

GCSE (9–1)

Geography B (Geography for Enquiring Minds)

J384/01: Our natural world

General Certificate of Secondary Education

Mark Scheme for Autumn 2021

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This mark scheme is published as an aid to teachers and students, to indicate the requirements of the examination. It shows the basis on which marks were awarded by examiners. It does not indicate the details of the discussions which took place at an examiners' meeting before marking commenced.

All examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes should be read in conjunction with the published question papers and the report on the examination.

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1. Annotations

Annotation	Meaning
	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
	Level 1
	Level 2
	Level 3
	Level 4
	Development
	Relevant place detail
	Benefit of doubt
	Significant amount of material which doesn't answer the question
	Expandable vertical wavy line
	Communicate findings
	Noted but no credit given

12. 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)	High winds (✓) Strong winds (✓)	1	(✓)
	(b)	High levels of insolation on the Equator (✓) Low pressure over rainforests (✓) Rising air cools down (✓) Condensation occurs (✓) Clouds form and cause heavy rainfall (✓) High pressure over tropics/ deserts (✓) Sinking air warms up (✓) Little condensation occurs (✓) So there are areas of little cloud and no rainfall (✓)	2	2 x 1 (✓) Credit either an area of heavy rain or an area of low rainfall. Only mark the first answer given.
	(c)	(i)	1	(✓)
		(ii)	3	2 x 1 (✓) for describing pattern 1 x 1 (C) for communicating the answer in an appropriate and logical way No C mark unless there is a larger scale description and a smaller scale description. 2 marks for larger or smaller scale descriptions only but no C mark Only credit answer that describe areas of high risk

(d)	<p>Case study: causes of a non-UK weather hazard event</p> <p>Level 3 (5-6 marks) An answer at this level demonstrates thorough knowledge of the causes of a non-UK weather hazard event (AO1) with a thorough evaluation of the main causes of a non-UK weather hazard event (AO3).</p> <p>This will be shown by including well-developed ideas about the causes of the weather hazard event. The answer must include place-specific details for the chosen case study.</p> <p>Level 2 (3-4 marks) An answer at this level demonstrates reasonable knowledge of the causes of a non-UK weather hazard event (AO1) with a reasonable evaluation of the main causes of a non-UK weather hazard event (AO3).</p> <p>This will be shown by including developed ideas about the causes of the weather hazard event. Developed ideas but no place-specific details credited up to bottom of level.</p> <p>Level 1 (1-2 marks) An answer at this level demonstrates basic knowledge of the causes of a non-UK weather hazard event (AO1) with a basic evaluation of the main causes of a non-UK weather hazard event (AO3).</p> <p>This will be shown by including simple ideas about the causes of the weather hazard event. Named example only receives no place specific detail credit.</p> <p>0 marks No response worthy of credit.</p>	6	<p>Indicative content Non-UK weather hazard event could be: Flash flooding Tropical storm Heatwave Drought</p> <p>Example of a well-developed idea: Typhoon Haiyan formed 6° North of the Equator in the Western Pacific as a tropical storm. Evaporation of warm ocean water (over 26.5°C) allowed warm, wet air to rise, which then cooled and condensed forming clouds and rain. Low pressure caused strong winds of 195mph which in turn created a storm surge over 5m high. The storm surge was the most damaging aspect of the storm as it hit an area of low-lying ground around Tacloban allowing the storm surge to travel a long way inland.</p> <p>Example of a developed idea: Typhoon Haiyan formed over warm ocean water north of the Equator. This warm water was evaporated and then cooled to form rain. Low pressure caused strong winds and a storm surge. The storm surge caused the most damage to the coast areas around Tacloban.</p> <p>Example of a simple idea: Tropical storms are caused by warm sea water. This makes clouds and rain. There were strong winds and a storm surge.</p> <p>Consider the whole answer when awarding the mark.</p> <p>UK/ Tectonic case study – Level 1 only</p>
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Question			Answer	Mark	Guidance
2	(a)	(i)	8 years (✓)	1	(✓)
		(ii)	A: scale showing the dates before present (✓)	1	(✓)
	(b)		<p>Sunspots are dark/ reddish spots that appear on the surface of the sun (✓)</p> <p>More sunspots mean the Sun is more effective at giving off heat (✓)</p> <p>There is an 11-year cycle for sunspots (✓) which then causes variations in solar insolation depending on where it is in the cycle (✓)</p> <p>Increased sunspot activity may lead to higher sea temperatures (✓)</p> <p>The IPCC have concluded that sunspots play a very small role in climate change (✓)</p>	3	3 x 1 (✓)
	(c)	(i)	Increased (✓)	1	(✓)
		(ii)	Fossil fuel use (✓)	1	(✓)

	(d)	<p>Level 3 (5-6 marks) An answer at this level demonstrates thorough understanding of the economic impacts of climate change on the UK (AO2) with a thorough evaluation (AO3) of the economic impacts.</p> <p>This will be shown by including well-developed ideas about the economic impacts of climate change on the UK.</p> <p>Level 2 (3-4 marks) An answer at this level demonstrates reasonable understanding of the economic impacts of climate change on the UK (AO2) with a reasonable evaluation (AO3) of the economic impacts.</p> <p>This will be shown by including developed ideas about the economic impacts of climate change on the UK.</p> <p>Level 1 (1-2 marks) An answer at this level demonstrates basic understanding of the economic impacts of climate change on the UK (AO2) with a basic evaluation (AO3) of the economic impacts.</p> <p>This will be shown by including simple ideas about the economic impacts of climate change on the UK.</p> <p>0 marks No response worthy of credit.</p>	6	<p>Indicative content UK Industry could include positive or negative impacts. Agriculture Tourism Energy provision</p> <p>Example of a well-developed idea: Climate change will cause UK temperatures to rise meaning longer, hotter summers and warmer, wetter winters. This could have both a positive and negative impact on tourism in the UK. More people might be attracted to the beaches in the South of England if they are hotter, especially domestic tourists, boosting the economy in these towns. The opposite might be true in the North of Scotland where ski resorts might have to close if there is no snow putting people out of business.</p> <p>Example of a developed idea: Climate change will mean the UK has hotter summers and wetter winters so ski resort in the north of Scotland might close down if there is no snow.</p> <p>Example of a simple idea The UK will have hotter summers meaning more people might stay in the UK on holiday.</p> <p>Consider the whole answer when awarding the mark.</p> <p>Non-UK – Level 1 only.</p>
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Question			Answer	Mark	Guidance
3	(a)		C: tree roots split open cracks in rocks (✓)	1	(✓)
	(b)	(i)	5.0 (✓)	1	(✓) Allow +/- 0.5mm
		(ii)	Location A (✓)	1	(✓)
		(iii)	Temperature/ climate (✓) Amount of rainfall (✓) Acidity of rainfall (✓)	1	(✓) for appropriate factor suggested No credit for rock type
	(c)	(i)	D: sediment load fluctuates each year with a peak in summer (✓)	1	(✓)
		(ii)	Upper/ Middle/ Lower course (✓) Rock type (✓) Rate of erosion (✓) Amount of precipitation (✓) Deforestation/ afforestation (✓)	2	(✓) for appropriate reasons for variations suggested

(d)	<p>Case study: UK river basin Level 3 (5-6 marks) An answer at this level demonstrates thorough knowledge (AO1) and understanding (AO2) of how their chosen UK river landform was created by geomorphic processes.</p> <p>This will be shown by including well-developed ideas about how geomorphic processes created their chosen landform. The answer must also include place-specific details for the named UK river basin landform.</p> <p>Level 2 (3-4 marks) An answer at this level demonstrates reasonable knowledge (AO1) and understanding (AO2) of how their chosen UK river landform was created by geomorphic processes.</p> <p>This will be shown by including developed ideas about how geomorphic processes created their chosen landform. Developed ideas but no place-specific detail credited up to bottom of level.</p> <p>Level 1 (1-2 marks) An answer at this level demonstrates basic knowledge (AO1) and understanding (AO2) of how their chosen UK river landform was created by geomorphic processes.</p> <p>This will be shown by including simple ideas about how geomorphic processes created their chosen landform. Simple idea or appropriate named example only credited at bottom of Level 1.</p> <p>0 marks No response worthy of credit.</p>	6	<p>Indicative content</p> <p>Chosen landform could be erosional or depositional e.g. waterfall, gorge, v-shaped valley, floodplain, levee, meander, ox-bow lake</p> <p>Example of a well-developed idea: High Force waterfall is formed in the upper course of the River Tees, where a layer of hard rock (Whin Sill) overlies soft rock (Carboniferous Limestone). The force of the falling water (hydraulic action) has eroded the softer rock to form a plunge pool and helped to wear away the backwall forming an overhang. Eventually the overhang will become too heavy and will fall into the plunge pool causing the waterfall to erode towards the source.</p> <p>Example of a developed idea: High Force on the River Tees is a waterfall is formed by hard rock overlying soft rock. Erosion of the soft rock causing a plunge pool to form. Falling water wears away the backwall.</p> <p>Example of a simple idea There are layers of hard and soft rock. The water erodes the soft rock and creates a pool. The overhang falls into the pool.</p> <p>Consider the whole answer when awarding the mark.</p> <p>Non-UK location – max. Level 1</p> <p>Maximum of 3 marks for any examples that do not contain place-specific detail.</p>
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Question			Answer	Mark	Guidance
4	(a)	(i)	D: 845 mm (✓)	1	(✓)
		(ii)	2°C (✓) 25-27°C (✓)	1	(✓)
	(b)		<p>The climate provides ideal conditions for rapid nutrient cycling (✓)</p> <p>Rainforest plants quickly take up nutrients (✓)</p> <p>The nutrient cycle allows a wide variety of species to grow (✓)</p> <p>The nutrient cycle provides nutrients for plants to grow very large (✓)</p> <p>Without the litter layer nutrients would be quickly lost from the cycle (✓)</p> <p>Provides nutrients in a form that are easily absorbed by plant roots (✓)</p> <p>Nutrients are in high demand from the rainforest's many fast-growing plants (✓)</p> <p>If vegetation is removed, the soils quickly become infertile/ leached (✓)</p>	3	3 x 1 (✓) for valid explanation points about the importance of nutrient cycling in the rainforest

(c)	<p>Case study: small scale example of sustainable management in either the Arctic or Antarctic</p> <p>Level 3 (6-8 marks) An answer at this level demonstrates a thorough knowledge of the chosen sustainable management (AO1) with a reasonable understanding of the impacts of the chosen sustainable management (AO2). There will be a thorough analysis of the impacts of the chosen sustainable management (AO3).</p> <p>This will be shown by including well-developed ideas about the sustainable management and its impact.</p> <p>There is a well-developed line of reasoning which is clear and logically structured. The information provided is relevant and substantiated.</p> <p>The answer must also include place-specific details for the chosen sustainable management.</p> <p>Level 2 (3-5 marks) An answer at this level demonstrates a reasonable knowledge of the chosen sustainable management (AO1) with a basic understanding of the impacts of the chosen sustainable management (AO2). There will be a reasonable analysis of the impacts of the chosen sustainable management (AO3).</p> <p>This will be shown by including developed ideas about the sustainable management and its impact.</p> <p>There is a line of reasoning presented with some structure. The information provided is in the most part relevant and supported by some evidence.</p>	8	<p>Indicative content</p> <p>Small-scale examples of sustainable management for the Arctic or Antarctic could include: Tourism Conservation Whaling</p> <p>Example of a well-developed idea: In the Clyde River Marine Wildlife Area large-scale whaling is banned to protect the species that feed there. This has meant the number of bowhead whales has increased to 2000 and also protected other species that live there. This includes 16 other species of whale and polar bears and seals. However, the whales do not spend the whole year in the protected area so may be vulnerable when they are outside of this area. Also, the sanctuary can't protect the whales against any changes to their habitat caused by climate change and increases in sea water temperature.</p> <p>Example of a developed idea: Whaling has been banned in the Clyde River, so whale numbers have increased to 2000, although local people are still allowed to hunt them this has little impact on overall numbers.</p> <p>Example of a simple idea: Whaling is banned and whale numbers have increased.</p> <p>Maximum Level 1 for answers that deal with a large-scale example such as the Antarctic Treaty.</p>
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		<p>Developed ideas with no place-specific detail credited up to bottom of level.</p> <p>Level 1 (1-2 marks) An answer at this level demonstrates a basic knowledge of the chosen sustainable management (AO1) with basic or no understanding of the impacts of the chosen sustainable management (AO2). There will be a basic or no analysis of the impacts of the chosen sustainable management (AO3).</p> <p>This will be shown by including simple ideas about the sustainable management and its impact.</p> <p>There 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.</p> <p>0 marks No response worthy of credit.</p>		
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Question	Answer	Mark	Guidance
5*	<p>Level 3 (6–8 marks) The answer must include a thorough analysis of the fieldwork data (AO3) to come to a thorough conclusion that answers the question (AO3).</p> <p>This will be shown by including well-developed ideas.</p> <p>There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated.</p> <p>Level 2 (3–5 marks) The answer must include reasonable analysis of the fieldwork data (AO3) with reasonable conclusion to help answer the question (AO3).</p> <p>This will be shown by including developed ideas.</p> <p>There is a line of reasoning presented with some structure. The information presented is in the most-part relevant and supported by some evidence.</p> <p>Level 1 (1–2 marks) The answer will include basic analysis of the fieldwork data (AO3) to come to a basic conclusion answering the question (AO3).</p> <p>This will be shown by including simple ideas.</p> <p>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.</p> <p>0 marks No response worthy of credit.</p>	8	<p>Indicative content Use of information from the primary and secondary data. Judgement can be either way as long as fits the argument in the response.</p> <p>Example of well-developed ideas: The students can conclude that the hypothesis works in some locations but not in others. Figure 2 shows the strongest winds are from the south and south-east (approximately 8%) which means that longshore drift should be transported material from south to north. The students would expect attrition to make the particles smaller in the north than in the south. You can see this happen between Withersea and Mappleton but not along the whole coast. The students could conclude that there are other factors affecting sediment size along this area of coast.</p> <p>Example of developed ideas: As the strongest winds come from the south and south-east, I would expect the sediment to move towards the north. The sediment size doesn't get smaller towards the north, so I think the hypothesis is wrong. However, we don't know how accurate the primary data is or how it was collected.</p> <p>Example of simple ideas: The strongest winds come from the south and south-east. There isn't a pattern with the sediment size.</p>

Appendix 1

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

High performance 3 marks
<ul style="list-style-type: none"> • 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
<ul style="list-style-type: none"> • 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
<ul style="list-style-type: none"> • 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
<ul style="list-style-type: none"> • 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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