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**GEOGRAPHY**

**9696/23**

Paper 2 Advanced Physical Options

**May/June 2016**

**1 hour 30 minutes**

No Additional Materials are required.

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**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.

All the Figures and the Photograph 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.



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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) Describe the structure of vegetation within a tropical rainforest ecosystem and explain how nutrients are cycled. [10]
- (b) Assess the importance of rock type in explaining the development of landforms in humid and sub-humid tropical conditions. [15]
- 2 (a) Fig. 1 shows a soil profile of a latosol.
- Describe the main characteristics of the soil profile in Fig. 1. Suggest reasons for the characteristics identified. [10]
- (b) For **either** a tropical rainforest ecosystem **or** savanna ecosystem, describe the threats that result from human activity. Evaluate strategies to manage this ecosystem sustainably. [15]

### Coastal environments

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

- 3 (a) Describe the characteristics of breaking waves and explain the processes by which waves transport sediment on beaches. [10]
- (b) Fig. 2 shows a theory of atoll formation.
- Using Fig. 2 explain how atolls form. Assess the results of sea level rise on coral reefs. [15]
- 4 (a) Describe the nature of coastal sediment cells. How do processes of sediment movement contribute to the formation of coastal landforms? [10]
- (b) Evaluate the contribution of factors and processes to the development of landforms on cliffed coastlines. [15]

### Hazardous environments

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

- 5 (a) Photograph A shows a snow avalanche.

Describe the nature of snow avalanches, such as the one shown in Photograph A, and explain the hazards produced. [10]

- (b) Explain which areas are most at risk from the hazardous effects of tropical storms (cyclones). To what extent can their hazardous impact be reduced? [15]

- 6 (a) With the aid of diagrams, describe the nature and causes of mass movements. [10]

- (b) Explain the characteristics of tsunamis. To what extent can the occurrence and hazardous impact of tsunamis be predicted? [15]

### Arid and semi-arid environments

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

- 7 (a) Fig. 3 shows diurnal temperatures for winter and summer, for Al Ahsa Oasis, Saudi Arabia.

Describe and explain the pattern of diurnal temperatures shown in Fig. 3. [10]

- (b) Describe the nature and causes of aridity. To what extent do hot arid environments contain evidence of cooler and wetter climates in the past? [15]

- 8 (a) Describe and explain the development of sand dunes in hot arid environments. [10]

- (b) For **either** a hot arid **or** semi-arid environment, describe the nature of soils and evaluate the importance of soils in a scheme of sustainable management. [15]

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