



Cambridge International AS & A Level

GEOGRAPHY

9696/13

Paper 1 Core Physical Geography

October/November 2022

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.

2**Section A**

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

Hydrology and fluvial geomorphology

- 1** Table 1.1 shows the precipitation routes for three land uses.
- (a) Calculate the percentage of precipitation that has entered the ground in the forested area. [1]
 - (b) Compare the precipitation routes for the three land uses shown in Table 1.1. [4]
 - (c) Suggest how the storm hydrograph for a drainage basin in a forested area would differ from that in an urban area. [5]

Atmosphere and weather

- 2** Fig. 2.1 shows a model of daytime and night-time surface temperatures across an urban area.
- (a) With reference to Fig. 2.1, state the land use with the smallest difference between the daytime and night-time surface temperatures. [1]
 - (b) Compare the daytime and night-time surface temperatures across the urban area shown in Fig. 2.1. [4]
 - (c) Suggest reasons for the pattern of daytime and night-time surface temperatures shown in Fig. 2.1. [5]

Rocks and weathering

- 3** Fig. 3.1 is a photograph which shows mass movements on a coastal cliff in Dorset, UK.
- (a) Name the mass movement feature labelled X in Fig. 3.1. [1]
 - (b) Describe the main features of the mass movements shown in Fig. 3.1. [4]
 - (c) Explain the conditions under which mass movements such as those shown in Fig. 3.1 occur. [5]

3

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 *cavitation* and *solution*. [4]
- (ii) Briefly explain the process of saltation within a river channel. [3]
- (b) Describe and explain how the landforms of a braided river channel differ from those of a meandering river channel. [8]
- (c) 'Soft engineering is more effective than hard engineering in the prevention of river floods.'
- With the aid of examples, how far do you agree? [15]

Atmosphere and weather

- 5 (a) (i) Define the atmospheric terms *snow* and *sensible heat transfer*. [4]
- (ii) Describe the enhanced greenhouse effect. [3]
- (b) Describe and explain how the energy budget is different between daytime and night-time. [8]
- (c) 'Land and sea distribution has the greatest effect on seasonal variations in global pressure systems.'
- With the aid of examples, to what extent do you agree? [15]

Rocks and weathering

- 6 (a) (i) Outline the main differences between continental tectonic plates and oceanic tectonic plates. [3]
- (ii) Explain the mass movement process of heave. [4]
- (b) Explain how human activity may decrease the stability of slopes. [8]
- (c) With the aid of examples, assess the extent to which subduction is the most significant process in the formation of landforms associated with the movement of tectonic plates. [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 Cambridge Assessment. Cambridge Assessment is the brand name of the University of Cambridge Local Examinations Syndicate (UCLES), which is a department of the University of Cambridge.