



Cambridge International AS & A Level

GEOGRAPHY

9696/31

Paper 3 Advanced Physical Geography Options

October/November 2021

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 is a photograph which shows vegetation in a seasonally humid tropical (savanna) ecosystem.
- (a) Describe **four** characteristics of the vegetation shown in Fig. 1.1. [4]
- (b) Explain the characteristics of the vegetation shown in Fig. 1.1. [6]
- 2 Using a case study of **either** a humid tropical (rainforest) ecosystem **or** a seasonally humid tropical (savanna) ecosystem, assess the significance of threats from its exploitation. [20]
- 3 Assess the variability of temperature and rainfall between humid tropical and seasonally humid tropical environments. [20]

Coastal environments

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

- 4 Fig. 4.1 shows total erosion along the Holderness coastline, UK, 2003–2017.
- (a) Describe the pattern of total erosion shown in Fig. 4.1. [4]
- (b) Explain why rates of erosion vary along coastlines. [6]
- 5 'Sea-level rise is the main threat to coral reefs.'
- How far do you agree with this statement? [20]
- 6 Assess the extent to which depositional landforms in coastal environments are the result of longshore drift. [20]

Hazardous environments

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

- 7 Fig. 7.1 shows trends in frequency of tornadoes in part of the USA. Fig. 7.2 shows the names of the states shown in Fig. 7.1.
- (a) Describe the pattern of trends in frequency of tornadoes shown in Fig. 7.1. [4]
- (b) Explain why the location of tornadoes varies. [6]
- 8 'It is easier to prepare for the hazards of cyclones, hurricanes and typhoons than it is for tornadoes.'
How far do you agree with this statement? [20]
- 9 Assess the view that pyroclastic flows are the most significant hazards from volcanic eruptions. [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 current and former perennial streams of the San Pedro River, Arizona, USA.
- (a) Compare the pattern of current and former perennial streams shown in Fig. 10.1. [4]
- (b) Explain why some streams in arid environments are perennial whereas others are not. [6]
- 11 Assess the extent to which the rain shadow effect is the main cause of aridity. [20]
- 12 Using a case study of **either** a hot arid **or** a semi-arid environment, evaluate the problems of its sustainable management. [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 the Cambridge Assessment Group. Cambridge Assessment is the brand name of the University of Cambridge Local Examinations Syndicate (UCLES), which itself is a department of the University of Cambridge.