
GEOGRAPHY

9696/13

Paper 1 Core Physical Geography

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.

Section A

Answer **all** questions.

Section B

Answer **one** question.

Sketch maps and diagrams should be drawn whenever they serve to illustrate an answer.

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.

Section A

Answer **all** questions in this section.

Hydrology and fluvial geomorphology

- 1 Fig. 1.1 shows hard engineering and soft engineering on a river.
- (a) (i) Name the type of hard engineering shown at A in Fig. 1.1. [1]
- (ii) Name **one** other type of hard engineering shown in Fig. 1.1. [1]
- (b) Explain how **one** type of engineering in Fig. 1.1 helps to prevent river flooding. [3]
- (c) Explain how understanding recurrence intervals can help to predict flood risk. [5]
- [Total: 10]

Atmosphere and weather

- 2 Fig. 2.1 shows daily insolation through the year in the Northern Hemisphere at various latitudes.
- (a) Using Fig. 2.1, state:
- (i) the maximum value of daily insolation on the Earth's surface in February [1]
- (ii) the month in which insolation received at 90° North decreases to zero. [1]
- (b) Briefly explain why the amount of daily insolation varies with latitude. [4]
- (c) Explain how the pattern shown in Fig. 2.1 affects the seasonal variation of temperature in the Northern Hemisphere. [4]
- [Total: 10]

Rocks and weathering

- 3 Fig. 3.1 shows a simplified cross section of the Vajont Valley, Italy, before and after a mass movement.
- (a) Name the type of mass movement shown in Fig. 3.1. [1]
- (b) Using evidence from Fig. 3.1, explain how rock type and rock structure contributed to the mass movement. [4]
- (c) Explain why the role of water is important in causing mass movements such as the one shown in Fig. 3.1. [5]
- [Total: 10]

Section B

Answer **one** question from this section.

Hydrology and fluvial geomorphology

- 4 (a) (i) Define the hydrological terms *throughfall* and *baseflow*. [4]
- (ii) Describe how waterfalls may change over time. [3]
- (b) Using **one** case study of a river flood, explain its impacts on people. [8]
- (c) With the aid of examples, discuss the view that deforestation has the greatest effect on catchment flows. [15]

[Total: 30]

Atmosphere and weather

- 5 (a) (i) Define the terms *radiation cooling* and *albedo*. [4]
- (ii) Explain how the orographic uplift of air may cause precipitation. [3]
- (b) With reference to **one** urban area, describe and explain the effects of human activity on precipitation and humidity. [8]
- (c) With the aid of examples, assess the extent to which absorbed energy is the most important factor in determining the diurnal energy budget. [15]

[Total: 30]

Rocks and weathering

- 6 (a) (i) Briefly describe how afforestation can reduce mass movements on slopes. [3]
- (ii) Briefly describe how vegetation influences the rate of weathering. [4]
- (b) Describe and explain the global pattern of tectonic plates. [8]
- (c) 'Convection currents are the most significant factor in the formation of landforms at convergent plate boundaries.'
- With the aid of examples, how far do you agree? [15]

[Total: 30]

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