



# Cambridge International AS & A Level

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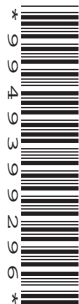
## GEOGRAPHY

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)

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## 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.

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This document has **4** pages. Any blank pages are indicated.

## 2

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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