



UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
General Certificate of Education Advanced Subsidiary Level and Advanced Level

GEOGRAPHY

9696/23

Paper 2 Advanced Physical Options

October/November 2010

1 hour 30 minutes

Additional Materials: Answer Booklet/Paper



READ THESE INSTRUCTIONS FIRST

If you have been given an Answer Booklet, follow the instructions on the front cover of the Booklet.

Write your Centre number, candidate number and name on all the work you hand in.

Write in dark blue or black pen.

You may use a soft pencil for any diagrams, graphs or rough working.

Do not use staples, paper clips, highlighters, glue or correction fluid.

Answer **two** questions only. Each question answered **must** be from a different topic.

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 classroom, even where such examples are not specifically requested by the question.

All the Figures referred to in the questions are contained in Insert 1.

Photograph A referred to in Question 4 is contained in Insert 2.

At the end of the examination, fasten all your work securely together.

The number of marks is given in brackets [] at the end of each question or part question.

This document consists of **3** printed pages, **1** blank page and **2** Inserts.



Tropical environments

Only **one** question may be answered from this topic.

- 1 (a) Describe and explain the main characteristics of tropical monsoon climates. [10]
- (b) Why are ecosystems of **either** the tropical rainforest **or** the savanna difficult to manage in a sustainable way? [15]
- 2 (a) Fig. 1A shows nutrient cycling in undisturbed tropical rainforest.
Fig. 1B shows nutrient cycling after clearance for shifting cultivation.
Compare the nutrient cycles shown in Figs 1A and 1B and account for the differences. [10]
- (b) Explain the term basal surface of weathering. How is the development of tropical granite landforms influenced by the basal surface of weathering? [15]

Coastal environments

Only **one** question may be answered from this topic.

- 3 (a) Explain how swash, backwash and wave refraction can influence the formation of beaches. [10]
- (b) What are the main threats to the continued existence of coral reefs? To what extent can these threats be overcome? [15]
- 4 (a) Photograph A shows some coastal landforms along a chalk coastline in Northern France.
Using a sketch diagram, identify the landforms and explain how they might have developed. [10]
- (b) Explain what is meant by a coastal sediment cell. Using examples, describe the effects of human activities on such sediment cells. [15]

Hazardous environments

Only **one** question may be answered from this topic.

- 5 (a) Explain where and how volcanic eruptions occur. [10]
- (b) Why are volcanic eruptions hazardous? How and with what success can eruptions be predicted? [15]
- 6 (a) Explain the causes and hazardous effects of tsunamis. [10]
- (b) Fig. 2 shows a model of responses to the occurrence of natural hazards.
- Using an example or examples, assess the extent to which the model can be used to explain the responses to a natural hazardous event. [15]

Arid and semi-arid environments

Only **one** question may be answered from this topic.

- 7 (a) Describe the evidence for, and the processes of, weathering in hot arid areas. [10]
- (b) Describe and evaluate the role of water erosion in producing landforms in hot arid areas. [15]
- 8 (a) Fig. 3A shows some features of the ecosystems of hot deserts and Fig. 3B shows the location of the deserts.
- Describe and suggest reasons for the similarities and differences in the desert ecosystems. [10]
- (b) Using an example or examples, discuss the extent to which the nature of arid or semi-arid environments influences and limits their human occupation and development. [15]

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Question 4 Photograph A © www.photo_paysage.com/displayimage.php?album=52&pus=80
Question 6 Fig. 2 © Geo Factsheets No.194; Curriculum Press.

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