



UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
General Certificate of Education Advanced Subsidiary Level and Advanced Level

GEOGRAPHY

9696/13

Paper 1 Core Geography

May/June 2012

3 hours

Additional Materials: Answer Booklet/Paper

READ THESE INSTRUCTIONS FIRST

If you have been given an Answer Booklet, follow the instructions on the front cover of the Booklet.

Write your Centre number, candidate number and name on all the work you hand in.

Write in dark blue or black pen.

You may use a soft pencil for any diagrams, graphs or rough working.

Do not use staples, paper clips, highlighters, glue or correction fluid.

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.

If you answer Question 2 write your Centre number, candidate number and name in the spaces provided at the top of page 3 of the Insert. At the end of the examination, tear out page 3 from the Insert and attach it to your Answer Booklet/Paper.

At the end of the examination, fasten all your work securely together.

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

This document consists of **6** printed pages, **2** blank pages and **1** Insert.



Section A

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

Hydrology and fluvial geomorphology

1 Fig. 1 shows water flows into a river channel.

(a) Name the flows marked on Fig. 1 as:

(i) A; [1]

(ii) B; [1]

(iii) C; [1]

(iv) D. [1]

(b) Briefly explain the ways in which precipitation reaches the river channel in Fig. 1. [6]

Atmosphere and weather

2 Fig. 2 is a diagram of unstable atmospheric conditions. Fill in your details at the top of page 3 of the Insert and attach it to your answer booklet or paper.

(a) On Fig. 2 label:

(i) dry adiabatic lapse rate (DALR); [1]

(ii) saturated adiabatic lapse rate (SALR); [1]

(iii) environmental lapse rate (ELR). [1]

(b) On Fig. 2, draw a towering cumulus cloud showing its location and vertical extent. [2]

(c) Explain how instability occurs and describe the weather that may result. [5]

Rocks and weathering

3 Table 1 shows two processes of chemical weathering.

(a) (i) Name the weathering process in **A**. [1]

(ii) Name the weathering process in **B**. [1]

(b) Briefly describe how climate can aid the operation of one of the processes shown in Table 1. [3]

(c) Explain how the processes shown in Table 1 weather rock. [5]

Population change

4 Fig. 3 shows the main elements of population change.

(a) Using Fig. 3, name:

(i) **A**; [1]

(ii) **B**. [1]

(b) Explain how variations in the birth rate can affect population change. [3]

(c) Describe and explain the economic factors that can influence birth rates. [5]

Migration

5 Fig. 4 shows the population structure for immigrants (foreign born) in the USA, an MEDC, in 2000.

(a) (i) Which age group has the greatest number of male immigrants? [1]

(ii) Using data from Fig. 4, describe the main characteristics of the immigrant population. [4]

(b) Outline the possible impacts of an immigrant population, like the one shown in Fig. 4, on a receiving country. [5]

Settlement dynamics

- 6 Figs 5A and 5B show the population in urban areas in 1975 and 1995, and predicted for 2015. Fig. 5A shows percentage urban population and Fig. 5B shows total urban population (millions).
- (a) (i) What percentage of the population in LEDCs lived in urban areas in 1975? [1]
- (ii) Use the data in Figs 5A and 5B to describe the differences between the numbers living in urban areas in MEDCs and LEDCs. [3]
- (b) Name the processes that lead to an increase in the numbers of people living in urban areas in LEDCs. [2]
- (c) Suggest why there is a small percentage increase in urban population in MEDCs. [4]

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 fluvial terms *traction* and *suspension*. [4]
- (ii) Briefly explain the differences between laminar and turbulent flow in a river channel. [3]
- (b) With the help of diagrams, explain how river erosion can produce waterfalls and rapids. [8]
- (c) Describe how river floods occur. To what extent can the occurrence of floods be predicted and their effects limited? [10]

Atmosphere and climate

- 8 (a) (i) Briefly explain the atmospheric terms *high pressure* and *low pressure*. [4]
- (ii) How do high and low pressure areas affect wind direction? [3]
- (b) With the help of a diagram, explain the pattern of radiation excesses and deficits on the Earth's surface. Describe **one** way in which the transfer of heat from areas of excess to deficit occurs. [8]
- (c) Why is it important to understand the nature of greenhouse gases and how they can affect global warming? [10]

Rocks and weathering

- 9 (a) (i) Define the terms *continental plate* and *oceanic plate*. [4]
- (ii) Briefly describe the formation of a mid-ocean ridge. [3]
- (b) With the help of a diagram, explain the formation of landforms at the destructive plate margin formed by the meeting of two oceanic plates. [8]
- (c) Describe the physical factors that can make a slope become unstable. To what extent can human activities affect slope stability? [10]

Section C: The Human Core

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

Population change

10 Fig. 6 shows the 'S' curve that models how population may change over time.

- (a) (i) Give the meaning of the term *carrying capacity*. [3]
- (ii) Suggest reasons why the population may level off as it reaches the carrying capacity. [4]
- (b) Outline the main features of underpopulation and consider whether underpopulation is a useful concept. [8]
- (c) Assess the success of attempts to sustain an increasing population using technology and innovation. [10]

Migration

- 11 (a) (i) Give the meaning of the term *intra-urban migration*. [2]
- (ii) Describe and explain **two** types of intra-urban migration. [5]
- (b) Using one or more examples, explain how push factors and pull factors cause internal migration. [8]
- (c) 'The social and economic impacts of internal migration are as important in source areas as in receiving areas.'
- How far do you agree with this view? [10]

Settlement dynamics

- 12 (a) Outline the problems faced by people living in shanty towns (squatter settlements) in LEDCs. [7]
- (b) Compare and explain the locations of low-income households in the cities of LEDCs and MEDCs. [8]
- (c) To what extent is government action the most important way of solving the problems of shanty towns (squatter settlements) in LEDCs? [10]

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Copyright Acknowledgements:

Question 1 Fig. 1 © P Smithson, K Addison & K Atkinson; *Fundamentals of the Physical Environment*; Routledge; 2002.
Question 5 Fig. 4 © http://www.migrationinformation.org/DataHub/graphs/pyramid_3.shtml.
Question 6 Figs 5A & 5B © UNESCO; 1999.

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