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**GEOGRAPHY**

**9696/13**

Paper 1 Core Physical Geography

**May/June 2018**

**1 hour 30 minutes**

No Additional Materials are required.

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**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.

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

### Section A

Answer **all** questions in this section.

#### Hydrology and fluvial geomorphology

- 1 Fig. 1.1 shows percentage of sediment size at two locations in a river.
- (a) Using Fig. 1.1:
- (i) state the size of sediment with the largest percentage in Location Y; [1]
  - (ii) state the percentage of sediment found at Location Z of 1.01–10.00 mm. Show your working. [2]
- (b) Describe **two** differences in sediment size between the two locations shown in Fig. 1.1. [2]
- (c) Explain why the size of sediment deposited varies along a river. [5]
- [Total: 10]

#### Atmosphere and weather

- 2 Fig. 2.1 shows the minimum temperature on one day in London, UK.
- (a) Using Fig. 2.1:
- (i) state the minimum temperature at Edgware; [1]
  - (ii) suggest the minimum temperature at Southall. [1]
- (b) Describe the pattern of minimum temperature across London shown in Fig. 2.1. [3]
- (c) Explain why temperature varies across an urban area. [5]
- [Total: 10]

#### Rocks and weathering

- 3 Fig. 3.1 shows the global distribution of major tectonic plate boundaries.
- (a) Using Fig. 3.1, state the type of plate boundary found at:
- (i) A; [1]
  - (ii) B. [1]
- (b) Using a diagram, describe the tectonic processes occurring at plate boundary C labelled on Fig. 3.1. [4]
- (c) Explain the formation of **one** landform associated with the type of plate boundary shown at A. [4]
- [Total: 10]

## Section B

Answer **one** question from this section.

### Hydrology and fluvial geomorphology

- 4 (a) (i) Define the hydrological terms *percolation* and *stemflow*. [4]
- (ii) Briefly explain how river discharge is calculated. [3]
- (b) Explain how **two** drainage basin characteristics can influence the shape of a storm hydrograph. [8]
- (c) With the aid of examples, examine the extent to which soft engineering prevents river floods. [15]
- [Total: 30]

### Atmosphere and weather

- 5 (a) (i) Describe how albedo varies with the nature of different surfaces. [3]
- (ii) Explain how frontal rainfall occurs. [4]
- (b) Explain the role of shortwave radiation and longwave radiation in the diurnal energy budget. [8]
- (c) 'Ocean currents are the most important influence in the atmospheric transfer of energy.'  
With the aid of examples, how far do you agree? [15]
- [Total: 30]

### Rocks and weathering

- 6 (a) (i) Define the weathering terms *carbonation* and *pressure release (dilatation)*. [4]
- (ii) Briefly describe how temperature influences rates of weathering. [3]
- (b) Using a case study, explain how human activity affects slope stability. [8]
- (c) With the aid of examples, assess the extent to which the presence of water is the most important factor in determining the type of mass movement. [15]
- [Total: 30]

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