



Monday 22 May 2023 – Afternoon

GCSE (9–1) Geography B (Geography for Enquiring Minds)

J384/01 Our Natural World

Time allowed: 1 hour 15 minutes

You must have:

• the Resource Booklet (inside this document)

You can use:

- a ruler (cm/mm)
- a scientific or graphical calculator



Please write clearly in black inl	. Do not write in the barcodes.		
Centre number	Candidate number		
First name(s)		 	
Last name			

INSTRUCTIONS

- Use black ink. You can use an HB pencil, but only for graphs and diagrams.
- Write your answer to each question in the space provided. If you need extra space use the lined pages at the end of this booklet. The question numbers must be clearly shown.
- · Answer all the questions.

INFORMATION

- The total mark for this paper is 70.
- The marks for each question are shown in brackets [].
- Quality of extended response will be assessed in questions marked with an asterisk (*).
- Spelling, punctuation and grammar (SPaG) and the use of specialist terminology will be assessed in questions marked with a pencil ().
- This document has 16 pages.

ADVICE

· Read each question carefully before you start your answer.

Section A

Global Hazards

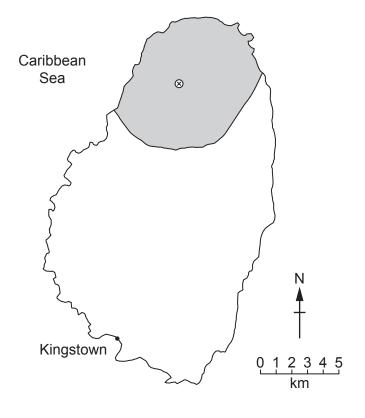
- 1 (a) (i) Identify the type of plate movement that occurs at a destructive plate boundary.
 - A plates move away from each other
 - B plate moves over rising magma
 - C plates move past each other
 - **D** plates move towards each other

Write the correct letter in the box.		[1]

(ii) Use the information in the table below to **complete** the volcanic hazard map for the island of St Vincent. Zone 1 has been completed for you.

Zone	Distance from La Soufrière Volcano
2 High risk	4–7 km
3 Moderate risk	7–10 km

Volcanic Hazard Map for the Island of St Vincent



Zone 1 Very high risk

 $\begin{array}{c|c} \times \times \\ \times \times \end{array}$ Zone 2 $\times \times$ High risk

Zone 3
Moderate risk

⊗ La Soufrière Volcano

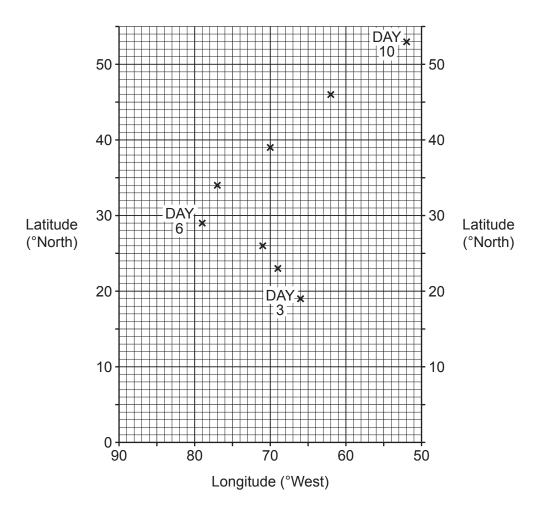
(b) The movements of tropical storms like hurricanes can be plotted on graphs. This is called the **track** of a hurricane.

The graph shows the **track** of a hurricane in the western Atlantic Ocean.

(i) Use the data in the table to complete the hurricane track.

	°West	°North	
Day 1	59	13	
Day 2	64	17	

[2]



(ii) Suggest one way this graph could be adapted to improve it.

[1]

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(c) CASE STUDY

A natural weather nazard arising from extreme weather conditions		
Name of a chosen natural weather hazard		
Explain the consequences of the natural weather hazard.		
[6]		

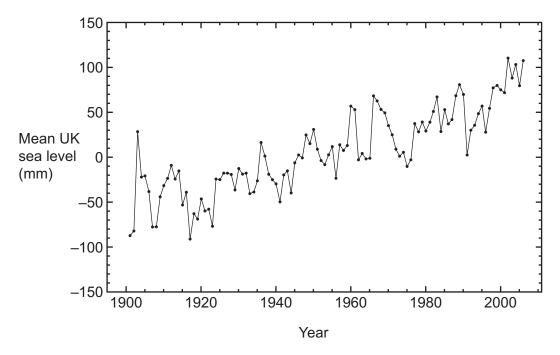
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Changing Climate

2 (a) The graph shows changes in mean UK sea level from 1900 to 2010.



Sug	gest how the changes in mean UK sea level could be linked to global temperatures.	
(i)	What is sea ice ?	[2]

- A frozen ocean waterB frozen river water
 - C icebergs and glaciers floating on the sea
 - **D** ice from land floating on the sea

Write the correct letter in the box.		[1]

(b)

	(ii)	Look at Fig. 1 in the Resource Booklet.
		Fig. 1 shows changes in winter sea ice volume in the Arctic, 1980–2010.
		Calculate the mean annual volume of ice loss.
		Show your working.
		km ³ /year [2]
(c)*	Ass	km ³ /year [2] ess the extent to which climate change is a natural process.
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.....[8] **Turn over**

Distinctive Landscapes

(a)	Ider	ntify the correct definition of a landscape.	
	Α	everything that can be seen that is natural or man-made	
	В	land that has been altered by human activity	
	С	land that has been built on before	
	D	urban green spaces that are looked after by people	
	Writ	te the correct letter in the box.	[1]
(b)	Loo	k at Fig. 2 in the Resource Booklet.	
	Fig.	. 2 shows a map of UK upland, lowland and glaciated areas.	
	(i)	Using Fig. 2 identify one similarity and one difference between the location of upland and glaciated areas in the UK.	ł
		Similarity	
		Difference	
			[2]
	(ii)	Suggest one reason for the similarity you have identified.	[-]
			[1]

(c)	Explain the formation of a river levee .
	[3]
(d)	CASE STUDY
	Coastal landscape in the UK
	Name of a UK coastal landscape you have studied
	Explain the formation of one landform formed by geomorphic processes in your chosen coastal landscape.
	[61]

Sustaining Ecosystems

1	(a)	Loc	ok at Fig. 3 in the Resource Booklet.	
		Fig	. 3 shows the average daily sunshine hours per month for a polar Arctic region.	
		(i)	Identify which month is most likely to be light throughout the night.	
				[1]
		(ii)	The Arctic summer lasts for three months from June to August.	
			Calculate the total summer sunshine hours.	
				[1]
		(iii)	Select an alternative method that would be appropriate to present the data shown in Fig. 3 .	n
			A line graph	
			B radial graph	
			C rose graph	
			D scatter graph	
			Write the correct letter in the box.	[1]
	(b)	lde	ntify and explain two features of flora that allow them to survive in polar environments	i <u>.</u>
		1		
		2		
				[4]

(c) CASE STUDY

Small-scale example of sustainable management in either the Antarctic or the Arctic
Name of a sustainable management example
Examine the usefulness of small-scale management in providing a sustainable solution for your chosen polar environment.
rec
[6]

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Section B

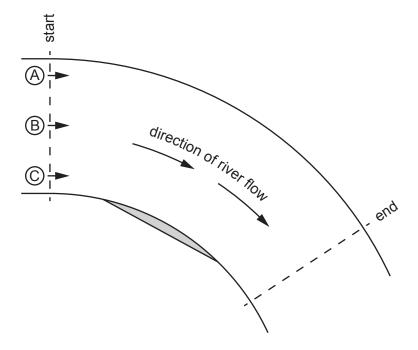
Physical geography fieldwork

5	(a)	Justify the selection of one technique you have used to present data for a fieldwork investigation you have completed.					
			ΓO				

(b) Some GCSE geography students were investigating how the speed of a river changes across the river channel on a meander.

To collect their data, they timed how long it took an orange to travel 10 m at **three** different places across the meander, shown in the diagram below.

They attempted the experiment three times.



The table shows the length of time it took for the orange to travel 10 m at each place across the meander.

Place on river bend	Attempt 1 (seconds)	Attempt 2 (seconds)	Attempt 3 (seconds)	Mean (seconds)	Mean Speed (metres per second)
A	28	26	22	25.3	
В	32	33	34	33.0	
С	38	32	33		0.3

(i) Calculate the mean speed of the river at place A and place

Write your answer to **one** decimal place.

You may find the following formula useful.

Speed =
$$\frac{\text{Distance}}{\text{Time}}$$

Place B	 Г2

(ii) Calculate the mean time taken at place C.

Write your answer to **one** decimal place.

	Place C[1]
(iii)	Suggest two observations about the data collected in the table.
	1
	2

[2]

14

(iv)* Look at the table below, that shows the method the students used to collect the fieldwork data.

Place on river bend	Attempt 1 (seconds)	Attempt 2 (seconds)	Attempt 3 (seconds)	Mean (seconds)	Mean Speed (metres per second)
A	28	26	22	25.3	
В	32	33	34	33.0	
С	38	32	33		0.3

Suggest how the data collection method could be improved .					
[8]					
Spelling, punctuation and grammar and the use of specialist terminology [3]					

END OF QUESTION PAPER

15 ADDITIONAL ANSWER SPACE

If additional space is required, you should use the following lined page(s). The question number(s) must be clearly shown in the margin(s).					
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