

**GEOGRAPHY**

**9696/23**

Paper 2 Advanced Physical Options

**October/November 2014**

**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 an HB pencil for any diagrams or graphs.

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

**DO NOT WRITE IN ANY BARCODES.**

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 Photograph 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) Fig. 1 shows outline soil profiles for A, tropical rainforest and B, savanna ecosystems.

Explain the factors and processes that determine the characteristics of tropical rainforest and savanna soils such as those shown in Fig. 1. [10]

- (b) For **one** tropical ecosystem, evaluate an example, or examples, of attempts at sustainable management. [15]

- 2 (a) Explain how the seasonal climatic characteristics of tropical monsoons are related to air masses, wind and pressure systems. [10]

- (b) Describe granite landforms found in humid and seasonally humid tropical environments. Explain the extent to which weathering and erosion contribute to their development. [15]

## Coastal environments

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

- 3 (a) Describe how coastal saltmarshes develop and explain the threats to such saltmarshes and how they may be sustainably managed. [10]

- (b) With the aid of diagrams, describe how cliffs and wave cut platforms develop. Explain the factors and processes which determine differences in the morphology (shape) of cliffs and cliffed coastlines. [15]

- 4 (a) Describe the characteristics of different types of wave breaking on beaches. Explain how wave types and beach sediments affect beach profiles. [10]

- (b) Fig. 2 shows the percentage of coral reefs threatened by changes to the conditions necessary for coral growth.

Explain the nature of the threats shown in Fig. 2. To what extent can these threats and other threats to the continued existence of coral reefs, be overcome? [15]

### Hazardous environments

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

- 5 (a) Describe how tsunamis are generated and explain how they become hazardous in some coastal areas. [10]
- (b) Explain the distribution of those areas of the earth which are subject to the hazardous impact of volcanoes. Evaluate measures that may be taken to manage the hazardous impact of volcanoes. [15]
- 6 (a) Photograph A is a satellite image of a tropical storm, 'hurricane Ivan'.  
Explain how tropical storms develop and describe the hazards generated by them. [10]
- (b) For any **one** hazardous environment, what are the problems of sustainable management? Evaluate any attempted or possible solutions to these problems. [15]

### Arid and semi-arid environments

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

- 7 (a) Fig. 3 shows the main hot semi-arid environments of the world.  
For any **one** continent, describe the distribution of its hot semi-arid environments and explain the characteristics of the climate. [10]
- (b) Explain the processes of desertification and soil degradation in semi-arid or arid areas. Evaluate any scheme to manage such areas sustainably. [15]
- 8 (a) Explain the main weathering processes operating in hot arid and semi-arid environments and describe their effects on the disintegration of rocks. [10]
- (b) Describe and evaluate the present day role of wind and of running water in the development of desert landforms. [15]

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*Copyright Acknowledgements:*

Question 6 Photograph A © <http://environment.nationalgeographic.com/environment/natural-disasters/hurricane-profile/>  
Question 7 Fig. 3 © M.C. Peel, B.L. Finlayson & T. A. McMahon; Koppen\_World\_Map\_Hi-Res.png.

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