

**GEOGRAPHY**

**9696/23**

Paper 2 Advanced Physical Options

**October/November 2016**

**1 hour 30 minutes**

No Additional Materials are required.

**READ THESE INSTRUCTIONS FIRST**

An answer booklet is provided inside this question paper. You should follow the instructions on the front cover of the answer booklet. If you need additional answer paper ask the invigilator for a continuation booklet.

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.

The Figure and all the Photographs referred to in the questions are contained in the Insert.

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) Fig. 1 shows a climate graph for a tropical environment.

Describe the climate shown in Fig. 1. Explain the patterns of temperature and rainfall. [10]

- (b) Explain the weathering processes that operate most effectively under tropical conditions. To what extent do weathering processes determine the development of limestone (tropical karst) landforms? [15]

- 2 For **either** a tropical rainforest ecosystem **or** a savanna ecosystem:

(a) with the aid of a diagram, explain how soil characteristics of the ecosystem develop. [10]

(b) describe the problems of sustainable management and evaluate attempted solutions. [15]

### Coastal environments

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

- 3 (a) Explain how rock type and structure influence the development of different cliff profiles (cross sections). [10]

(b) For **one** scheme of coastal management, explain why the coastline had to be managed. Evaluate the success of the strategies that were used. [15]

- 4 (a) Photograph A shows landforms of a stretch of coastline.

Using an annotated diagram of the coastline shown in Photograph A, identify **three** features and explain their formation. [10]

(b) Explain the conditions required for coral growth and development. Evaluate the impact of **three** threats to the continued existence of coral reefs. [15]

### Hazardous environments

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

- 5 (a) Explain how avalanches are caused. Describe the nature of their hazardous effects. [10]

- (b) Photograph B shows a warning sign related to tsunamis.

Explain how tsunamis are generated. To what extent are predictions and warnings effective in reducing the hazardous effects of tsunamis? [15]

- 6 (a) Explain how and where earthquakes are generated. [10]

- (b) Describe the hazardous effects of different types of volcanic eruptions and their products. Assess the extent to which volcanic eruptions can be predicted. [15]

### Arid and semi-arid environments

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

- 7 (a) Photograph C shows a group of barchan sand dunes in a hot desert environment.

Explain the factors and processes that lead to the development of barchans. Briefly describe and explain the development of **two** other types of desert dune. [10]

- (b) Describe the evidence for climate change in hot arid environments. To what extent were past pluvial climates important in the development of desert landforms? [15]

- 8 (a) Describe and explain the characteristics of hot arid climates. [10]

- (b) For **either** an arid environment **or** a semi-arid environment, assess the extent to which water is the key factor in its sustainable management. [15]

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