

**GEOGRAPHY**

**9696/13**

Paper 1 Core Physical Geography

**October/November 2019**

**1 hour 30 minutes**

No Additional Materials are required.

**READ THESE INSTRUCTIONS FIRST**

An answer booklet is provided inside this question paper. You should follow the instructions on the front cover of the answer booklet. If you need additional answer paper ask the invigilator for a continuation booklet.

**Section A**

Answer **all** questions.

**Section B**

Answer **one** question.

Sketch maps and diagrams should be drawn whenever they serve to illustrate an answer.

All the resources referred to in the questions are contained in the Insert.

The number of marks is given in brackets [ ] at the end of each question or part question.

The total number of marks for this paper is 60.

This document consists of **3** printed pages, **1** blank page and **2** Inserts.

## 2

## Section A

Answer **all** questions in this section.

### Hydrology and fluvial geomorphology

1 Fig. 1.1 shows the development of a river channel.

(a) Identify feature A shown in Fig. 1.1. [1]

(b) Compare the river channel at Stage 1 with the river channel at Stage 3 as shown in Fig. 1.1. [3]

(c) Explain the changes you described in (b). [6]

[Total: 10]

### Atmosphere and weather

2 Fig. 2.1 shows global average temperature, 1900–2010.

(a) Calculate the difference in global average temperature between 1910 and 1980 shown in Fig. 2.1. Show your working. [2]

(b) Describe the trend in global average temperature shown in Fig. 2.1. [3]

(c) Suggest reasons for the trend in global average temperature after 1960. [5]

[Total: 10]

### Rocks and weathering

3 Fig. 3.1 shows a photograph of a mass movement.

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

(b) Describe **three** features of the mass movement shown in Fig. 3.1. [3]

(c) Explain how the mass movement shown in Fig. 3.1 may have occurred. [6]

[Total: 10]

## Section B

Answer **one** question from this section.

### Hydrology and fluvial geomorphology

- 4 (a) (i) Define the hydrological terms *antecedent moisture* and *stemflow*. [4]
- (ii) Briefly explain the formation of springs. [3]
- (b) Describe and explain the factors leading to seasonal variations in an annual river hydrograph. [8]
- (c) With the aid of examples, assess the extent to which soft engineering is more effective than hard engineering in preventing river floods. [15]

[Total: 30]

### Atmosphere and weather

- 5 (a) (i) Define the terms *incoming solar radiation* and *condensation*. [4]
- (ii) Briefly explain how radiation cooling occurs. [3]
- (b) Explain how convectional uplift of air can lead to precipitation. [8]
- (c) With the aid of a case study, assess the extent to which human activity affects the climate of an urban area. [15]

[Total: 30]

### Rocks and weathering

- 6 (a) (i) Describe the nature of conservative plate boundaries. [3]
- (ii) Explain how ocean ridges are formed. [4]
- (b) Describe and explain how vegetation affects the weathering of rocks. [8]
- (c) With the aid of examples, discuss the view that the type of tectonic plate boundary determines the tectonic landforms produced. [15]

[Total: 30]

**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](http://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.