



Cambridge International AS & A Level

GEOGRAPHY

9696/13

Paper 1 Core Physical Geography

May/June 2020

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. Blank pages are indicated.

Section A

Answer **all** questions in this section. All questions carry 10 marks.

Hydrology and fluvial geomorphology

- 1 Fig. 1.1 shows part of a drainage basin system.
- (a) Using Fig. 1.1, name:
- (i) output A [1]
 - (ii) flow B. [1]
- (b) With reference to Fig. 1.1, describe **two** types of below ground flow. [4]
- (c) Explain why channel flow may change over time. [4]

Atmosphere and weather

- 2 Fig. 2.1 shows a simplified diagram of one part of the energy budget over land.
- (a) Using Fig. 2.1:
- (i) calculate the value of energy at A in W/m^2 [1]
 - (ii) name transfer B. [1]
- (b) With reference to Fig. 2.1, describe how solar radiation is absorbed. [4]
- (c) Explain why reflected solar radiation from clouds may vary over time. [4]

Rocks and weathering

- 3 Fig. 3.1 is a photograph which shows a slope that has been modified to reduce mass movement.
- (a) Identify **two** strategies used to increase the stability of the slope shown in Fig. 3.1. [2]
- (b) Describe how **one** strategy you identified in (a) can increase the stability of the slope. [3]
- (c) Explain how human activities may decrease the stability of a slope. [5]

Section B

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

Hydrology and fluvial geomorphology

- 4 (a) (i) Define the fluvial terms *helical flow* and *saltation*. [4]
- (ii) Briefly explain how river bluffs are formed. [3]
- (b) Explain how a storm hydrograph is affected by the size and shape of a drainage basin. [8]
- (c) With the aid of examples, evaluate the effectiveness of flood forecasts **and** warnings in reducing the impacts of river flooding. [15]

Atmosphere and weather

- 5 (a) (i) Briefly explain the formation of hail. [3]
- (ii) Explain how the frontal uplift of air may cause precipitation. [4]
- (b) Explain the global latitudinal pattern of radiation. [8]
- (c) 'The causes of global warming are a result of physical factors.'
With the aid of examples, how far do you agree? [15]

Rocks and weathering

- 6 (a) (i) Define the weathering terms *carbonation* and *hydrolysis*. [4]
- (ii) Briefly explain how rock can be weathered by heating and cooling. [3]
- (b) Explain how **two** factors affect the type **and** rate of weathering. [8]
- (c) With the aid of examples, assess the role of tectonic processes in determining the type of landforms at different plate boundaries. [15]

BLANK PAGE

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.