

**GEOGRAPHY**

**9696/33**

Paper 3 Advanced Physical Geography Options

**May/June 2018**

**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.

In this paper there are four Physical Geography options.

**Tropical environments**

**Coastal environments**

**Hazardous environments**

**Hot arid and semi-arid environments**

Answer questions from **two** different options.

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 resources 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.

The total number of marks for this paper is 60.

This document consists of **3** printed pages, **1** blank page and **2** Inserts.

Answer questions from **two** different options.

### Tropical environments

If answering this option, answer Question 1 and **either** Question 2 **or** Question 3.

- 1 Fig. 1.1 shows a model of total annual precipitation and annual mean temperature for ecosystems.
- (a) Using Fig. 1.1, contrast the precipitation and temperatures of tropical rainforest and savanna ecosystems. [4]
- (b) Outline reasons for the variations in precipitation and temperature for the savanna ecosystem shown in Fig. 1.1. [6]
- 2 For **one** tropical ecosystem, assess the extent to which soil fertility is a result of vegetation characteristics. [20]
- 3 Describe some of the threats (exploitation) and assess the problems of sustainable management of **either** the tropical rainforest ecosystem **or** the savanna ecosystem you have studied. [20]

[Total: 30]

### Coastal environments

If answering this option, answer Question 4 and **either** Question 5 **or** Question 6.

- 4 Fig. 4.1 shows a coastal environment.
- (a) With the aid of a labelled diagram, describe the characteristics of **one** coastal depositional landform shown in Fig. 4.1. [3]
- (b) Explain the roles of marine transportation and deposition in the formation of **one** coastal depositional landform shown in Fig. 4.1. [7]
- 5 With the aid of examples, evaluate the role of sea level change in the formation of coastal landforms. [20]
- 6 'Hard engineering techniques are high technology, high cost, unsustainable solutions in coastal environments.'

How far do you agree with this view? [20]

[Total: 30]

### Hazardous environments

If answering this option, answer Question 7 and **either** Question 8 **or** Question 9.

- 7 Fig. 7.1 shows the global distribution of tropical storms (cyclones, hurricanes and typhoons).
- (a) Using Fig. 7.1, describe the global distribution of tropical storms (cyclones, hurricanes and typhoons). [4]
- (b) Outline reasons for the global distribution of tropical storms described in (a). [6]
- 8 'The impacts on lives and property from volcanoes are greater than those from earthquakes.'
- How far do you agree with this view? [20]
- 9 With the aid of examples, assess how prediction, preparedness and monitoring of tornadoes can reduce the impacts on lives and property. [20]

[Total: 30]

### Hot arid and semi-arid environments

If answering this option, answer Question 10 and **either** Question 11 **or** Question 12.

- 10 Fig. 10.1 is a photograph which shows an arid environment.
- (a) With the aid of a labelled diagram, describe **one** erosional landform shown in Fig. 10.1. [4]
- (b) Explain the development of the landform described in (a). [6]
- 11 Assess the extent to which the degradation of soils and vegetation in semi-arid environments is caused by human factors. [20]
- 12 Evaluate the relative importance of physical weathering processes and chemical weathering processes in the formation of landforms in hot arid and semi-arid environments. [20]

[Total: 30]

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