

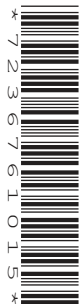


Cambridge International AS & A Level

GEOGRAPHY

9696/33

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.

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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]

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