



Cambridge International AS & A Level

GEOGRAPHY

9696/13

Paper 1 Core Physical Geography

May/June 2021

1 hour 30 minutes



You must answer on the enclosed answer booklet.

You will need: Answer booklet (enclosed)
Insert (enclosed)

INSTRUCTIONS

- Answer **four** questions in total:
 - Section A: answer **all** questions.
 - Section B: answer **one** question.
- Follow the instructions on the front cover of the answer booklet. If you need additional answer paper, ask the invigilator for a continuation booklet.
- Sketch maps and diagrams should be drawn whenever they serve to illustrate an answer.

INFORMATION

- The total mark for this paper is 60.
- The number of marks for each question or part question is shown in brackets [].
- The insert contains all the resources referred to in the questions.

This document has **4** pages. Any blank pages are indicated.

Section A

Answer **all** questions in this section. All questions are worth 10 marks.

Hydrology and fluvial geomorphology

- 1 Fig. 1.1 and Fig. 1.2 show catchment flows in a drainage basin system before and after deforestation.
- (a) (i) Name flow X in Fig. 1.1. [1]
- (ii) Calculate flow Y in Fig. 1.2. [1]
- (b) Using Fig. 1.1 and Fig. 1.2, describe the changes to the catchment flows after deforestation. [3]
- (c) Suggest reasons for the changes you described in (b). [5]

Atmosphere and weather

- 2 Fig. 2.1 is a photograph which shows weather phenomena.
- (a) (i) Describe the characteristics of the weather shown in Fig. 2.1. [2]
- (ii) Briefly explain the formation of the weather phenomena shown in Fig. 2.1. [3]
- (b) Suggest reasons why precipitation may not result from the weather shown in Fig. 2.1. [2]
- (c) Briefly explain the formation of frontal precipitation. [3]

Rocks and weathering

- 3 Fig. 3.1 shows the location of ocean trenches in the Pacific Ocean.
- (a) Describe the distribution of ocean trenches shown in Fig. 3.1. [3]
- (b) Using Fig. 3.1, explain the formation of ocean trenches. [4]
- (c) Briefly explain the global distribution of ocean ridges. [3]

Section B

Answer **one** question from this section. All questions are worth 30 marks.

Hydrology and fluvial geomorphology

- 4 (a) (i) Describe the formation of a river cliff. [3]
- (ii) Briefly explain **two** characteristics of a drainage basin which influence its drainage density. [4]
- (b) Explain how flood forecasts and warnings may prevent and ameliorate river floods. [8]
- (c) 'Rock type is the most significant influence on the shape of a storm hydrograph.'
With the aid of examples, how far do you agree? [15]

Atmosphere and weather

- 5 (a) (i) Define the atmospheric terms *melting* and *reflected solar radiation*. [4]
- (ii) Briefly explain **one** way solar energy absorbed into the surface affects the diurnal energy budget. [3]
- (b) Explain the seasonal variation in global wind belts. [8]
- (c) 'The most significant effect of human activity on urban climates is on temperature.'
With the aid of examples, how far do you agree? [15]

Rocks and weathering

- 6 (a) (i) Describe the effects of a mass movement flow on a slope. [3]
- (ii) Briefly explain the small-scale movements of sediment on slopes. [4]
- (b) Explain how temperature influences the type and rate of weathering. [8]
- (c) With the aid of case study material, evaluate attempts to reduce mass movement on slopes. [15]

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