



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

GEOGRAPHY

9696/11

Paper 1 Core Geography

October/November 2009

3 hours

Additional Materials: Answer Booklet/Paper

* 6 7 4 9 4 6 1 6 2 1 *

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 **all** 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.
The Table, the Photograph and all the Figures referred to in the questions are contained in the Insert.

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 **5** printed pages, **3** blank pages and **1** Insert.



Section A

Answer **all** the questions in this section. All questions carry 10 marks.

Hydrology and fluvial geomorphology

1 Table 1 gives some data for two river catchments located in similar temperate climates.

(a) What percentage of average annual rainfall occurs as runoff in:

(i) River A; [1]

(ii) River B? [1]

(b) What is the difference between the maximum and minimum recorded flows in:

(i) River A; [1]

(ii) River B? [1]

(c) Using the evidence in Table 1, explain which of the rivers you think is more likely to produce floods in response to a storm event. [6]

Atmosphere and weather

2 Fig. 1 shows some possible effects of continued global warming.

(a) Give **three** examples from Fig. 1 that suggest that there will be changes to precipitation. [3]

(b) Suggest **one** reason why the consequences of sea level rise may be more severe in some areas than others. [2]

(c) Explain how increases in the greenhouse effect may cause changes to both temperature and precipitation. [5]

Rocks and weathering

3 Photograph A shows a close-up of the effects of weathering on an area of limestone rocks.

(a) Draw a labelled sketch diagram of Photograph A, showing how the structure (joints and bedding planes) of the limestone has affected its weathering. [4]

(b) Explain how weathering processes and the properties of limestone can result in the features shown in Photograph A. [6]

Population change

- 4 Fig. 2 shows birth rates, death rates and total population for England and Wales, 1701–2001. England and Wales are part of the United Kingdom, (UK), an MEDC.
- (a) Using Fig. 2 and your knowledge of the demographic transition model, identify a likely date for the following and give a reason for your choice:
- (i) the end of Stage 1; [2]
- (ii) the start of Stage 3. [2]
- (b) Describe the natural increase rate in England and Wales during the period 1951–2001. [3]
- (c) From the trends shown in Fig. 2, outline **two** possibilities for the demographic transition for England and Wales beyond 2001. [3]

Settlement dynamics

- 5 Fig. 3 shows, by world region, the percentage of urban population in 2003 and the predicted percentage of urban population in 2030.
- (a) Describe the relative changes in percentage of urban population between 2003 and 2030 predicted in Fig. 3. [5]
- (b) How does an understanding of urbanisation help to explain the data for Africa and Asia in Fig. 3? [5]

Section B: The Physical Core

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

Hydrology and fluvial geomorphology

- 6 (a) (i) Define the terms *riffle* and *pool*. [4]
- (ii) Briefly explain how riffle and pool sequences may affect channel shape. [3]
- (b) Using a labelled diagram, describe how the Hjulstrom curve can be used to show transportation and deposition in a river channel. [8]
- (c) How might human activities affect the amount and speed of water flowing in a river channel? [10]

Atmosphere and weather

- 7 (a) (i) Define the terms *sensible heat transfer* and *latent heat transfer*. [4]
- (ii) Explain **one** way in which solar radiation is reflected. [3]
- (b) With the help of a diagram, describe the global distribution of pressure belts and explain why this varies seasonally. [8]
- (c) Explain how stability and instability within the atmosphere produce different weather conditions. [10]

Rocks and weathering

- 8 (a) (i) Define the terms *island arc* and *ocean trench*. [4]
- (ii) Briefly describe sea floor spreading. [3]
- (b) Using a diagram, show how plate tectonics can explain the development of mountains. [8]
- (c) To what extent can human activities affect the stability and shape of slopes? [10]

Section C: The Human Core

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

Population change

- 9 (a) Study Fig. 4, which shows a model of migration.

With the help of examples, explain how positive factors and negative factors, as shown in Fig. 4, may affect whether or not people decide to migrate **within** a country. [7]

- (b) Describe some of the possible obstacles to **international** migration. [8]

- (c) In what ways do the migration patterns of men and women differ? [10]

Population change

- 10 (a) Give the meaning of the term *carrying capacity* and outline how carrying capacity may be related to population increase. [7]

- (b) Using examples, suggest reasons why some areas of the world are considered underpopulated. [8]

- (c) To what extent do you agree that 'necessity is the mother of invention' in the relationship between population and resources? [10]

Settlement dynamics

- 11 (a) Describe the **main** changes which have occurred recently to the Central Business District (CBD) of **one** town or city you have studied. [7]

- (b) Give the meaning of the term *functional zonation* and explain why it may occur **within** the CBD of towns and cities. [8]

- (c) Assess the success of attempts to improve **one** inner city area in an MEDC. [10]

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