



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

GEOGRAPHY

9696/12

Paper 1 Core Geography

October/November 2010

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

Hydrology and fluvial geomorphology

- 1 Fig. 1 shows a storm hydrograph. Fill in your details at the top of the page and attach it to your answer booklet or paper.
- (a) On Fig. 1:
- (i) mark and name the peak discharge; [1]
 - (ii) show lag time; [1]
 - (iii) draw a line indicating baseflow; [1]
 - (iv) label the recession limb. [1]
- (b) Explain how, in a catchment area, the shape of a hydrograph can be affected by:
- (i) geology and soils;
 - (ii) drainage density. [6]

Atmosphere and weather

- 2 Fig. 2 shows the distribution of night time temperatures across a large city.
- (a) (i) State the location and temperature recorded at **A**. [1]
- (ii) State the location and temperature recorded at **B**. [1]
- (b) Describe the pattern of night time temperatures shown in Fig. 1. [3]
- (c) Explain why the night time temperatures vary across the city. [5]

Rocks and weathering

- 3 Fig. 3 shows the global distribution of tectonic plates.
- (a) (i) Name the type of plate margin shown at **X**. [1]
- (ii) Name the type of plate margin shown at **Y**. [1]
- (b) Draw a labelled diagram to show the processes occurring at **X**. [4]
- (c) Explain how volcanoes are produced at **Y**. [4]

Population

- 4 Table 1 shows selected population statistics for Mali, an LEDC in Africa, and Italy, an MEDC in Europe, in 2005.
- (a) Calculate **N**, the natural increase rate for Mali in 2005. [1]
- (b) How did the total fertility rates of Mali and Italy in 2005 compare with replacement level fertility? [3]
- (c) Suggest an explanation for **either** Mali's youthful age structure **or** Italy's ageing population. [6]

Population/Migration/Settlement dynamics

- 5 Fig. 4 shows changes in the urban population and rural population of China between 1950 and 2030.
- (a) In what year are the urban and rural populations predicted to be equal in number? [1]
- (b) Compare the changes in the urban and rural populations of China between 1970 and 2010, supporting your response with data from Fig. 4. [4]
- (c) How may the growth of China's **urban** population, shown in Fig. 4, be explained? [5]

Settlement dynamics

- 6 Fig. 5 shows settlement dynamics in the city of Chicago and its region, USA, in 2005.
- (a) Describe the location of the areas of decline shown in Fig. 5. [2]
- (b) Compare the location of the areas of slow growth and of expansion growth in Fig. 5. [3]
- (c) Suggest reasons why Chicago is growing in the areas shown in Fig. 5. [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 *discharge* and *velocity* as they apply to river channels. [4]
- (ii) Briefly explain what is meant by recurrence intervals in flood prediction. [3]
- (b) With the help of diagrams, explain how rivers pick up (entrain), transport and deposit sediment. [8]
- (c) Describe the differences between a braided and a meandering stream channel. What are the causes of these differences? [10]

Atmosphere and weather

- 8 (a) (i) Define the terms *water vapour* and *sublimation*. [4]
- (ii) Briefly explain what is meant by relative humidity. [3]
- (b) With the help of diagrams, explain how land and sea breezes can affect the weather experienced in coastal areas. [8]
- (c) Explain how atmospheric stability, instability and conditional instability can produce different weather conditions. [10]

Rocks and weathering

- 9 (a) (i) Define the terms *pressure release (dilatation)* and *crystal growth (salt crystallisation)* as they apply to rock weathering. [4]
- (ii) Briefly describe spheroidal weathering. [3]
- (b) Using diagrams, explain the operation of **one** type of slide and **one** type of flow on slopes. [8]
- (c) Explain how chemical weathering is influenced by climate, rock type and rock structure. [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 *life expectancy*. [3]
- (ii) Explain **two** ways in which education may help to increase life expectancy. [4]
- (b) With the help of examples, explain why, in LEDCs, life expectancy is usually higher in urban areas than in rural areas. [8]
- (c) Why may attempts to increase life expectancy sometimes fail? [10]

Migration

- 11 (a) (i) Give the meaning of the term *international economic migration*. [3]
- (ii) Suggest **two** reasons why international migration is increasing. [4]

With reference to **one** case study of international migration:

- (b) describe its causes, character and scale; [8]
- (c) assess its impacts on the places people left (source areas) and the places people migrated to (receiving areas). [10]

Settlement dynamics

- 12 (a) With reference to one or more examples, describe the location of shanty towns (squatter settlements) in urban areas in LEDCs. [7]
- (b) Study Photograph A, which shows part of a shanty town within Manila in the Philippines, an LEDC in Asia.
- (i) Describe what risks the residents may face living in such areas. [4]
- (ii) Suggest **two** ways in which the city authorities could improve the quality of life for people who live there. [4]
- (c) 'Where people live in urban areas is about their ability to pay'. How far do you agree? [10]

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Question 4 Table 1 © www.nationmaster.com/country/ml-mali/peo-people3d/country/it.italy/peo-people; 29 May 2009.
Question 6 Figure 5 © John C Hudson; *Chicago, A Geography of the City and its Region*; The Center for American Places Inc.; 2006.
Question 12 Photograph A © www.learner.org/channel/courses/envsci/visual/img_med/open_canal.jpg; 7 August 2008.

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