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**GEOGRAPHY**

**9696/13**

Paper 1 Core Geography

**May/June 2014**

**3 hours**

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 **five** questions.

**Section B**

Answer **one** question.

**Section C**

Answer **one** question.

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

All the Figures and the Table 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.

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This document consists of **5** printed pages, **3** blank pages and **2** Inserts.

## Section A

Answer **five** questions from this section. All questions carry 10 marks.

### Hydrology and fluvial geomorphology

- 1 Fig. 1A shows storm hydrographs for the same precipitation event, in two drainage basins; one is rural and the other is urban. Fig. 1B shows the different precipitation pathways, in the two drainage basins.
- (a) Using Fig. 1A, state which storm hydrograph, P or Q, shows:
- (i) a rural drainage basin, [1]
  - (ii) an urban drainage basin. [1]
- (b) Using Fig. 1A identify the parts of the storm hydrographs:
- (i) R, [1]
  - (ii) S. [1]
- (c) Using Fig. 1B, describe and explain the differences between the pathways taken by precipitation in the rural drainage basin as compared to the urban drainage basin. [6]

### Atmosphere and weather

- 2 Fig. 2A shows the Earth's radiation balance for one year. Fig. 2B shows a model of atmospheric circulation.
- (a) Name the features in Fig. 2A labelled:
- (i) X, [1]
  - (ii) Y. [1]
- (b) Describe what is happening at Z and state the latitude. [2]
- (c) Using Fig. 2B, describe and account for the nature of atmospheric circulation and how it contributes to the transfer of heat around the Earth's surface. [6]

### Rocks and weathering

- 3 Fig. 3 shows the relationship between moisture conditions, speed and the type of mass movement.
- (a) Using Fig. 3 identify which type of mass movement is most likely to occur:
- (i) at a fast speed, when conditions are wet, [1]
  - (ii) at a slow speed, when conditions are dry. [1]
- (b) Describe one of the mass movements you identified in (a). [2]
- (c) Explain the impact that human activities can have on slope stability. [6]

### Population

- 4 Fig. 4 shows a model of the relationship between population and resources.
- (a) Describe the trend for population shown in Fig. 4. [2]
- (b) Describe **two** possible consequences of population reaching **A** in Fig. 4. [3]
- (c) Explain how countries might delay or avoid reaching **A** in Fig. 4. [5]

### Migration

- 5 Fig. 5 shows the main destinations of refugees from Somalia in 2010.
- (a) Identify **two** features of the migration shown in Fig. 5. [2]
- (b) Suggest **two** reasons for the features identified in (a). [4]
- (c) Explain the impacts of large numbers of refugees on **one** named receiving area. [4]

### Settlement dynamics

- 6 Table 1 shows selected indicators for households in an inner city area of an MEDC in 2001 and 2011.
- (a) Describe the changes in **two** of the indicators shown in Table 1. Support your answer with data. [2]
- (b) Suggest reasons for the changes described in (a). [3]
- (c) Explain why large scale urban renewal has taken place in many cities in MEDCs. [5]

**Section B: The Physical Core**

Answer **one** question from this section. All questions carry 25 marks.

**Hydrology and fluvial geomorphology**

- 7 (a) (i) Define the terms *porosity* and *permeability* as they apply to drainage basin soils. [4]  
(ii) Briefly describe what is meant by drainage density. [3]
- (b) Using a diagram, show how river velocity and sediment characteristics influence the transportation and deposition of sediment in a river. [8]
- (c) Describe the processes of fluvial erosion and discuss the extent to which they contribute to channel landforms. [10]

**Atmosphere and weather**

- 8 (a) (i) Define the atmospheric terms *condensation* and *sublimation*. [4]  
(ii) Briefly describe what is meant by temperature inversion at the Earth's surface. [3]
- (b) With the aid of a diagram, explain how urban areas affect temperatures in comparison with surrounding rural areas. [8]
- (c) Describe the factors that influence local energy budgets and discuss the resulting weather phenomena of mist, fog, dew and land and sea breezes. [10]

**Rocks and weathering**

- 9 (a) (i) Define the terms *hydration* and *carbonation* as they apply to weathering processes. [4]  
(ii) Briefly describe how temperature affects chemical weathering processes. [3]
- (b) Describe the factors influencing physical weathering in different climates. [8]
- (c) With the aid of diagrams, discuss the role of sea floor spreading in the formation of tectonic landforms. [10]

### Section C: The Human Core

Answer **one** question from this section. All questions carry 25 marks.

#### Population

- 10 (a) (i) Give the meaning of the term *dependency ratio*. [2]  
 (ii) Outline the main reasons why the dependency ratio may increase over time. [5]  
 (b) Describe the possible consequences of increased age dependency in an area. [8]  
 (c) To what extent can a country alter its population structure? Use examples to support your answer. [10]

#### Migration / Settlement dynamics

- 11 (a) Describe the role of push factors and pull factors in migration. [7]  
 (b) Use examples to explain how constraints and barriers limit migration. [8]  
 (c) Assess the impacts of rural-urban migration on one or more urban settlements. [10]

#### Settlement dynamics

- 12 (a) With the help of a diagram, show how bid-rent results in different zones in urban settlements. [7]  
 (b) Explain how factors, other than bid-rent, cause zonation in urban settlements. [8]  
 (c) Evaluate the success of LEDCs in managing urban settlements. [10]





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*Copyright Acknowledgements:*

Question 1 Fig. 1A           © R W Christopherson; *An Introduction to Physical Geography*; 1997.  
Question 1 Fig. 1B           Adapted from; © [http://www.lakesuperiorstreams.org/understanding/stormwater\\_hydrology.html](http://www.lakesuperiorstreams.org/understanding/stormwater_hydrology.html).  
Question 2 Figs 2A & 2B     Adapted from; © [www.faculty.luther.edu/~bernatzr/courses/ES185/Energy%20Budget/framePage.html](http://www.faculty.luther.edu/~bernatzr/courses/ES185/Energy%20Budget/framePage.html).  
Question 3 Fig. 3           © <http://www.mleziva.hostzi.com>.

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