

# 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.



#### 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.

#### 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]

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#### **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]

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