GCSE

Geography A Geographical Themes

J383/02: The world around us

General Certificate of Secondary Education

Mark Scheme for June 2024

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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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MARKING INSTRUCTIONS

PREPARATION FOR MARKING

1. Make sure that you have accessed and completed the relevant training packages for on-screen marking: *RM assessor Online Training*; *OCR Essential Guide to Marking*.

2. Make sure that you have read and understood the mark scheme and the question paper for this component. These are posted on the RM Cambridge Assessment Support Portal http://www.rm.com/support/ca

3. Log-in to RM assessor and mark the **required number** of practice responses ("scripts") and the **required number** of standardisation responses.

YOU MUST MARK 5 PRACTICE AND 10 STANDARDISATION RESPONSES BEFORE YOU CAN BE APPROVED TO MARK LIVE SCRIPTS.

MARKING

1. Mark strictly to the mark scheme.

2. Marks awarded must relate directly to the marking criteria.

3. The schedule of dates is very important. It is essential that you meet the RM assessor 50% and 100% deadlines. If you experience problems, you must contact your Team Leader without delay.

4. If you are in any doubt about applying the mark scheme, consult your Team Leader by telephone or the RM assessor messaging system, or by email.

5. **Crossed Out Responses**
Where a candidate has crossed out a response and provided a clear alternative then the crossed-out response is not marked. Where no alternative response has been provided, examiners may give candidates the benefit of the doubt and mark the crossed-out response where legible.

Rubric Error Responses – Optional Questions
Where candidates have a choice of questions across a whole paper or a whole section and have provided more answers than required, then all responses are marked and the highest mark allowable within the rubric is given. Enter a mark for each question answered into RM assessor, which will select the highest mark from those awarded. *(The underlying assumption is that the candidate has penalised themselves by attempting more questions than necessary in the time allowed.)*

Multiple Choice Question Responses
When a multiple-choice question has only a single, correct response and a candidate provides two responses (even if one of these responses is correct), then no mark should be awarded (as it is not possible to determine which was the first response selected by the candidate).
When a question requires candidates to select more than one option/multiple options, then local marking arrangements need to ensure consistency of approach.

Contradictory Responses
When a candidate provides contradictory responses, then no mark should be awarded, even if one of the answers is correct.

Short Answer Questions (requiring only a list by way of a response, usually worth only **one mark per response**)
Where candidates are required to provide a set number of short answer responses then only the set number of responses should be marked. The response space should be marked from left to right on each line and then line by line until the required number of responses have been considered. The remaining responses should not then be marked. Examiners will have to apply judgement as to whether a 'second response' on a line is a development of the 'first response', rather than a separate, discrete response. *(The underlying assumption is that the candidate is attempting to hedge their bets and therefore getting undue benefit rather than engaging with the question and giving the most relevant/correct responses.)*

Short Answer Questions (requiring a more developed response, worth **two or more marks**)
If the candidates are required to provide a description of, say, three items or factors and four items or factors are provided, then mark on a similar basis – that is downwards (as it is unlikely in this situation that a candidate will provide more than one response in each section of the response space.)

Longer Answer Questions (requiring a developed response)
Where candidates have provided two (or more) responses to a medium or high tariff question which only required a single (developed) response and not crossed out the first response, then only the first response should be marked. Examiners will need to apply professional judgement as to whether the second (or a subsequent) response is a 'new start' or simply a poorly expressed continuation of the first response.

6.   Always check the pages (and additional objects if present) at the end of the response in case any answers have been continued there. If the candidate has continued an answer then add a tick to confirm that the work has been seen.

7.   Award No Response (NR) if:
   • there is nothing written in the answer space

   • Where a candidate has not attempted the question and receives NR, they should also receive NR for the SPAG mark.

   Award Zero '0' if:
   • anything is written in the answer space and is not worthy of credit (this includes text and symbols).

   • Where a candidate has attempted the question and receives a mark (including a mark of 0), they should also receive a mark for SPAG (which could be 0).

   Team Leaders must confirm the correct use of the NR button with their markers before live marking commences and should check this when reviewing scripts.

8.   The RM assessor **comments box** is used by your team leader to explain the marking of the practice responses. Please refer to these comments when checking your practice responses. **Do not use the comments box for any other reason.**
   If you have any questions or comments for your team leader, use the phone, the RM assessor messaging system, or e-mail.

9.   <u>**Assistant Examiners**</u> will send a brief report on the performance of candidates to their Team Leader via email by the end of the marking period. The report should contain notes on particular strengths displayed as well as common errors or weaknesses. Constructive criticism of the question paper/mark scheme is also appreciated.

10. For answers marked by *levels of response*:
     a.   **To determine the level** – start at the highest level and work down until you reach the level that matches the answer
     b.   **To determine the mark within the level**, consider the following:

Descriptor	Award mark
On the borderline of this level and the one below	At bottom of level
Just enough achievement on balance for this level	Above bottom and either below middle or at middle of level (depending on number of marks available)
Meets the criteria but with some slight inconsistency	Above middle and either below top of level or at middle of level (depending on number of marks available)
Consistently meets the criteria for this level	At top of level

11. **Annotations**

Annotation	Meaning
✓	Tick, use to show where marks gained for all short answer questions, place where mark(s) gained
?	Unclear, use to show mark(s) cannot be awarded as answer is illegible or unclear
✗	Cross, use for incorrect idea(s) for all short answer questions and for incorrect case study examples for Q1e) 2b)
^	Omission mark to show key idea(s) missing from answer that prevents mark(s) being given
L1	Level 1 Annotate end of answer with **L1** for overall level for Q1e) 2b) 3e)
L2	Level 2 Annotate end of answer with **L2** for overall level for Q1e) 2b) 3e)
L3	Level 3 Annotate end of answer with **L3** for overall level for Q1e) 2b) 3e)
L4	Level 4 Annotate end of answer with **L4** for overall level for Q 2b)
DEV	Development, use to show developed/well developed ideas for Q1e) 2b) 3e)
PLC	Use for relevant place specific detail for Q1e) 2b)
EVAL	Evaluation, use for evaluation or judgment ideas for Q1e) 2b)
BOD	Benefit of doubt, use to show mark(s) given where answer lacks clarity
IRRL	Irrelevant, significant amount of material which does not answer the question
BP	Blank page, this annotation **must** be used on all blank pages within an answer booklet and on each page of an additional object where there is no candidate response.
SEEN	Seen, response seen but no credit given and use for all unanswered question items, along with NR

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 also ensure 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.

The Examiners' Standardisation Meeting will ensure that the Mark Scheme covers the range of candidates' responses to the questions, and that all Examiners understand and apply the Mark Scheme in the same way. The Mark Scheme will be discussed and amended at the meeting, and administrative procedures will be confirmed. Co-ordination scripts will be issued at the meeting to exemplify aspects of candidates' responses and achievements; the co-ordination scripts then become part of this Mark Scheme.

Before the Standardisation Meeting, you should read and mark a number of scripts, in order to gain an impression of the range of responses and achievement that may be expected.

In your marking, you will encounter valid responses which are not covered by the Mark Scheme: these responses must be credited. You will encounter answers which fall outside the 'target range' of bands for the paper which you are marking. Please mark these answers according to the marking criteria.

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.

PMT

			Answer	Mark	AO Element	Guidance
1	(a)	(i)	The grasshopper is connected to the coyote (✓) and the snake (✓) Grasshopper is a food source/ prey for the snake (✓) and for the coyote (✓) Grasshopper is eaten by the snake (✓) the snake is eaten by the hawk (✓) Grasshopper is eaten by the snake (✓) the snake is eaten by the coyote (✓)	2	AO4c x 2	2 x 1 (✓) for each valid idea from Fig. 1 Snake / coyote / hawk must be stated
1	(a)	(ii)	Soil (✓) Sunshine/Sun (✓)	1	AO3(a) x 1	1 x 1 (✓) for correct answer
1	(b)	(i)	August (✓)	1	AO4c x 1	1 x 1 for correct answer (✓)
1	(b)	(ii)	Temperature range = 8 (✓)	1	AO4c x 1	1 x 1 for correct answer (✓) ^{o}C unit of measurement not needed
1	(c)		Very low temperatures / very cold (✓) Long cold winters (✓) Short cool summers (✓) Temperatures mostly below freezing (✓) Dry / low annual precipitation (✓) Precipitation as snowfall (✓) Strong winds/circumpolar winds (✓)	2	AO1 x 2	2 x 1 (✓) for each valid feature of a polar ecosystem climate (✓) No credit for cold Credit one valid idea about temperature and one valid idea about precipitation. Credit two valid different ideas about temperature. Credit two valid different ideas about precipitation. Credit valid climate data, although not required for marks

			Answer	Mark	AO Element	Guidance
1	**(d)**		Algae (zooxanthellae) live in coral polyps (✓) convert sunlight to energy / photosynthesize (✓) provide nutrients for coral growth (✓) Algae and coral capture, retain and share nitrogen (✓) in a symbiotic relationship (✓) Phytoplankton convert sunlight into energy/ photosynthesize (✓) Zooplankton gain nutrients by consuming phytoplankton (✓) Waste nutrients from coral fertilise the algae (✓) Fish excrete ammonia (✓) to be absorbed by coral/algae (✓) Fish find shelter in coral (✓) safer from predators (✓) laying eggs/breeding place (✓) Plants provide food for animals (✓) Smaller fish provide food for larger fish/sharks (✓)	**4**	**AO2(2) x 4**	4 x 1 (✓) for each valid idea about how plants and animals are interdependent in a coral reef Development awarded (✓) for further explanation of one idea.

1	(e) *		**Case study: Sustainable use and management in a tropical rainforest.**	8	**AO1 x 3**	Case study will be marked using 3 levels:
			Level 3 (6-8 marks) An answer at this level demonstrates **thorough** knowledge (AO1) of sustainable use and management methods and **thorough** understanding (AO2) of how sustainable use and management methods mitigate threats to biodiversity. There will be a **reasonable** evaluation of the success of sustainable use and management methods (AO3). This will be shown by including **well-developed** ideas about sustainable use and management methods and how they mitigate threats to biodiversity in a named tropical rainforest area The answer must also include **place-specific** details for the named tropical rainforest area, or management methods or threats. 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 2 (3-5 marks)**		**AO2(2) x 3** **AO3c x 2**	Example must be a valid named tropical rainforest or an area of tropical rainforest such as a national park. **Indicative Content** Response will include information about sustainable use and management methods in response to threats to biodiversity. There will be an evaluation of the success of the methods in mitigating the threats. A range of methods may be considered. Ideas must be coherently linked to the named tropical rainforest. Accurate information such as location and area of rainforest, named places, named projects, data about threats and/or management success will be credited as place specific detail. The amount of relevant place specific detail determines credit within the level. Maximum of mid-Level 2 - 4 marks if no valid named tropical rainforest given but valid ideas about sustainable use and management. **Example of well-developed ideas.** The Purus-Manus Conservation Corridor is in the Amazon rainforest in Peru. It covers an area of 10 million hectares. The project was set up to protect the rainforest and support the communities who live there. Management plans are needed for all forest-related activities and about 60 local indigenous communities have been given land ownership to sustainably

| | | | An answer at this level demonstrates **reasonable** knowledge (AO1) of sustainable use and management methods and **reasonable** understanding (AO2) of how sustainable use and management methods mitigate threats to biodiversity. There will be a **basic** evaluation of the success of sustainable use and management methods (AO3).

This will be shown by including some **developed** ideas about sustainable use and management methods and how they mitigate threats to biodiversity in a named tropical rainforest area.

The answer must also include some **place-specific** detail for the named tropical rainforest area or management methods or threats.

The information has some relevance and is presented with limited structure. The information is supported by limited evidence.

Level 1 (1-2 marks)

An answer at this level demonstrates **basic** knowledge (AO1) of sustainable use and management methods and **basic** understanding (AO2) of how sustainable use and management methods mitigate threats to biodiversity. There will be a **basic** evaluation of the success of sustainable use and management methods (AO3). | | | manage how their rainforest area is used. They use the rainforest for water, food, medicine and clothing. Success in protecting the rainforest has been limited. Up to 95% of logging in Peru is illegal and the vast area of rainforest is difficult to police and monitor. High profits mean that illegal logging takes place in protected areas and some local communities have been displaced from their land.

Example of developed ideas.

In the Amazon rainforest in Peru there are national parks to protect the rainforest and help the communities who live there. Management plans are needed for all forest-related activities and local indigenous communities can manage how their rainforest area is used. Success in protecting the rainforest has been limited. The vast area of rainforest is difficult to police and illegal logging still takes place in protected areas.

Example of simple ideas.

National parks have been set up in Peru to protect the rainforest. But illegal logging still takes place and biodiversity is destroyed when the trees are chopped down. |

| | | | This will be shown by including **simple** ideas about sustainable use or management methods.

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. | | | |

	Question		Answer	Mark	AO Element	Guidance
2	(a)	(i)	7025 (mean GNI per capita) (✓)	1	AO4c	1 x 1 (✓) for correct number No margin for error $ Unit of measurement not needed.
2	(a)	(ii)	D: scatter graph (✓)	1	AO4a	1 x 1 (✓) for correct answer
2	(a)	(iii)	Internet users (✓) GDP (✓) GNP (✓) Human Development Index/HDI (✓) Birth rate (✓) Death rate (✓) Infant mortality rate (✓) Doctors per 1000 (✓) Access to education (✓) Employment structure (✓) Unemployment rate (✓)	1	AO1	1 x 1 (✓) for one valid development indicator Credit any other valid development indicator not included on the list opposite
2	(a)	(iv)	Equatorial Guinea's GNI per capita is higher (✓) which means that people are wealthier than in the other countries (✓) the economy is more developed (✓) Equatorial Guinea has the highest literacy rate (✓) which means more people can read and write (✓) so the education system is more developed (✓) Equatorial Guinea has the highest life expectancy (✓) which means that	3	AO3b	3 x 1 (✓) for each valid idea based on evidence from Table 1 One mark maximum for simple points about Equatorial Guinea having higher/highest scores. Reserve one mark for use of relevant data or manipulation of data from Table 1 Development awarded with (✓) for explanation of how data shows evidence of levels of development.

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Question			Answer	Mark	AO Element	Guidance
			people live for longer (✓) health care is more developed (✓)			
2	(b)*		**Case Study- The influence of migration on an LIDC or EDC city** **Level 4 (10-12 marks)** An answer at this level demonstrates **comprehensive** knowledge of migration and the growth and character of the city (AO1), with a **comprehensive** understanding of the impact of migration on the city's growth and character (AO2), with a **comprehensive** judgement about whether international migration is a more important influence than national migration on the growth and character of the city (AO3). This will be shown by including **well-developed ideas** about migration and the influences on LIDC or EDC city's growth and character. The answer must also include **place-specific** details for the named city. Amount of relevant place-specific detail determines credit within the level.	12	AO1 x 4 AO2(2) x 4 AO3d x 4	Case study will be marked using 4 levels: **Indicative Content** City must be a large named settlement in a valid LIDC or EDC as defined by the IMF. Accept named parts/areas/places within a valid city. Response will include information about migration to the city and the growth and character of the city. This can be internal, rural-urban or international migration. The judgement will focus on the importance of international migration compared to national migration as an influence on the city's growth and character. Place specific detail could include named places within the city or country, data about migration and the consequences of migration, sources of migrants. The amount of relevant place specific detail determines credit within the level. Maximum mid-Level 2 – 5 marks if valid named LIDC or EDC city not given, but valid ideas about migration and its impact on city growth and character.

			There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated. **Level 3 (7-9 marks)** An answer at this level demonstrates **thorough** knowledge of migration and the growth and character of the city (AO1), with a **thorough** understanding of the impact of migration on the city's growth and character (AO2), with a **thorough** judgement about whether international migration is a more important influence than national migration on the growth and character of the city (AO3). This will be shown by including **well-developed ideas** about migration or the city's growth or character, with **developed ideas** for the other foci. The answer must also include some **place-specific** details for the named city. There is line of reasoning presented with some structure. The information presented is in the most-part relevant and supported by some evidence. **Level 2 (4-6 marks)** An answer at this level demonstrates **reasonable** knowledge of migration and the growth and character of the city (AO1), with a **reasonable**			**Example of well-developed ideas.** Istanbul is a mega city in Turkey. Its population has increased from one million in 1950 to over 15 million today. In the 1970s immigrants arrived from rural areas of Turkey in search of better jobs. Many ended up working in the informal sector such as waste recycling. Since 2000, more varied international migration has caused Istanbul to become more multicultural. Less than 30% of the current population were born in the city. There are large Kurdish, Greek, Armenian and Jewish communities living in the city. Migration has caused the city to grow along the coast stretching for 100 kilometres from east to west. Most recently Istanbul has become a transit destination for migrants seeking a better life in Europe. This includes refugees from Syria and over 50,000 immigrants from Africa. Many of these poorer immigrants build informal settlements , with about 80% of Istanbul's housing being illegally constructed. Both national and international migration have caused Istanbul to grow into a mega city. National migration has reinforced traditional Turkish culture in the city. International migration has had the biggest impact on city growth and is the source of current challenges in housing and pollution. **Example of developed ideas.** The population of Istanbul in Turkey has increased from one million in 1950 to 15 million today. Immigrants from rural parts of Turkey caused the city to grow in the 1970s. More recent international migration from places like Syria, Pakistan and Africa has led to the city expanding in size along the coast. The city is now more multicultural, with less than 30% of the population being born in Istanbul. Many of the new immigrants arrive illegally and live in informal settlements. This international migration has had the biggest impact on Istanbul and is causing problems in housing quality.

understanding of the impact of migration on the city's growth and character (AO2), with a **reasonable** judgement about whether international migration is a more important influence than national migration on the growth and character of the city (AO3).

This will be shown by including **developed ideas** about migration or the city's growth or character, with **simple ideas** for the other foci.

The information has some relevance and is presented with limited structure. The information is supported by limited evidence.

Level 1 (1-3 marks)
An answer at this level demonstrates **basic** knowledge of migration and the growth and character of the city (AO1), with a **basic** understanding of the impact of migration on the city's growth and character (AO2), with a **basic** judgement about whether international migration is a more important influence than national migration on the growth and character of the city (AO3).

This will be shown by including **simple ideas** about migration and the city's growth or character.

The information is basic and communicated in an unstructured way.

Example of simple ideas.
Rural-urban migration caused the city of Istanbul to grow in the 1970s. International migration is now more important with illegal immigration from Syria and African causing housing problems in the city.

			The information is supported by limited evidence and the relationship to 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**		

Question			Answer	Mark	AO Element	Guidance
3	(a)	(i)	C (✓) a period of time with lower than normal rainfall	1	**AO1 x 1**	1 x 1 (✓) for correct answer
3	(a)	(ii)	Shows information about conserving water (✓) washing machines full load (✓) reducing water usage (✓) filling bath halfway (✓) collecting own water (✓) from rain (✓) reducing wildfire risk (✓) not discarding cigarettes in dry grass (✓)	2	**AO3a**	2 x 1 (✓) for each valid idea Credit for an example from Fig. 3 if linked to a valid, general idea about drought evidence
3	(a)	(iii)	Above average presence of high-pressure systems (✓) with sinking / dry air (✓) causing lack of rainfall (✓) El Nino affects trade winds (✓) less warm water reaches west Pacific coast (✓) less evaporation / causes lack of rainfall (✓) La Nina affects trade winds (✓) cooler water along east Pacific coast (✓) less evaporation / causes lack of rainfall (✓) Limited movement of intertropical convergence zone (ITCZ) (✓) so warmer, moist air does not reach dry areas (✓) causing lack of rainfall (✓) Global warming / climate change causing increased temperatures (✓) increased	3	**AO2(1)**	3 x 1 (✓) for each valid idea about the causes of drought Credit valid simple ideas about different causes Credit valid developed ideas about one cause Development awarded with (✓) for further explanation of valid idea(s) No credit for describing the extreme weather conditions associated with drought

Question			Answer	Mark	AO Element	Guidance
			evaporation of surface water (✓) increased evaporation of soil moisture (✓) Irrigation / abstraction / water supply deplete water stores (✓) less water for evapotranspiration (✓) causing lack of rainfall (✓) Deforestation affects water storage (✓) less water for evapotranspiration (✓) causing lack of rainfall (✓)			
3	(b)	(i)	The area of sea ice in 2020 is less than in 1980 (✓) The area of sea ice has decreased from 2020 to 1980 (✓) The area of sea ice has changed from 7.5 million square km to 3.7 square km (✓)	1	AO4c	1 x 1 (✓) for a valid idea Credit simple idea, it is less/has decreased
3	(b)	(ii)	The enhanced greenhouse effect has caused temperatures to rise (✓) causing sea ice to melt (✓) Warmer sea temperatures (✓) reducing the formation of sea ice (✓)	3	AO3a	3 x 1 for each valid idea Development awarded with (✓) for further explanation of valid idea(s)

Question			Answer	Mark	AO Element	Guidance
3	(c)		B : Concentration of gases in air bubbles	1		
3	(d)		Eruptions blast large amounts of ash/dust into the atmosphere (✓) particles can block out the Sun / cause global dimming (✓), reducing temperatures / causing volcanic winters (✓) Increased amounts of sulphur dioxide in the atmosphere (✓) sulphuric acid aerosols reflect radiation from the Sun / cause global dimming (✓), reducing temperatures / causing volcanic winters (✓) Increased amounts of carbon dioxide/nitrous oxides in the atmosphere (✓) more outgoing heat trapped/absorbed (✓) increasing temperatures (✓)	3	AO2(1)	3 x 1 for each valid idea Development awarded with (✓) for further explanation of valid idea(s)
3	(e)		**Level 3 (5-6 marks)** An answer at this level demonstrates **thorough** knowledge of current events linked to climate change (AO1) and **thorough** understanding of the consequences of these events (AO2).	6	AO1 x 3 AO2(2) x 3	Answer will be marked using 3 levels: **Indicative Content** Ideas will cover current or recent events that can be linked to climate change.

Question	Answer	Mark	AO Element	Guidance
	This will be shown by including **well-developed** ideas about current events linked to climate change and their consequences. **Level 2 (3-4 marks)** An answer at this level demonstrates **reasonable** knowledge of current events linked to climate change (AO1) and **reasonable** understanding of the consequences of these events (AO2). This will be shown by including **developed** ideas about current events linked to climate change and their consequences. **Level 1 (1-2 marks)** An answer at this level demonstrates **basic** knowledge of a current event linked to climate change (AO1) and **basic** understanding of a consequence of this event (AO2). This will be shown by including **simple** ideas about a current event linked to climate change and a consequence.			Ideas could include social, economic and environmental consequences and attempts to manage these Case study knowledge is not required but valid information can be credited as development. No credit for speculation about future consequences unless coherently linked to recent or current events. **Example of well-developed ideas** Consequences of climate change are linked to extreme weather conditions. The melting of polar ice caps means there is more water vapour in the atmosphere. With higher temperatures this causes more intense storms with higher winds and heavier rainfall and greater storm surges in low- lying areas. Coastal and river flooding events are more severe and frequent. As a consequence, people's lives are endangered and their property and livelihoods disrupted and destroyed. **Example of developed ideas** Increased water vapour due to polar melting causes more intense storms. Heavier rainfall means that flooding is more severe and frequent.

Question			Answer	Mark	AO Element	Guidance
						As a consequence, people's lives are endangered and their property destroyed. In poorer areas people have little or no protection and death tolls can be high. **Example of simple ideas** Climate changes causes more severe storms and floods. This means property is destroyed and people are killed.

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

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