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Centre number	Candidate number	
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Candidate signature	I declare this is my own work.	ノ

A-level **GEOGRAPHY**

Paper 1 Physical geography

Thursday 16 May 2024 Morning Time allowed: 2 hours 30 minutes

Materials

For this paper you must have:

- the colour insert (enclosed)
- a pencil
- a rubber
- a ruler.

You may use a calculator.

For Examiner's Use Section Mark A B C TOTAL

Instructions

- · Use black ink or black ball-point pen.
- Fill in the boxes at the top of this page.
- Answer all questions in Section A.
- Answer either Question 2 or Question 3 or Question 4 in Section B.
- Answer either Question 5 or Question 6 in Section C.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- If you need additional extra space for your answer(s), use the lined pages at the end of this book. Write the question number against your answer(s).
- Do all rough work in this book. Cross through any work you do not want to be marked.

Information

- The marks for questions are shown in brackets.
- The total number of marks available for this paper is 120.



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	Water and carbon cycles	
	Answer all questions in this section.	
0 1.1	Outline how human factors impact upon the water cycle.	[4 marks]
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	Figure 1a and Figure 1b are in the insert.
	Figure 1a shows change in lake and river surface water temperature by global distribution between 1970 and 2010.
	Figure 1b shows change in lake and surface water temperature by latitude between 1970 and 2010.
1.2	Analyse the data shown in Figure 1a and Figure 1b. [6 marks]
	Extra space
	Question 1 continues on the next page



	Figure 2 is in the insert.
	Figure 2 shows river flow data measured at various gauging stations across parts of the UK on 7 November 2019.
0 1.3	Using Figure 2 and your own knowledge, assess factors affecting the likelihood of flooding across the UK.
	[6 marks]
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0 1.4	With reference to a tropical rainforest that you have studied, evaluate attermitigate the impacts of climate change.	
		[20 marks]



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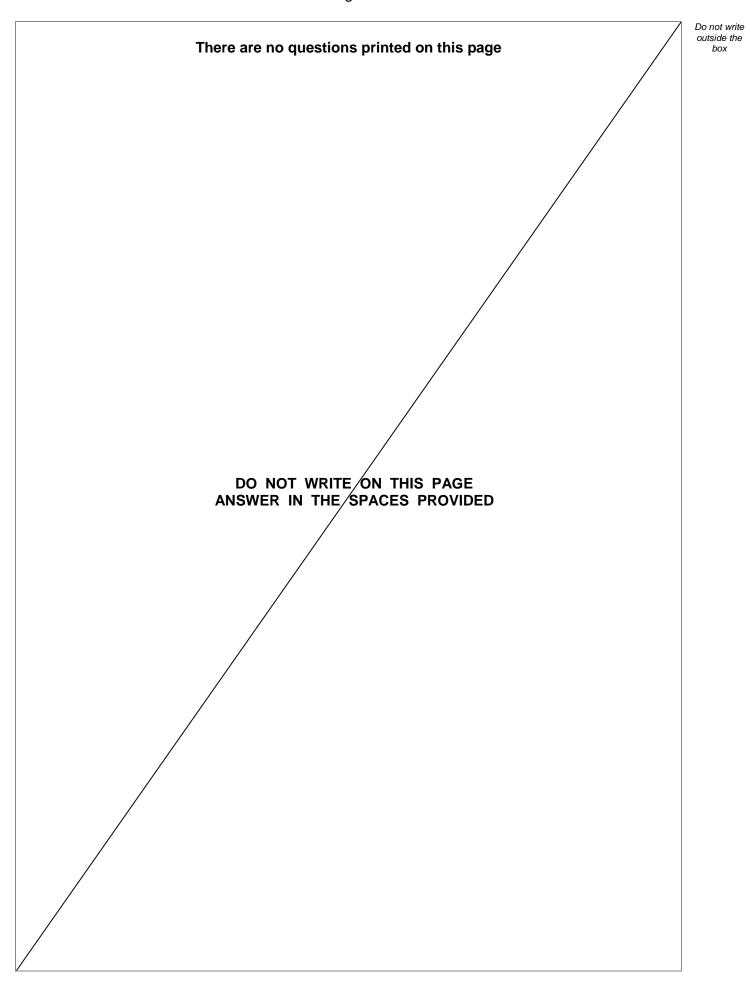


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End of Section A Turn over for Section B	
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Section B

	Answer one question in this section.	
	Answer either Question 2 or Question 3 or Question 4.	
	Answer either Question 2 or Question 3 or Question 4.	
Ouestion 2	Hot desert systems and landscapes	
Question 2	not desert systems and landscapes	
0 2 . 1	Outline characteristics of a pediment.	
		[4 marks]
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	Question 2 continues on the next page	
	. •	



	Figure 3a and Figure 3b are in the insert.
	Figure 3a shows the average rainfall and current extent of the Sahara Desert and other vegetation types in central and north Africa.
	Figure 3b shows the average rainfall and vegetation types in central and north Africa around 6000–10 000 years ago.
0 2.2	Using Figure 3a and Figure 3b , interpret the change in rainfall and vegetation patterns in central and north Africa.
	[6 marks]
	Extra space



	Figure 4 is in the insert.	
	Figure 4 shows some of the factors causing desertification in selected loca	itions.
0 2 . 3	Using Figure 4 and your own knowledge, assess the potential impact of desertification.	
	desermication.	[6 marks]
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	Question 2 continues on the next page	



0 2.4	With reference to one or more hot deserts that you have studied, assess impacts of climate change on the development of landforms.	potential
		[20 marks]



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Question 3	Coastal systems and landscapes	
0 3.1	Outline the sequence in the development of a sea stack.	[4 marks]
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	Question 3 continues on the next page	



	Figure 5a and Figure 5b are in the insert.
	Figure 5a shows coastal zones of Vietnam.
	Figure 5b shows coastal vulnerability due to erosion in Vietnam as a whole and by coastal zone.
0 3.2	Analyse the data shown in Figure 5a and Figure 5b . [6 marks]
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	Figure 6 is in the insert.
	Figure 6 shows some challenges facing West Africa's coastal resources.
0 3.3	Using Figure 6 and your own knowledge, assess potential approaches to managing this coastal region.
	[6 marks]
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	Question 3 continues on the next page



0 3.4	With reference to one or more coastal environments that you have studie the potential impact of climate change on the development of landforms.	d, assess
	and perential impact of climate crisings on the development of failure	[20 marks]



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Question 4	Glacial systems and landscapes	
0 4.1	Outline processes which lead to the development of a corrie.	[4 marks]
		[4 marks]
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	Question 4 continues on the next page	



	Figure 7a and Figure 7b are in the insert.
	Figure 7a shows cumulative length change in selected Scandinavian glaciers, 1896–2016.
	Figure 7b shows cumulative mass balance change in selected Scandinavian glaciers, 1960–2014.
0 4.2	Analyse the data shown in Figure 7a and Figure 7b . [6 marks]
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	Figure 8 is in the insert.
	Figure 8 shows future challenges and opportunities in the Alps as the climate changes.
0 4.3	Using Figure 8 and your own knowledge, evaluate opportunities for developing a sustainable future for this region.
	[6 marks]
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	Question 4 continues on the next page



4.4	With reference to one or more cold environments that you have studied, assess the potential impact of climate change on the development of landforms.	Do ou
	[20 marks]	



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End of Question 4	
End of Section B	



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Section C

	Answer one question in this section.	
	Answer either Question 5 or Question 6.	
Question 5	Hazards	
0 5.1	Outline processes involved in the formation of ocean ridges.	[4 marks]
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	Question 5 continues on the next page	



	Figure 9 is in the insert.
	Figure 9 shows data related to the changing frequency of tropical storms between 1980 and 2018.
0 5 . 2	Interpret the data shown in Figure 9 . [6 marks]
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	Figure 10 is in the insert.
	Figure 10 shows data related to the Hunga Tonga–Hunga Ha'apai submarine volcanic eruption and tsunami on 14 January 2022.
0 5.3	Using Figure 10 and your own knowledge, assess challenges in responding to this event.
	[9 marks]
	Extra space



To what extent do you agree that changes to the carbon cycle are responsible	for
increasingly frequent and severe tropical storms?	
្រ	marks]
	To what extent do you agree that changes to the carbon cycle are responsible increasingly frequent and severe tropical storms? [9]



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0 5.5	'The Hazard Management Cycle is useful in minimising the impact of wildfires.'
	Evaluate this view with reference to a wildfire event that you have studied. [20 marks]

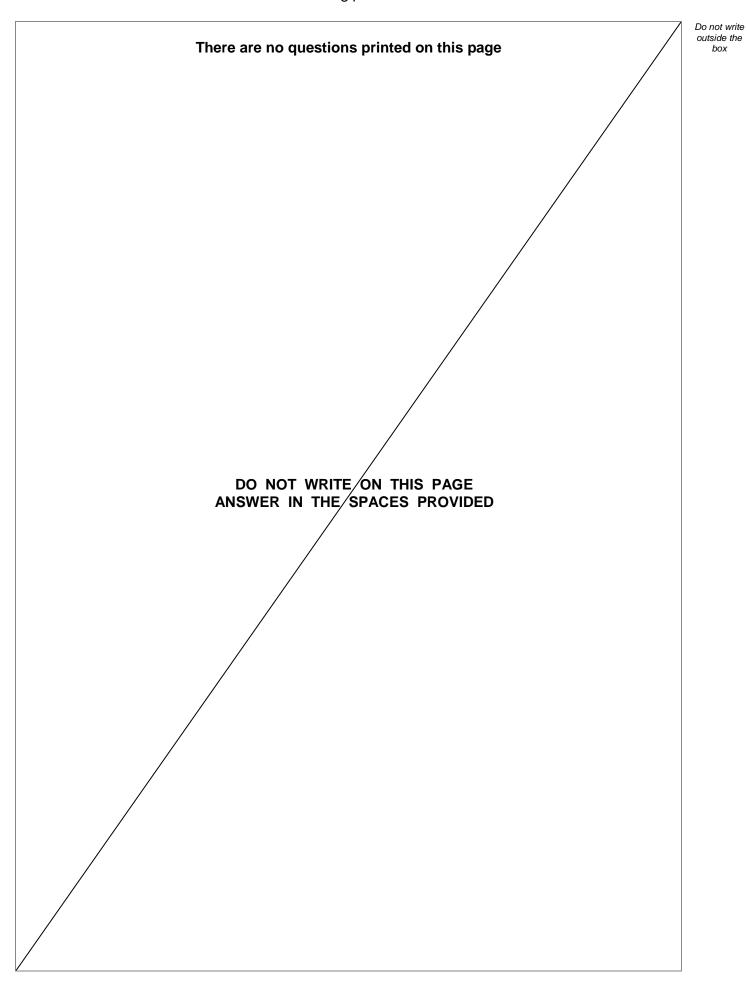


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Question 6	Ecosystems under stress	
0 6.1	Outline processes involved in mineral nutrient cycling in an ecosystem.	[4 marks]
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	Question 6 continues on the next page	



	Figure 11 is in the insert.
	Figure 11 shows information about global biodiversity by species category measured in 2019.
0 6 . 2	Analysis the information shows in Figure 11
0 0 . 2	Analyse the information shown in Figure 11 . [6 marks]
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	Figure 12 is in the insert.
	Figure 12 shows a food web diagram of a coastal lagoon in Italy.
0 6.3	Using Figure 12 and your own knowledge, assess the potential impact of human activity on this food web.
	[9 marks]
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0 6 . 4	How far do you agree that changes to the carbon cycle are leading to an increasingly uncertain future for coral reefs?
	[9 marks]



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0 6.5	With reference to one plagioclimax in the British Isles, assess the factors affecting change and development in this ecosystem. [20 marks]

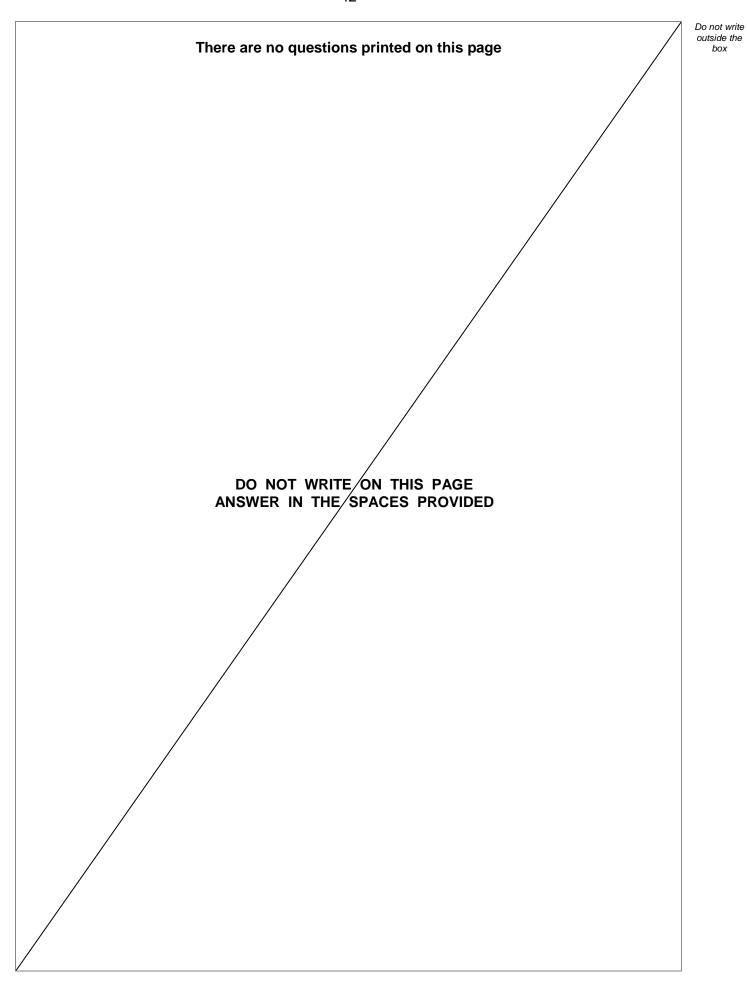


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END OF QUESTIONS	







Question number	Additional page, if required. Write the question numbers in the left-hand margin.



Question number	Additional page, if required. Write the question numbers in the left-hand margin.

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