



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

**GEOGRAPHY**

**9696/21**

Paper 2 Advanced Physical Options

**May/June 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) Explain the role of the ITCZ (inter tropical convergence zone) in determining the distribution of temperatures and rainfall totals in the humid and seasonally humid tropics. [10]
- (b) To what extent do the processes of weathering and erosion influence the types of landforms found in humid and seasonally humid tropical environments? [15]
- 2 (a) Photographs A and B show areas of tropical rainforest and savanna vegetation.  
Describe and explain the differences between the types of tropical vegetation shown. [10]
- (b) Describe and evaluate a scheme, or schemes, for sustainable management in **either** a tropical rainforest **or** a savanna ecosystem. [15]

### Coastal environments

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

- 3 (a) Explain how the profile and plan form of beaches are affected by the action of constructive and destructive waves. [10]
- (b) To what extent are rock type and structure important in the development of landforms along cliffed coasts? [15]
- 4 (a) Fig. 1 shows some threats to coral reefs.  
Explain how any **three** of the threats shown in Fig. 1 can affect the conditions necessary for the growth of coral and the survival of coral reefs. [10]
- (b) Assess the advantages and disadvantages of soft engineering and hard engineering approaches to the sustainable management of coasts. [15]

### Hazardous environments

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

- 5 (a) Explain why tectonic hazards associated with convergent plate margins are usually more devastating than those at other types of plate margin. [10]
- (b) To what extent is the prediction of volcanic eruptions more successful than the prediction of some other types of hazard? In what ways may the hazardous impact of volcanic eruptions be reduced? [15]
- 6 (a) Fig. 2 shows the percentage of deaths from different impacts of tropical storms (cyclones) in Bangladesh. Fig. 3 shows the location of Bangladesh.
- Suggest reasons for the variations in the numbers of deaths from tropical storms occurring in Bangladesh. [10]
- (b) Explain the nature and causes of hazardous mass movements on slopes and evaluate their effects on lives and property. [15]

### Arid and semi-arid environments

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

- 7 (a) Describe the processes of erosion, transport and deposition by wind and explain their contribution to the development of **one** type of desert landform. [10]
- (b) Evaluate the contribution of water, both present and past, in the development of desert landforms. [15]
- 8 (a) Fig. 4 gives climate data for A, a hot arid environment and B, a semi-arid environment.
- Describe and explain the differences between the two types of climate as represented by the data shown in Fig. 4. [10]
- (b) Describe the characteristics of soils in hot arid and semi-arid environments. Explain how plants and animals have adapted successfully to aridity. [15]

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*Copyright Acknowledgements:*

Question 2 Photograph A      © [http://ecolibrary.org/images/full\\_image/Tropical\\_rainforest\\_Costa\\_Rica\\_DP25.jpg](http://ecolibrary.org/images/full_image/Tropical_rainforest_Costa_Rica_DP25.jpg); 7 March 2012.  
Question 2 Photograph B      © <http://environment.nationalgeographic.com/environment/photos/savannah>; 7 March 2012.  
Question 4 Fig. 1              © <http://www.seos-project.eu/modules/coralreefs/coralreefs-c03-p01.html>; 7 March 2012.

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