Cambridge Assessment International Education

Cambridge International AS & A Level

GEOGRAPHY **9696/13**

Paper 1 Core Physical Geography **May/June 2023**

1 hour 30 minutes

9338156979

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.

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Section A

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

Hydrology and fluvial geomorphology

1 Fig. 1.1 shows the Hjulström curve.

(a) **(i)** Name the type of sediment which is eroded at a velocity of 20 cm / s shown in Fig. 1.1. [1]

(ii) State the maximum velocity for gravel to be deposited shown in Fig. 1.1. [1]

(b) Describe the variations in velocity of flow for transport and deposition shown in Fig. 1.1. [4]

(c) Using Fig. 1.1, explain the relationship between velocity of flow and the erosion of different types of sediment. [4]

Atmosphere and weather

2 Fig. 2.1 shows average annual precipitation for Lima and the surrounding area, Peru.

(a) State the average annual precipitation shown at A on Fig. 2.1. [1]

(b) Describe the pattern of rainfall shown in Fig. 2.1. [4]

(c) Suggest reasons for the pattern of rainfall such as that shown in Fig. 2.1. [5]

Rocks and weathering

3 Fig. 3.1 is a photograph which shows a mass movement.

(a) Name the type of mass movement shown in Fig. 3.1. [1]

(b) Draw a sketch of the mass movement shown in Fig. 3.1. Label the main features. [4]

(c) Explain the causes of the type of mass movement such as that shown in Fig. 3.1. [5]

Section B

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

Hydrology and fluvial geomorphology

4 **(a)** **(i)** Describe the main features of a meander. [3]

(ii) Explain **two** factors which influence the level of a water table. [4]

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

(c) With the aid of examples, assess the extent to which different land-use changes affect channel flows. [15]

Atmosphere and weather

5 **(a)** **(i)** Define the atmospheric terms *evaporation* and *sublimation*. [4]

(ii) Briefly explain the formation of hail. [3]

(b) Describe and explain the enhanced greenhouse effect. [8]

(c) 'Wind belts are the main influence on the global atmospheric transfer of energy.'

With the aid of examples, how far do you agree? [15]

Rocks and weathering

6 **(a)** **(i)** Describe the processes of sediment movement on a slope. [3]

(ii) Explain how modifying a slope with pinning and netting could reduce mass movement. [4]

(b) Explain how the type and rate of weathering is influenced by temperature. [8]

(c) With the aid of examples, assess the extent to which the type of plate boundary determines the plate tectonic landforms present. [15]

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