



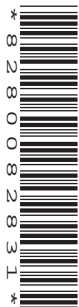
Oxford Cambridge and RSA

**Wednesday 17 November 2021 – Afternoon**

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

**J384/01 Our Natural World**

**Time allowed: 1 hour 10 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 ink. **Do not write in the barcodes.**

Centre number

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Candidate number

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First name(s)

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Last name

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**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 **63**.
- 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

Answer **all** the questions.

**Global Hazards**

1 (a) What type of winds are usually associated with low pressure systems?

..... [1]

(b) Explain how the global circulation system causes extremes of rainfall in **one** part of the world.

.....  
.....  
.....  
..... [2]

(c) (i) Select the correct definition of drought.

- A not enough water to drink
- B prolonged period with unusually low rainfall
- C two weeks without rainfall
- D two years of low rainfall

Write the correct letter in the box.  [1]

(ii) Study **Fig. 1** in the separate Resource Booklet, which shows overall drought risk in South America.

Describe the pattern of areas at high risk of drought shown in **Fig. 1**.

.....  
.....  
.....  
.....  
..... [3]



**Changing Climate**

2 (a) (i) Study **Fig. 2** in the separate Resource Booklet, which shows a section of an ice core.  
Using **Fig. 2**, state how many years of snow accumulation are shown by this ice core.

.....  
..... [1]

(ii) Which of the following would be the **most** useful piece of information which could be added to **Fig. 2**.

- A scale showing the dates before present
- B thickness in cm
- C thickness in km
- D where the ice core came from

Write the correct letter in the box.  [1]

(b) Outline the theory of how sunspots are linked to climate change.

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..... [3]



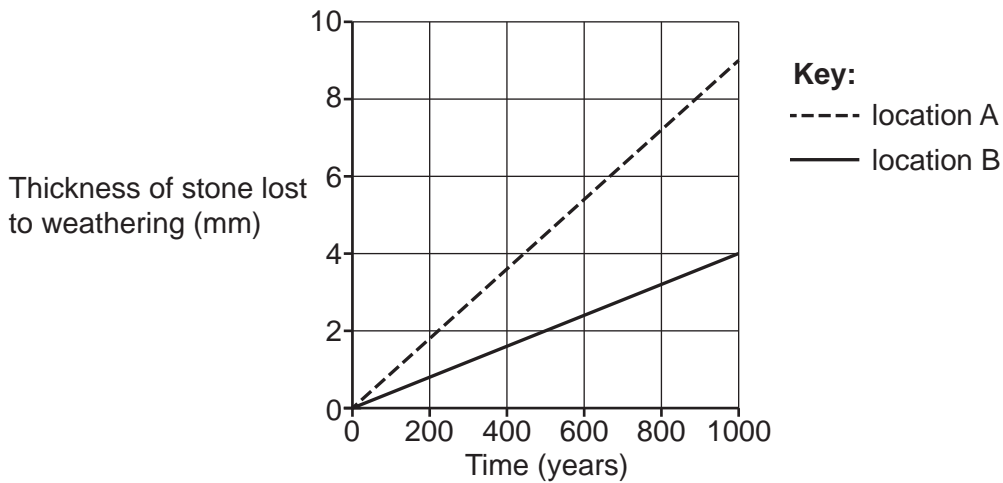
**Distinctive Landscapes**

3 (a) Which of the following is a type of biological weathering?

- A rainwater containing acid breaks down rocks
- B rainwater containing dissolved CO<sub>2</sub> breaks down rocks
- C tree roots split open cracks in rocks
- D water melts and freezes in cracks in rocks to split them open

Write the correct letter in the box.  [1]

(b) The graph below shows the rate of weathering for two identical pieces of limestone that were weathered in different locations.

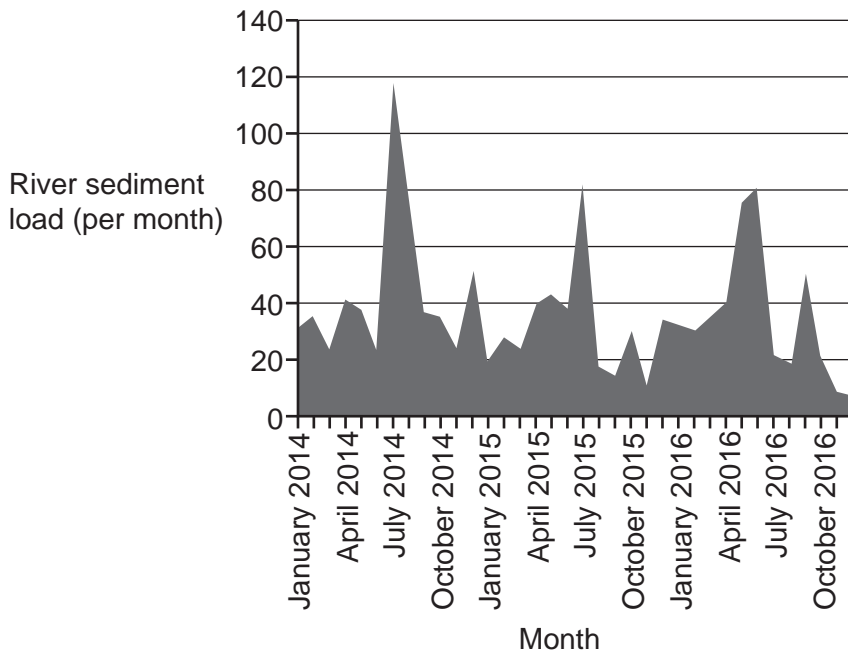


(i) What is the difference in the amount of weathering after 1000 years?  
 ..... mm [1]

(ii) At which location has the limestone weathered faster?  
 ..... [1]

(iii) Suggest **one** factor that could cause this difference in weathering.  
 ..... [1]

(c) (i) Look at the graph below showing river sediment load over three years.



Select the correct description of the pattern shown on the graph.

- A sediment load changes in equal two-month cycles
- B sediment load fluctuates but shows no overall pattern
- C sediment load fluctuates each year with a peak in January
- D sediment load fluctuates each year with a peak in summer

Write the correct letter in the box.

[1]

(ii) Suggest **two** reasons for variations in the sediment load of a river.

- 1 .....
- .....
- 2 .....
- .....

[2]





**Sustaining Ecosystems**

4 (a) Study **Fig. 3** in the separate Resource Booklet, which shows a climate graph for a tropical rainforest.

(i) Calculate the total rainfall for January, February and March.

- A 85 mm
- B 325 mm
- C 525 mm
- D 845 mm

Write the correct letter in the box.  [1]

(ii) State the annual temperature range for the tropical rainforest climate in **Fig. 3**.  
..... [1]

(b) Explain the importance of nutrient cycling in the rainforest.  
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..... [3]

**(c)\* CASE STUDY – a small-scale example of sustainable management in either the Arctic or Antarctic**

Name of small-scale sustainable management example:

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Assess the impact of **one** small-scale example of sustainable management in either the Arctic or the Antarctic ecosystem.

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..... [8]

11

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**Turn over for the next question**

## SECTION B

Answer the question.

### Physical Geography Fieldwork

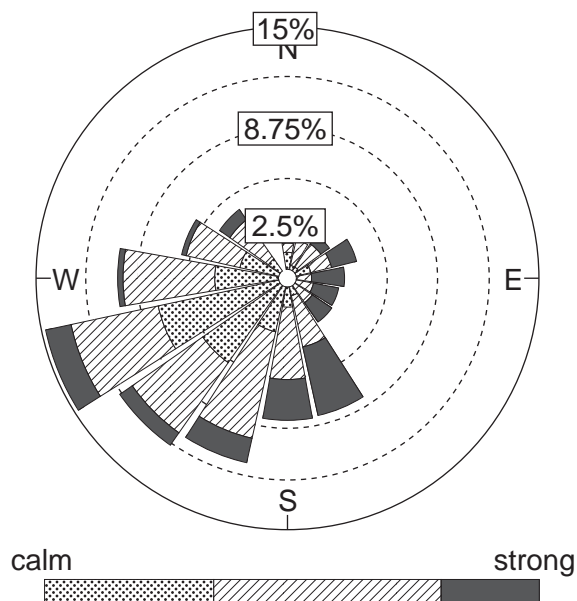
- 5\* Students were investigating the effect of wind direction on longshore drift on part of the Holderness coast. Longshore drift is the movement of material along a coastline due to the angled approach of waves.

They were testing the hypothesis that 'Sediment size will decrease in the direction of the strongest winds.'

The students calculated the mean sediment size on the beach in four locations on the Holderness coast. The map below shows the primary data collected by the students at the four locations.



The students used secondary data to discover wind directions on the Holderness coast over the last five years.





**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).

A large area of lined paper for writing. It features a vertical solid line on the left side, creating a margin. The rest of the page is filled with horizontal dotted lines, providing space for writing answers.

A series of horizontal dotted lines for writing, spanning the width of the page. A solid vertical line is positioned on the left side, approximately one-tenth of the way across the page, creating a margin.

