Cambridge Assessment International Education

Cambridge International AS & A Level

GEOGRAPHY **9696/11**

Paper 1 Core Physical Geography **May/June 2022**

1 hour 30 minutes

4734460676

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 the annual hydrographs for two rivers.

(a) **(i)** State the highest value of 5-year average discharge for River Chiriquí Viejo shown in Fig. 1.1. [1]

(ii) Calculate the range of 5-year average discharge for River à la Baleine shown in Fig. 1.2. Show your working. [2]

(b) Using Fig. 1.1, describe the trend of average monthly discharge for River Chiriquí Viejo. [3]

(c) Suggest **two** reasons for the differences in the annual hydrographs shown in Fig. 1.1 and Fig. 1.2. [4]

Atmosphere and weather

2 Fig. 2.1 shows the Earth's global energy budget.

(a) Calculate the difference between incoming (shortwave) solar radiation and outgoing longwave radiation at 85°S latitude. Show your working. [2]

(b) Describe the pattern of incoming (shortwave) solar radiation shown in Fig. 2.1. [3]

(c) With reference to Fig. 2.1, explain why there is an energy deficit at higher latitudes. [5]

Rocks and weathering

3 Fig. 3.1 is a photograph which shows an area of weathered rock.

(a) Draw a sketch of the area of weathered rock shown in Fig. 3.1. Label the main weathering features. [4]

(b) Suggest how the rock shown in Fig. 3.1 has been weathered by **one** physical process. [2]

(c) Explain **two** factors which influence the rate of weathering. [4]

Section B

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

Hydrology and fluvial geomorphology

4 **(a)** **(i)** Define the hydrological terms *evaporation* and *percolation*. [4]

(ii) Briefly explain what is meant by a flood recurrence interval. [3]

(b) Describe and explain the formation of deltas. [8]

(c) With the aid of examples, discuss the view that velocity is the most important influence on sediment deposition in a river. [15]

Atmosphere and weather

5 **(a)** **(i)** Briefly describe how albedo affects what happens to incoming (shortwave) solar radiation. [3]

(ii) Describe **two** ways longwave radiation is prevented from leaving the Earth's atmosphere. [4]

(b) Explain how the distribution of land and sea influences seasonal variations in temperature. [8]

(c) With the aid of examples, examine the most significant cause of the enhanced greenhouse effect. [15]

Rocks and weathering

6 **(a)** **(i)** Define the tectonic terms *subduction* and *conservative plate boundary*. [4]

(ii) Briefly describe how fold mountains are formed. [3]

(b) Explain the role of water in the surface movement of sediment on slopes. [8]

(c) With the aid of examples, evaluate attempts to reduce mass movement. [15]

BLANK PAGE