

Cambridge International AS & A Level

GEOGRAPHY

9696/33

Paper 3 Advanced Physical Geography Options

October/November 2023

1 hour 30 minutes

You must answer on the enclosed answer booklet.

You will need: Answer booklet (enclosed)
Insert (enclosed)

INSTRUCTIONS

- Answer **four** questions in total:
 - Answer questions from **two** options.
 - For **each** option, follow the instructions inside on which questions to answer.
- Follow the instructions on the front cover of the answer booklet. If you need additional answer paper, ask the invigilator for a continuation booklet.
- Sketch maps and diagrams should be drawn whenever they serve to illustrate an answer.
- You should make reference to appropriate examples studied in the field or the classroom, even where such examples are not specifically requested by the question.

INFORMATION

- The total mark for this paper is 60.
- The number of marks for each question or part question is shown in brackets [].
- The insert contains all the resources referred to in the questions.

Answer questions from **two** different options.

Tropical environments

If answering this option, answer Question 1 and **either** Question 2 **or** Question 3.

- 1 Fig. 1.1 is a photograph which shows the vegetation of a humid tropical (rainforest) ecosystem.
 - (a) Describe the main characteristics of the vegetation shown in Fig. 1.1. [4]
 - (b) Explain **two** of the characteristics of the vegetation you described in (a). [6]
- 2 Evaluate the role of deep weathering in the development of characteristic granite landforms of tropical environments. [20]
- 3 Using a case study of **one** tropical ecosystem, assess the relative significance of the problems of its sustainable management. [20]

Coastal environments

If answering this option, answer Question 4 and **either** Question 5 **or** Question 6.

- 4 Fig. 4.1 shows the impacts of extreme weather events on coastal erosion in Kosrae State, Micronesia, Pacific Ocean.
 - (a) Describe the distribution of the impacts of extreme weather events on coastal erosion shown in Fig. 4.1. [4]
 - (b) Explain **two** factors that might influence rates of erosion along coastlines. [6]
- 5 Assess the extent to which management strategies can reduce threats to coral reefs. [20]
- 6 'Sea-level rise affects coastal depositional landforms more than coastal erosional landforms.' How far do you agree with this view? [20]

Hazardous environments

If answering this option, answer Question 7 and **either** Question 8 **or** Question 9.

7 Fig. 7.1 shows the recurrence intervals and impacts for selected natural hazards.

(a) Compare the relationships between recurrence intervals and impacts for the natural hazards as shown in Fig. 7.1. [3]

(b) Explain why volcanoes can have greater impacts than earthquakes. [7]

8 Assess the view that high winds are the most significant hazard of large-scale atmospheric disturbances. [20]

9 To what extent is it difficult to prepare for mass movement hazards? [20]

Hot arid and semi-arid environments

If answering this option, answer Question 10 and **either** Question 11 **or** Question 12.

10 Fig. 10.1 shows the influence of sand supply, wind and vegetation on the type of sand dune.

(a) Describe the general relationship between sand supply, wind and vegetation and the type of sand dune shown in Fig. 10.1. [4]

(b) Explain the formation of sand dunes. [6]

11 To what extent are plants in hot arid and semi-arid environments adapted to physical and physiological drought rather than extreme temperatures? [20]

12 Using a case study of **either** a hot arid **or** a semi-arid environment, evaluate solutions to the problems of its sustainable management. [20]

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