



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

**GEOGRAPHY**

**9696/23**

Paper 2 Advanced Physical Options

**May/June 2011**

**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 the classroom, even where such examples are not specifically requested by the question.  
All the Figures referred to in the questions are contained in the Insert.

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 **1** Insert.



### Tropical environments

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

- 1 Fig. 1 shows a typical soil profile in a tropical environment.
- (a) Describe and explain how soil forming processes lead to the development of such a profile. [10]
- (b) For **either** the tropical rainforest **or** the savanna ecosystem, discuss the extent to which a sustainable approach to management can be a success. [15]
- 2 (a) With the aid of a diagram, describe the patterns of nutrient cycling in **either** tropical rain forests **or** savannas. For **either** the tropical rainforest **or** the savanna, explain how human exploitation may affect nutrient cycling. [10]
- (b) Explain the nature and effectiveness of weathering processes operating under humid and seasonably humid tropical conditions. Describe and explain the development of landforms in areas of **either** granite **or** limestone in tropical environments. [15]

### Coastal environments

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

- 3 Fig. 2 shows some coastal landforms.
- (a) Describe the landforms shown in Fig. 2 and explain how they were formed. [10]
- (b) Using examples, explain the extent to which human activities have influenced depositional processes and landforms in coastal areas. [15]
- 4 (a) Explain how different types of wave are generated and describe their effects on beaches. [10]
- (b) Describe and assess the success of attempts to manage sustainably a stretch or stretches of coastline. [15]

### Hazardous environments

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

- 5 Fig. 3 shows the location and magnitude of earthquakes in one week in June 2010.
- (a) Use Fig. 3 to describe the world distribution of earthquakes in June 2010. Explain how an earthquake may have been generated at one of the areas shown. [10]
- (b) Describe the types of hazard created by volcanic eruptions. What measures can be taken to reduce the hazardous effects of volcanic eruptions and how effective are they? [15]
- 6 (a) Explain the nature of tropical storms (hurricanes) and describe where they most frequently occur. [10]
- (b) To what extent is it possible to predict hurricanes and to limit the loss of life from their hazardous effects? [15]

### Arid and semi-arid environments

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

- 7 (a) Fig. 4 shows some types of sand dune found in deserts.  
Describe and explain the different shapes of the desert sand dunes. (10)
- (b) Using an example explain why the nature of **either** an arid **or** a semi-arid environment poses problems in its management. (15)
- 8 (a) Describe how plants are adapted to drought conditions in hot deserts. [10]
- (b) What are the main sources of water in hot deserts? How might these influence sustainable development in these areas? [15]

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