

**GEOGRAPHY**

**9696/31**

Paper 3 Advanced Physical Geography Options

**May/June 2019**

**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 winter dry monsoon and Fig. 1.2 shows a summer wet monsoon.
- (a) Describe the differences in the position of the ITCZ and the pattern of winds between Fig. 1.1 and Fig. 1.2. [4]
- (b) Explain the role of the ITCZ in the monsoons shown in Fig. 1.1 and Fig. 1.2. [6]
- 2 Describe **one** type of tropical karst landscape. Assess the relative importance of water, rock structure and vegetation in its formation. [20]
- 3 Describe the characteristics of the vegetation in **one** tropical ecosystem. Assess the extent to which human activities affect the climax vegetation. [20]

### Coastal environments

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

- 4 Fig. 4.1 is a photograph which shows some coastal landforms.
- (a) Describe the landforms shown in Fig. 4.1. [3]
- (b) Explain the development of the landforms described in (a). [7]
- 5 Assess the role of longshore drift in the formation of depositional landforms in coastal environments. [20]
- 6 'Soft engineering is less expensive and more sustainable than hard engineering in coastal management.'
- With the aid of one or more case studies, how far do you agree with this view? [20]

### Hazardous environments

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

- 7 Fig. 7.1 shows earthquake activity in the area of Christchurch, New Zealand, 2010–12.
- (a) Describe the pattern of earthquake activity shown in Fig. 7.1. [4]
- (b) Suggest reasons for the great amount of earthquake activity in the area shown in Fig. 7.1. [6]
- 8 'Risk from large scale atmospheric disturbances can be completely removed by effective preparation of people and property.'
- How far do you agree with this view? [20]
- 9 Assess the extent to which prediction, hazard mapping and preparedness can reduce the impacts of mass movements on lives and property. [20]

### 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 landforms in Death Valley, USA.
- (a) With the use of a diagram, describe the landforms shown in Fig. 10.1. [4]
- (b) Explain the role of water in the formation of **two** of the landforms described in (a). [6]
- 11 Assess the relative influence of factors leading to the salinisation of soils in hot arid and semi-arid environments. [20]
- 12 With the aid of a case study from **either** a hot arid **or** semi-arid environment, assess the effectiveness of solutions to the problems of sustainable management. [20]

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