



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]

BLANK PAGE

The boundaries and names shown, the designations used and the presentation of material on any maps contained in this question paper/insert do not imply official endorsement or acceptance by Cambridge Assessment International Education concerning the legal status of any country, territory, or area or any of its authorities, or of the delimitation of its frontiers or boundaries.

Permission to reproduce items where third-party owned material protected by copyright is included has been sought and cleared where possible. Every reasonable effort has been made by the publisher (UCLES) to trace copyright holders, but if any items requiring clearance have unwittingly been included, the publisher will be pleased to make amends at the earliest possible opportunity.

To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced online in the Cambridge Assessment International Education Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download at www.cambridgeinternational.org after the live examination series.

Cambridge Assessment International Education is part of the Cambridge Assessment Group. Cambridge Assessment is the brand name of the University of Cambridge Local Examinations Syndicate (UCLES), which itself is a department of the University of Cambridge.