painting shows what the temperature was like when it was painted (✓) The River Thames is frozen which we don't see now (✓) The climate has got warmer since the painting was created (✓)	2	2 x 1 for valid explanations of how the painting could be used as evidence for climate change Development awarded with (✓) as a further valid explanation Do not credit The River Thames was frozen The climate has changed

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Question			Answer	Mark	Guidance
	(d)		**Level 3 (5-6 marks)** An answer at this level demonstrates **thorough** understanding why climate change is considered to be a global issue (AO2). This will be shown by including **well-developed** ideas about climate change and why it is considered to be a global issue. **Level 2 (3-4 marks)** An answer at this level demonstrates **reasonable** understanding why climate change is considered to be a global issue (AO2). This will be shown by including **developed** ideas about climate change and why it is considered to be a global issue. **Level 1 (1-2 marks)** An answer at this level demonstrates **basic** understanding why climate change is considered to be a global issue (AO2). This will be shown by including **simple** ideas about climate change and why it is considered to be a global issue. **0 marks** No response worthy of credit.	6	**Indicative Content** A range of social, economic and environmental impacts should be considered worldwide, such as: Impacts of sea level rise Increase in extreme weather events The global nature of causes of climate change and the release of CO_2 from countries around the world. The reduction of CO_2 requires co-operation from countries all around the world. Example of a **well-developed** idea: If temperatures become too high, then places such as Tuvalu may become uninhabitable due to sea level rise. This may cause migration as people are forced to move, leading to overcrowding in the areas they are travelling to. This can lead to food shortages with products having to be exported in from other locations. Example of a **developed** idea: Global warming causes polar ice caps to melt which flood low-lying islands in other parts of the world. Example of a **simple** idea: Polar ice caps melt and sea level rises.

Question			Answer	Mark	Guidance
3	**(a)**		C: Isoline (✓)	1	(✓)
	(b)		Lowland (✓) Flat (✓) Plain (✓)	1	(✓) Do not allow coastal plain
	(c)		The majority of the upland areas are found in the north (✓) and the west (✓) of the UK. The majority of upland areas are found in the north (✓) of the UK with the highest upland areas being in Scotland (✓) (C)	3	2 x 1 (✓) for describing the distribution of upland areas 1 x 1 (C) for communicating the answer in an appropriate and logical order Mark where upland areas are located, do not award marks for where they are not located. Communication mark awarded if the answer deals has a UK wide distribution first and a smaller sub-division of the UK afterwards or vice versa.
	(d)		**The rate at which different rock types erode:** Bar graph (✓) **The rate of erosion of rocks at one place over time:** Line graph (✓) **The different rock types found in a river deposit:** Pie chart (✓)	2	3 correct = 2 marks (✓) 1 or 2 correct = 1 mark (✓)

Question			Answer	Mark	Guidance
	(e)		**Case study – UK river basin** **Level 3 (5-6 marks)** An answer at this level demonstrates **thorough** knowledge of the geology and resultant landforms in the chosen UK river basin (AO1) with a **thorough** understanding of the influence of geology in the formation of river landforms within the chosen river basin (AO2). This will be shown by including **well-developed** ideas about the influence of geology in the formation of river landforms within the chosen river basin. The answer must also include place-specific details for the named river basin. **Level 2 (3-4 marks)** An answer at this level demonstrates **reasonable** knowledge of the geology and resultant landforms in the chosen UK river basin (AO1) with a **reasonable** understanding of the influence of geology in the formation of river landforms within the chosen river basin (AO2). This will be shown by including **developed** ideas about the influence of geology in the formation of river landforms within the chosen river basin. Developed ideas but no place-specific details credited up to **bottom** of level. **Level 1 (1-2 marks)** An answer at this level demonstrates **basic** knowledge of the geology and resultant landforms in the chosen UK river basin (AO1) with a **basic** understanding of the influence of geology in the formation of river landforms within the chosen river basin (AO2). This will be shown by including **simple** ideas about the influence of geology in the formation of river landforms within the chosen river basin. Simple ideas or appropriate named example only credited at **bottom** of level.	6	**Indicative Content** Geology River landforms (appropriate) – e.g. waterfall, gorge. Meanders are an acceptable landform but need to be linked to the geology of the area to reach Level 2. Example of a **well-developed** idea: In the upper course of a river where there is a layer of hard rock (e.g. dolerite) overlying a layer of soft rock (e.g. limestone), the vertical erosion processes will wear away the soft rock more quickly, deepening the river bed and creating a steep drop called a waterfall. The softer rock is eroded more quickly creating an overhang of harder rock. This happens at High Force waterfall on the River Tees. Example of a **developed** idea: Waterfalls are formed where a layer of hard rock lies on top of a layer of soft rock. The river erodes the soft rock, leaving a steep drop called a waterfall. Example of a **simple** idea: Waterfalls are formed where hard rock lies on top of soft rock. Maximum Level 1 for a non-UK river.

Question			Answer	Mark	Guidance
			0 marks No response worthy of credit.		

Question			Answer	Mark	Guidance
4	(a)		C: The interdependence of plants and animals with the environment they live in (✓)	1	(✓)
	(b)		Short roots (✓) Grow very slowly (✓) Small leaves (✓) Low/ short / small (✓) Ability to stop growing (✓) Small surface area to volume ratio (✓) Compact (✓) Short growing season (✓) Survive with low levels of nutrients (✓) Survive with low levels of water (✓) Rapid reproduction (✓)	2	2 x 1 (✓) for valid feature of Arctic flora Do not credit Can survive in cold conditions .
	(c)		C: The sea ice has decreased most rapidly between 2000 and 2015 (✓)	1	(✓)
	(d)		There are fewer nutrients in the soil/ not very fertile (✓) Thin layer of topsoil / organic matter / humus (✓) Torrential / heavy rain leaching them out of the soil (✓) Soils become acidic (✓) Nutrients are taken up by plants quickly (✓) Lack of nutrients from weathered rock/ deep subsoil (✓) Undisturbed soil (✓)	3	3 x 1 (✓) for appropriate suggestions as to why tropical rainforest soils are considered to be amongst the poorest in the world Credit Answers that are linked to nutrient cycling in the rainforest. Do not credit Soil erosion Human activities making the soil poorer

Question			Answer	Mark	Guidance
	(e)		**Case study: sustainable management of an area of tropical rainforest** **Level 3 (5-6 marks)** An answer at this level demonstrates **thorough** knowledge of one way in which an area of tropical rainforest is being sustainably managed (AO1) with a **thorough** evaluation of the effectiveness of the sustainable management (AO3). This will be shown by including **well-developed** ideas about one way in which an area of tropical rainforest is being sustainably managed and its effectiveness. The answer must also include place-specific details for the named management scheme. **Level 2 (3-4 marks)** An answer at this level demonstrates **reasonable** knowledge of one way in which an area of tropical rainforest is being sustainably managed (AO1) with a **reasonable** evaluation of the effectiveness of the sustainable management (AO3). This will be shown by including **developed** ideas about one way in which an area of tropical rainforest is being sustainably managed and its effectiveness. Developed ideas but no place-specific details credited up to **bottom** of level. **Level 1 (1-2 marks)** An answer at this level demonstrates **basic** knowledge of one way in which an area of tropical rainforest is being sustainably managed (AO1) with a **basic** evaluation of the effectiveness of the sustainable management (AO3). This will be shown by including **simple** ideas about one way in which an area of tropical rainforest is being sustainably managed and its effectiveness. Simple ideas or appropriate named example only credited at **bottom** of level. **0 marks** No response worthy of credit.	6	**Indicative Content** Case study: can be at local or regional scale Examples could include: ecotourism, community programmes, biosphere reserves, sustainable forestry Example of a **well-developed** idea: The Puerto Nariño ecotourism scheme uses fishermen to help monitor the river ecosystems in the rainforest. This is quite effective as the number of fish have increased as the fishermen know the river and are well placed to spot illegal fishermen who might be threatening the habitat. The scheme has not been fully successful as there have been some fishermen who decided to fish illegally themselves. Example of a **developed** idea: In Puerto Nariño the fishermen are employed to help stop illegal fishing and this has been quite successful as there has been an increase in the number of species. Example of a **simple** idea: Scientists monitor the number of species. Credit River areas in tropical rainforest Only mark the first strategy that the candidate identifies. This could be multiple techniques within one strategy, for instance, in an ecotourism resort they may use local sourced wood, buffer zones and restricted areas.

Question			Answer	Mark	Guidance
5	(a)		Longshore drift is moving sand South (✓) There is a much greater drop on the south side of the groyne than the north side (✓) The highest drop on the south side is 54cm but only 32cm on the north side (DEV) The difference in the drop between the North and South side of the groyne is varied (✓) The drop ranges from 14cm to 22 cm (DEV) The largest difference is groyne 5/ the smallest difference is at groyne 1 and 4 (✓) The drop on the North side of the groyne is more consistent that the drop on the South side (✓) There is no relationship between the position on the beach and the size of the drop (✓)	4	2 x 1 (✓) for describing the pattern of data shown. 1 x 1 (DEV) for using data from the table 1 x 1 (C) for communicating the answer in an appropriate and logical order. Do not credit The difference in drop between the North and South side of the groyne is consistent.
	(b)		Largest mean sediment size is to the south/south west of the shoreline shown/ the (four) smallest sites for sediment size are all towards the north of the shore (✓) Only the two sites furthest south have a mean sediment size above 2.5 (✓) The smallest variation in sediment size is towards the north of the beach (✓) The largest sediment size is at the 2nd most southerly site (✓)	2	2 x 1 (✓) for valid points about the pattern of beach sediment size along the shore Development awarded with (✓) as a further valid explanation No credit for Up/ down Top/ bottom Data can be used to exemplify a valid pattern only.
	(c)		Insert a scale (✓) Add units for the mean sediment size (✓) Show the precise values for each location (✓) Distance between sites (✓) Direction of longshore drift/ prevailing wind (✓) Presence/ absence of sea defences (✓) More even interval in the key (✓) Location (✓) Title (✓)	1	(✓) for valid suggestion for a way Fig. 4 could be adapted Credit data presentation techniques rather than data collection techniques (more sites).

Question			Answer	Mark	Guidance
	(d*)		**Own Fieldwork** **Level 3 (6–8 marks)** An answer at this level demonstrates a **thorough** evaluation (AO3) of the primary data collection methods used with a **thorough** judgement as to the extent of their success (AO3). This will be shown by including **well-developed** ideas. There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated. **Level 2 (3–5 marks)** An answer at this level demonstrates a **reasonable** evaluation (AO3) of the primary data collection methods used with a **reasonable** judgement as to the extent of their success (AO3). This will be shown by including **developed** ideas. There is a line of reasoning presented with some structure. The information presented is in the most-part relevant and supported by some evidence. **Level 1 (1–2 marks)** An answer at this level demonstrates a **basic** evaluation (AO3) of the primary data collection methods used with a **basic** judgement as to the extent of their success (AO3). This will be shown by including **simple** ideas. The information is basic and communicated in an unstructured way. The information is supported by limited evidence and the relationship to the evidence may not be clear. **0 marks** No response or no response worthy of credit.	8	This question will be marked using 3 levels: **Indicative content** Evaluation of the success of data collection methods, this could include both positive and negative reflections, allowing the candidate to make a judgement on its success. Examples of **well-developed** ideas: To a large extent our data collection methods were successful. We measured the velocity of the river at different locations along the rivers course; we did this five times and took a mean at each location which increased the accuracy of the results, this was important to produce more secure analysis and conclusions. However a limitation is that at times the float used to measure velocity got caught in the stones in the river bed, this meant that human intervention was required and would have affected the final mean. Examples of **developed** ideas: I feel our data collection was successful. We measured the velocity of the river; we did this five times to increase the accuracy of the results. This was an effective method as I was able to compare the velocity at different points along the river which helped answer the overall question. However at times the float used to measure velocity got caught in the stones. Examples of **simple** ideas: We floated an orange down the river and timed how long it took. This worked well as we could work out the rivers' speed.

Question			Answer	Mark	Guidance
		🖉	Spelling, punctuation and grammar and the use of specialist terminology (SPaG) are assessed using the separate marking grid in Appendix 1.	3	

Appendix 1

Spelling, punctuation and grammar and the use of specialist terminology (SPaG) assessment grid

High performance 3 marks
• Learners spell and punctuate with consistent accuracy • Learners use rules of grammar with effective control of meaning overall • Learners use a wide range of specialist terms as appropriate
Intermediate performance 2 marks
• Learners spell and punctuate with considerable accuracy • Learners use rules of grammar with general control of meaning overall • Learners use a good range of specialist terms as appropriate
Threshold performance 1 mark
• Learners spell and punctuate with reasonable accuracy • Learners use rules of grammar with some control of meaning and any errors do not significantly hinder overall • Learners use a limited range of specialist terms as appropriate
0 marks
• The learner writes nothing • The learner's response does not relate to the question • The learner's achievement in SPaG does not reach the threshold performance level, for example errors in spelling, punctuation and grammar severely hinder meaning

OCR (Oxford Cambridge and RSA Examinations)
The Triangle Building
Shaftesbury Road
Cambridge
CB2 8EA

OCR Customer Contact Centre

Education and Learning
Telephone: 01223 553998
Facsimile: 01223 552627
Email: general.qualifications@ocr.org.uk

www.ocr.org.uk

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