



Cambridge International AS & A Level

GEOGRAPHY

9696/31

Paper 3 Advanced Physical Geography Options

May/June 2024

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.

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

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 shows a pyramid of biomass for a seasonally humid tropical (savanna) ecosystem.
- (a) Describe the pattern of biomass stores shown in Fig. 1.1. [3]
- (b) Explain the pattern you described in (a). [7]
- 2 Assess the relative importance of the processes involved in the formation of different tropical karst landforms. [20]
- 3 'The most important factor influencing tropical climates is atmospheric pressure.'
- How far do you agree with this view? [20]

Coastal environments

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

- 4 Fig. 4.1 shows erosion rates along a section of a barrier island near Lagos, Nigeria, 2001–13.
- (a) Describe the pattern of erosion rates shown in Fig. 4.1. [3]
- (b) Suggest **two** reasons for the pattern you described in (a). [7]
- 5 Assess the relative importance of the factors influencing the formation of coastal saltmarshes **and** mangroves. [20]
- 6 'The characteristics and formation of fringing reefs, barrier reefs, and atolls are very different.'
- 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 pyroclastic flows from Soufrière Hills volcano, Montserrat, on 8 January 2010.
- (a) Describe the pattern of pyroclastic flows shown in Fig. 7.1. [4]
- (b) Explain how pyroclastic flows are formed. [6]
- 8 Assess the extent to which impacts of hazards resulting from atmospheric disturbances vary. [20]
- 9 Using a case study, evaluate the problems of sustainable management of a hazardous environment. [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 is a photograph which shows a hot arid landscape in Namibia.
- (a) With the aid of a labelled diagram, describe the main physical features of landform A shown in Fig. 10.1. [4]
- (b) Explain the formation of landform A shown in Fig. 10.1. [6]
- 11 Using a case study, evaluate the solutions to the problems of sustainable management in **either** a hot arid **or** semi-arid environment. [20]
- 12 Assess the extent to which aridity is caused by the rain shadow effect. [20]

BLANK PAGE

The boundaries and names shown, the designations used and the presentation of material on any maps contained in this question paper/insert do not imply official endorsement or acceptance by Cambridge Assessment International Education concerning the legal status of any country, territory, or area or any of its authorities, or of the delimitation of its frontiers or boundaries.

Permission to reproduce items where third-party owned material protected by copyright is included has been sought and cleared where possible. Every reasonable effort has been made by the publisher (UCLES) to trace copyright holders, but if any items requiring clearance have unwittingly been included, the publisher will be pleased to make amends at the earliest possible opportunity.

To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced online in the Cambridge Assessment International Education Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download at www.cambridgeinternational.org after the live examination series.

Cambridge Assessment International Education is part of Cambridge Assessment. Cambridge Assessment is the brand name of the University of Cambridge Local Examinations Syndicate (UCLES), which is a department of the University of Cambridge.