



Cambridge International AS & A Level

GEOGRAPHY

9696/32

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 shows the nutrient cycle for a humid tropical (rainforest) ecosystem.
- (a) Compare the size of the flows and stores in the nutrient cycle shown in Fig. 1.1. [4]
- (b) Explain how deforestation is likely to affect the nutrient cycle shown in Fig. 1.1. [6]
- 2 Evaluate the view that chemical weathering is the most important influence on the formation of tropical karst landforms. [20]
- 3 For **one** type of tropical ecosystem, assess the role of climate in the development of soil types and profile characteristics. [20]

Coastal environments

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

- 4 Fig. 4.1 shows level of risk to coral reefs in regions of the world.
- (a) Compare the level of risk between the regions shown in Fig. 4.1. [4]
- (b) Explain **two** reasons why the level of risk to coral reefs varies. [6]
- 5 'The erosion of coastal cliffs is the main source of sediment in coastal areas.'
- How far do you agree? [20]
- 6 To what extent are the advantages of a hard engineering approach greater than the disadvantages for the sustainable management of coasts? [20]

Hazardous environments

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

- 7 Fig. 7.1 shows the number of tornadoes and the number of tornado-related deaths, USA, 2012–18.
- (a) Describe the relationship between the number of tornadoes and the number of tornado-related deaths shown in Fig. 7.1. [3]
- (b) Suggest reasons for the relationship you described in (a). [7]
- 8 Evaluate the relative importance of hazards resulting from earthquakes. [20]
- 9 'It is very difficult to prepare for the hazards from mass movements.'
- How far do you agree with this statement? [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 flash flood in a hot arid environment in Algeria.
- (a) Describe the characteristics of the flash flood shown in Fig. 10.1. [4]
- (b) Explain the role of flash floods in shaping landforms in a hot arid environment. [6]
- 11 'Salt crystal growth is the most important weathering process in hot arid and semi-arid environments.'
- How far do you agree? [20]
- 12 Assess the variability of temperature and precipitation between hot arid and semi-arid environments. [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.