



Cambridge International AS & A Level

GEOGRAPHY

9696/11

Paper 1 Core Physical Geography

October/November 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 is a photograph which shows the High Country Rivers, New Zealand.
- (a) Name the type of river channel shown in Fig. 1.1. [1]
 - (b) Draw a cross-section of the river channel from X to Y shown in Fig. 1.1. Label the main features. [4]
 - (c) Suggest reasons for the formation of the channel type shown in Fig. 1.1. [5]

Atmosphere and weather

- 2 Fig. 2.1 shows average solar radiation and average global surface temperature change, 1910–2010.
- (a) State the year when average solar radiation is the highest as shown in Fig. 2.1. [1]
 - (b) Compare the trends in average solar radiation and average global surface temperature change shown in Fig. 2.1. [4]
 - (c) Suggest reasons for the trend in average global surface temperature change shown in Fig. 2.1. [5]

Rocks and weathering

- 3 Fig. 3.1 and Fig. 3.2 show tectonic landforms and processes at two types of convergent plate boundaries.
- (a) Name the process at Z shown in Fig. 3.1. [1]
 - (b) Compare the tectonic landforms and processes between Fig. 3.1 and Fig. 3.2. [5]
 - (c) Explain the formation of tectonic landforms at divergent (constructive) plate boundaries. [4]

Section B

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

Hydrology and fluvial geomorphology

- 4 (a) (i) Define the fluvial terms *solution* and *throughflow*. [4]
- (ii) Briefly explain how turbulent flow causes erosion in river channels. [3]
- (b) Explain how water stores in a drainage basin system are affected by changes in land use. [8]
- (c) 'The characteristics of the soil are 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) Describe the factors involved in the formation of rain. [3]
- (ii) Briefly explain the formation of fog. [4]
- (b) Explain the daytime part of the diurnal energy budget. [8]
- (c) With the aid of examples, assess the extent to which the urban heat island influences other characteristics of urban climate. [15]

Rocks and weathering

- 6 (a) (i) Define the weathering terms *salt crystal growth* and *hydration*. [4]
- (ii) Briefly explain how vegetation root action can lead to the weathering of rocks. [3]
- (b) Explain how rock type affects the type and rate of chemical weathering. [8]
- (c) 'Water is the most important factor influencing mass movement on slopes.'
- With the aid of examples, how far do you agree? [15]

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