Wednesday 11 November 2020 - Morning

GCSE (9-1) Geography B (Geography for Enquiring Minds)
J384/01 Our Natural World

MARK SCHEME

Duration: 1 hour 15 minutes

MAXIMUM MARK 70

FINAL
Last updated: 27/10/2021

(FOR OFFICE USE ONLY)

This document consists of 17 pages

Annotations

Annotation	Meaning
BP	Blank page – the annotation must be used on all blank pages within an answer booklet (structured or unstructured) and on each page of an additional object where there is no candidate response
	Correct response
	Incorrect response
	Unclear
^	Information omitted
L1	Level 1
L2	Level 2
L3	Level 3
L4	Level 4
DEV	Development
PLC	Relevant place detail
BOD	Benefit of doubt
IRRL	Significant amount of material which doesn't answer the question
	Expandable vertical wavy line
C	Communicate findings
SEEN	Noted but no credit given

Subject Specific Marking Instructions

INTRODUCTION

Your first task as an Examiner is to become thoroughly familiar with the material on which the examination depends. This material includes:

- the specification, especially the assessment objectives
- the question paper and its rubrics
- the mark scheme.

You should ensure that you have copies of these materials.

You should ensure also that you are familiar with the administrative procedures related to the marking process. These are set out in the OCR booklet **Instructions for Examiners**. If you are examining for the first time, please read carefully **Appendix 5 Introduction to Script Marking: Notes for New Examiners**.

Please ask for help or guidance whenever you need it. Your first point of contact is your Team Leader.

USING THE MARK SCHEME

Please study this Mark Scheme carefully. The Mark Scheme is an integral part of the process that begins with the setting of the question paper and ends with the awarding of grades. Question papers and Mark Schemes are developed in association with each other so that issues of differentiation and positive achievement can be addressed from the very start.

This Mark Scheme is a working document; it is not exhaustive; it does not provide ‘correct’ answers. The Mark Scheme can only provide ‘best guesses’ about how the question will work out, and it is subject to revision after we have looked at a wide range of scripts.

Please read carefully all the scripts in your allocation and make every effort to look positively for achievement throughout the ability range. Always be prepared to use the full range of marks.

LEVELS OF RESPONSE QUESTIONS:

The indicative content indicates the expected parameters for candidates' answers, but be prepared to recognise and credit unexpected approaches where they show relevance.

Using 'best-fit', decide first which set of level descriptors best describes the overall quality of the answer. Once the level is located, adjust the mark concentrating on features of the answer which make it stronger or weaker following the guidelines for refinement.

Highest mark: If clear evidence of all the qualities in the level descriptors is shown, the HIGHEST Mark should be awarded.

Lowest mark: If the answer shows the candidate to be borderline (i.e. they have achieved all the qualities of the levels below and show limited evidence of meeting the criteria of the level in question) the LOWEST mark should be awarded.

Middle mark: This mark should be used for candidates who are secure in the level. They are not 'borderline' but they have only achieved some of the qualities in the level descriptors.

Be prepared to use the full range of marks. Do not reserve (e.g.) highest level marks 'in case' something turns up of a quality you have not yet seen. If an answer gives clear evidence of the qualities described in the level descriptors, reward appropriately.

	AO1	AO2	AO3
Comprehensive	A range of detailed and accurate knowledge that is fully relevant to the question.	A range of detailed and accurate understanding that is fully relevant to the question.	Detailed and accurate interpretation through the application of relevant knowledge and understanding. Detailed and accurate analysis through the application of relevant knowledge and understanding. Detailed and substantiated evaluation through the application of relevant knowledge and understanding. Detailed and substantiated judgement through the application of relevant knowledge and understanding.
Thorough	A range of accurate knowledge that is relevant to the question.	A range of accurate understanding that is relevant to the question.	Accurate interpretation through the application of relevant knowledge and understanding. Accurate analysis through the application of relevant knowledge and understanding. Supported evaluation through the application of relevant knowledge and understanding. Supported judgement through the application of relevant knowledge and understanding.
Reasonable	Some knowledge that is relevant to the question.	Some understanding that is relevant to the question.	Some accuracy in interpretation through the application of some relevant knowledge and understanding. Some accuracy in analysis through the application of some relevant knowledge and understanding. Partially supported evaluation through the application of some relevant knowledge and understanding. Partially supported judgement through the application of some relevant knowledge and understanding.
Basic	Limited knowledge that is relevant to the topic or question.	Limited understanding that is relevant to the topic or question.	Limited accuracy in interpretation through lack of application of relevant knowledge and understanding. Limited accuracy in analysis through lack of application of relevant knowledge and understanding. Un-supported evaluation through lack of application of knowledge and understanding. Un-supported judgement through lack of application of knowledge and understanding.

Question			Answer	Mark	Guidance
1	(a)		Drought (✓)	1	(✓)
	(b)	(i)	C: 46 mm (✓)	1	(✓)
		(ii)	163 cumecs (✓)	1	(✓) Accept 161 – 170
	(c)		Earthquakes are distributed in lines/ belts (✓) In the middle of oceans (✓) Along the edge of continents (✓) Along the West coast of the US (✓)	3	1 x 1 (✓) for valid description point regarding the linear pattern of earthquakes 1 x 1 (✓) for valid description point regarding the distribution within that pattern 1 x 1 (C) for communicating the response in an appropriate and logical way No credit for reference to plate boundaries as they are not shown on the map.
	(d)		Convection currents (✓) Slab pull (✓) Ridge push (✓)	1	1 x 1 (✓) for appropriate process named which causes the Earth's tectonic plates to move.

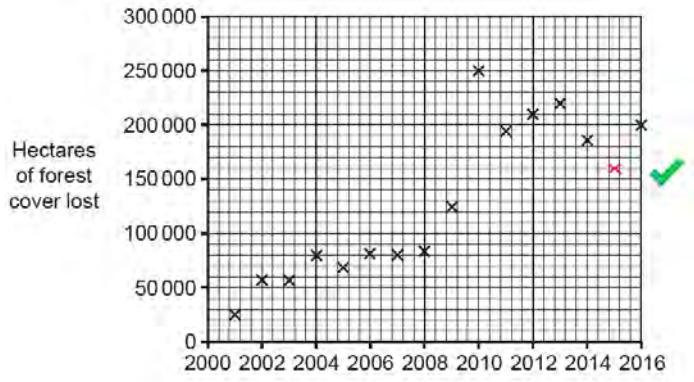
	(e)		**Case study: a tectonic hazard event** **Level 3 (5-6 marks)** An answer at this level demonstrates a **thorough** knowledge of a tectonic event (AO1) and **thorough** understanding of how the tectonic event was responded to (AO2). This will be shown by including **well-developed** ideas about how the tectonic event was responded to. The answer must include place-specific details for the tectonic event. **Level 2 (3-4 marks)** An answer at this level demonstrates a **reasonable** knowledge of a tectonic event (AO1) and **reasonable** understanding of how the tectonic event was responded to (AO2). This will be shown by including **developed** ideas about how the tectonic event was responded to. Developed ideas but no place-specific detail credited up to **bottom** of level. **Level 1 (1-2 marks)** An answer at this level demonstrates a **basic** knowledge of a tectonic event (AO1) and **basic** understanding of how the tectonic event was responded to (AO2). This will be shown by including **simple** ideas about how the tectonic event was responded to. Named example only receives no place-specific detail credit. **0 marks** No response worthy of credit.	6	**Indicative content** Valid tectonic hazard: include earthquakes, volcanic eruptions, tsunami, landslides triggered by earthquake Case study can be anywhere in the world but must be a 21st century example. Example of a **well-developed** idea: The Icelandic Meteorological Office have been involved in the implementation of FutureVolc. This has upgraded scientific equipment such as an increase in the use of seismometers and lasers to help monitor Eyjafjallajökull. This means that residents can be prepared further in advance to ensure a safe evacuation as well as the protection of valuable infrastructure that may be at risk if there is no warning. Example of a **developed** idea: Iceland is upgraded the equipment that they use so that they can send out warnings if Eyjafjallajökull is about to erupt given people time to evacuate. Example of a **simple** idea: Better equipment is being used to help find out when Eyjafjallajökull might erupt. The name line is used to help focus the candidate on the question. Consider the whole answer when awarding the mark. **Maximum of 3 marks for any examples that do not contain any place specific detail.** **Incorrect / pre 2000/ maximum Level 1** **Non-tectonic event – no credit**

Question			Answer	Mark	Guidance
2	(a)	(i)	A: sea ice has decreased	1	(✓)
		(ii)	As the temperature increases the sea ice position retreats towards the pole/ as the temperature decreases the sea ice position extends farther from the pole. (✓) When it is hotter there is less sea ice as it will melt/ When it is colder there is more sea ice as it will not melt/ Amount of sea ice changes due to amount of solar heating (✓)	2	1 x 1 (✓) for valid explanation of how sea ice positions can be used as evidence for climate change
	(b)		Sea level rise (✓) Increase in extreme weather events (✓) Loss of polar ecosystems (✓) Increased drought (✓) Changes to animal migration (✓) Increase in forest fires (✓) Global Warming (✓)	2	2 x 1 (✓) for any valid worldwide environmental impact of climate change Must state what the change is – no credit for drought/ fire/ flood/ without qualification.
	(c)		**Level 3 (6-8 marks)** An answer at this level demonstrates a **thorough** understanding of the impacts that humans have had on the atmosphere (AO2) and demonstrates a **thorough** analysis of those impacts (AO3). This will be shown by including **well-developed** ideas about the impacts that humans have had on the atmosphere. There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated.	8	**Indicative content** Enhanced greenhouse effect, which could include Burning of fossil fuels, forest clearance/ deforestation, industrial scale release of greenhouse gases Example of **well-developed** ideas: Humans are contributing to global warming through deforestation. This is because plants absorb carbon dioxide through photosynthesis, therefore if we cut down trees we are reducing the Earth's natural way to reduce carbon dioxide, further worsening the effects of global warming. This can lead to an increase in global temperatures, drought and flooding due to melting ice caps. However, we have realised the effects we are having in recent years and attempts to reduce

			Level 2 (3-5 marks) An answer at this level demonstrates a **reasonable** understanding of the impacts that humans have had on the atmosphere (AO2) and demonstrates a **reasonable** analysis of those impacts (AO3). This will be shown by including **developed** ideas about the impacts that humans have had on the atmosphere. 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** understanding of the impacts that humans have had on the atmosphere (AO2) and demonstrates a **basic** analysis of those impacts (AO3). This will be shown by including **simple** ideas about the impacts humans have had on the atmosphere. The information is basic and communicated in an unstructured way. The information is supported by limited evidence and the relationship to the question may not be clear. **0 marks** No response worthy of credit.		emissions have included the government increasing petrol tax and funding sustainable energy. Example of **developed** ideas: Deforestation has had a big impact on the atmosphere. Rainforests are very good as they have millions of trees that turn carbon dioxide into oxygen. When humans come and cut down the trees for wood, crops and cattle farming, not only is carbon dioxide released but more stays in the atmosphere. Example of **simple** ideas: Deforestation releases gases into the atmosphere so the earth warms up.

Question			Answer	Mark	Guidance
3	(a)	(i)	B: contains landforms produced by the movement of ice (✓)	1	(✓)
		(ii)	The ice didn't reach that far (✓) and so could not form glacial features (✓) Glaciers didn't reach that far (✓) Area dominated by erosion/deposition from rivers (✓) Warmer latitudes (✓) so the ice would melt (✓) Lower land so not as cold (✓)	2	2 x 1 (✓) for valid explanation points about why the South and East of England lack glaciated landscapes
		(iii)	Located in colder mountainous areas for more snowfall (✓) Steep slopes (✓) Good views (✓) More of a challenge (✓)	2	2 x 1 (✓) for appropriate reasons for **why** the distinctive characteristics of glaciated landscapes make them ideal for human activities such as hiking, climbing and skiing
	(b)	(i)	Allow coastlines to erode naturally (✓) Remove coastal defences (✓)	1	1 x 1 (✓) for appropriate message interpreted from the article
		(ii)	55% (✓)	1	(✓)

	(c)		**Case study: UK coastal landscape** **Level 3 (5-6 marks)** An answer at this level demonstrates **thorough** knowledge of coastal management at the chosen UK coastal landscape (AO1) with a **thorough** evaluation of the impacts of this coastal management (AO3). This will be shown by including **well-developed** ideas about the coastal management and its impacts. The answer must include place-specific details for the named UK coastal landscape. **Level 2 (3-4 marks)** An answer at this level demonstrates **reasonable** knowledge of coastal management at the chosen UK coastal landscape (AO1) with a **thorough** evaluation of the impacts of this coastal management (AO3). This will be shown by including **developed** ideas about the coastal management and its impacts. Developed ideas but no place-specific detail credited up to **bottom** of level. **Level 1 (1-2 marks)** An answer at this level demonstrates **basic** knowledge of coastal management at the chosen UK coastal landscape (AO1) with a **thorough** evaluation of the impacts of this coastal management (AO3). This will be shown by including **simple** ideas about the coastal management and its impacts. Named example only receives no place-specific detail credit. **0 marks** No response worthy of credit.	6	**Indicative content** Management could include hard or soft engineering strategies, including allowing natural retreat/ shoreline management plans. Impacts could be positive or negative. Example of a **well-developed** idea: The management of the coast at Overstrand has created positive and negative impacts. The 900m sea wall has reduced the rate of erosion to 0m per year, protecting buildings on the top of the cliff like the Sea Marge Hotel. The wooden groynes also trap sand on the beach reducing the rate of longshore drift and helping to reduce wave energy. However, the sea defences are expensive and will not be replaced when they become damaged, so over 60 properties could potentially be lost by 2105. Example of a **developed** idea: The management of the coast at Overstrand has been positive. The sea wall has reduced the rate of erosion by protecting buildings on the top of the cliff. The groynes stop longshore drift, this builds up a beach for the tourists to use. Example of a **simple** idea: They built groynes. The groynes stop longshore drift. Non-UK location – Max Level 1. Maximum of 3 marks for any examples that do not contain any place specific detail. The name line is used to help focus the candidate on the question. Consider the whole answer when awarding the mark.

Question			Answer	Mark	Guidance
4	(a)		B: harsh climate, little biodiversity, thin soils, plants with long tap roots (✓)	1	(✓)
	(b)	(i)		1	1 x 1 (✓) for accurate plot. Must be exactly on correct year and correct hectares (2015, 160000)
		(ii)	D: positive correlation (✓)	1	(✓)
	(c)		Logging (✓) Mineral extraction (✓) Agriculture (✓) Tourism/ building tourist facilities (✓) Road building (✓) Create space for habitation (✓)	2	2 x 1 (✓) for any valid reasons for deforestation in a tropical rainforest Do not allow money/resources/ space without qualification.
	(d)		In the future there will be no trees (✓) In the future industry will have polluted the air (✓) Loss of biodiversity/ destruction of ecosystems (✓) Caused by people (✓) Big companies are lying about how green they are (✓) People/ companies pretend to care but don't really (✓) The image presented to the world may not represent the truth (✓)	2	2 x 1 (✓) for appropriate points regarding the message from the cartoon

	(e)		**Level 3 (5-6 marks)** An answer at this level demonstrates **thorough** knowledge of human activity in the Arctic/Antarctic (AO1) and **thorough** understanding of the impacts of that human activity on the Arctic/ Antarctic (AO2). This will be shown by including **well-developed** ideas about the human activity and its impacts on the Arctic/ Antarctic. **Level 2 (3-4 marks)** An answer at this level demonstrates **reasonable** knowledge of human activity in the Arctic/ Antarctic (AO1) and **reasonable** understanding (AO2) of the impacts of that human activity on the Arctic/ Antarctic (AO2). This will be shown by including **developed** ideas about the human activity and its impacts on the Arctic/ Antarctic. **Level 1 (1-2 marks)** An answer at this level demonstrates **basic** knowledge of human activity in the Arctic/ Antarctic (AO1) and **basic** understanding (AO2) of the impacts of that human activity on the Arctic/ Antarctic (AO2). This will be shown by including **simple** ideas about the human activity and its impacts on the Arctic/ Antarctic. **0 marks** No response worthy of credit.	6	**Indicative content** Valid ideas could include: Scientific research, indigenous people, tourism (wildlife/ landscapes/ cultures), fishing, whaling, mineral exploitation (Arctic only) Impacts could be positive or negative. Example of a **well-developed** idea: There are no official restrictions on mining in some of the areas of the Arctic as the countries there have their own priorities and agendas. This has led to pollution, such as oil spills, which have contaminated the water, making it hard for the indigenous people and wildlife who depend on the ocean for food. The reduction in biodiversity would disrupt the food chain and puts some species at risk of becoming extinct. Example of a **developed** idea: Mining in the Arctic has led to oil spills that disrupt the food chain and makes puts some species at risk of becoming extinct. Example of a **simple** idea: Oil spills can kill animals in the Arctic. Consider if the relevant activity takes place in the Arctic or Antarctic if the candidate has specified which one their answer concerns.

Question			Answer	Mark	Guidance
5	(a)		Wide river channel (✓) Boulders which have been deposited on the river bank (✓) Vegetated banks (✓)	1	1 x 1 (✓) for appropriate annotation The annotation needs to be descriptive in nature
	(b)		Students could have visited 3 different sites along a river (✓). They could have used a sampling technique such as selecting 10 pebbles at equal distances across the river channel (✓). They would then have measured the longest axis of the pebbles (✓) They could then calculate the mean by adding up all of the lengths and dividing by the total number of pebbles (✓). Students could have visited 3 different sites along a coast (✓). They could have used a sampling technique such as selecting 10 pebbles at equal distances across the beach (✓). They would then have measured the longest axis of the pebbles (✓) They could then calculate the mean by adding up all of the lengths and dividing by the total number of pebbles (✓).	4	4 x 1 (✓) for appropriate suggestions of how students could have collected the data
	(c)	(i)	I presented my data of the speed of the river at different sites through geo-located bar charts on a map. This was appropriate because it clearly showed the locations of my four sites at different points down the river (✓) and it was allowed comparison between the sites by presenting the data in a consistent way for all sites (✓).	2	2 x 1 (✓) for appropriate points justifying their data presentation technique No credit given for stating technique but helps to contextualise the answer No credit for human fieldwork

	(c)	**(ii)**	**Level 3 (6–8 marks)** An answer at this level demonstrates **thorough** evaluation of the fieldwork conclusions (AO3) with a **thorough** judgement of the extent to which this supported ideas studied in class (AO3). This will be shown by including **well-developed** ideas about the fieldwork conclusions and appropriate theories studied. 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** evaluation of the fieldwork conclusions (AO3) with a **reasonable** judgement of the extent to which this supported ideas studied in class. This will be shown by including **developed** ideas about the fieldwork conclusions and appropriate theories studied. 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** evaluation of the fieldwork conclusions (AO3) with a **basic** judgement of the effectiveness of the extent to which this supported idea studied in class.	8	**Indicative content** Example of a **well-developed** idea: We studied the speed of the river at 3 different sites. We recorded the speed of the river 3 times at each site and took a mean to work out the speed of the river to make our results more reliable. Overall, our results supported the theories that we had studied in class as the river got slightly faster as we travelled downstream. This followed the Bradshaw model, which is based on North American rivers. However, it was only the mean result that followed this pattern. If you study the individual bits of data which we collected, then it does not always show that the river speed increased. We would need to use sites which are further apart to investigate this more thoroughly. Example of a **developed** idea: We studied the speed of the river at 3 different sites. We recorded the speed of the river 3 times at each site and took a mean to work out the speed of the river. Overall, our results supported the theories that we had studied in class as the river got faster as we travelled downstream as we expected Example of a **simple** idea: We studied the speed of the river. The results were what we expected as the river got faster further downstream. Max Level 1 for human fieldwork

			This will be shown by including **simple** ideas about the fieldwork conclusions and appropriate theories studied. 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 worthy of credit		
			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 meaning • 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