



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 2013**

**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 and the Photographs 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 (a) Describe the nature of the Inter Tropical Convergence Zone (ITCZ) and explain how the seasonal movement of the ITCZ and air masses can influence tropical climates. [10]

- (b) Fig. 1 shows nutrient cycling in tropical rainforests.

Briefly describe the ways in which nutrients are cycled in Fig. 1. Explain the changes that would occur in the nutrient cycle after shifting cultivation has taken place. [15]

- 2 (a) Explain how deep weathering profiles develop in humid tropical areas. How can these deep weathering profiles influence the development of granite landforms? [10]

- (b) Describe the main characteristics of the savanna ecosystem. To what extent are savanna ecosystems the result of human interference? [15]

### Coastal environments

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

- 3 (a) Describe the characteristics of coral and explain how coral reefs and atolls were formed. [10]

- (b) Photograph A shows some coastal landforms.

Using a sketch diagram, identify the landforms and explain their formation. To what extent are such depositional landforms fragile environments that can be rapidly altered by physical processes and human interference? [15]

- 4 (a) Explain the processes that lead to the development of a wave-cut platform. [10]

- (b) Describe the nature of a coastal sediment cell. Explain how studying sediment cells can give an understanding of the processes operating along a coastline and can help plan its management. [15]

### Hazardous environments

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

- 5 (a) Describe the main types of volcanic eruption and explain where they occur. [10]

- (b) Fig. 2 shows some methods of prediction of volcanic eruptions.

Explain how these methods can be employed for predicting eruptions. Describe the types of volcanic hazard that are important to predict in order to minimise deaths. [15]

- 6 (a) Explain the causes of hazardous mass movements. [10]

- (b) Using examples, describe the types of hazard that result from mass movements and explain how far it is possible to manage the risks to human life. [15]

### Arid and semi-arid environments

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

- 7 (a) Explain the causes of aridity. Describe the characteristics of a hot arid climate in terms of precipitation, temperature and wind. [10]

- (b) Photograph B shows some landforms found in hot arid areas.

Draw a sketch diagram to identify the landforms. Explain how the landforms were formed and to what extent they are the result of weathering and erosional processes operating today. [15]

- 8 (a) Describe what is meant by biomass productivity, physical drought and physiological drought in hot arid environments. Explain how these factors affect soil characteristics in these environments. [10]

- (b) Explain how desertification has occurred in semi-arid areas. To what extent is it possible to stop desertification and reverse its effects? [15]

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**Copyright Acknowledgements:**

- Question 1 Fig. 1           © *Geo Fact Sheet 25*; September 1997.  
Question 3 Photograph A   © www.fortunecity.com.  
Question 5 Fig. 2         © V Bishop; *Hazards and Responses*; Collins Landmark Geography; Collins; 2001.  
Question 7 Photograph B   © www.our-kerala.com.

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