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

GEOGRAPHY **9696/13**

Paper 1 Core Geography **May/June 2011**

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 Photograph 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.

UNIVERSITY *of* CAMBRIDGE
International Examinations

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Section A

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

Hydrology and fluvial geomorphology

1 Photograph A shows part of a river channel and valley floor.

    (a) Draw a labelled sketch to show the main features of the river channel shown in Photograph A.

        [4]

    (b) Describe feature **X** and explain how it might have been formed. [6]

Atmosphere and weather

2 Fig. 1 shows temperature changes across an urban area at 3.00am (03.00).

    (a) (i) What is the difference in the temperature recorded at 0.9 km and 10 km? [1]

        (ii) What is the difference in the temperature recorded at 0 km and the river valley at 2 km?

        [1]

    (b) Give reasons why the CBD is warmer than the river valley and rural area. [4]

    (c) Briefly explain two differences other than temperature in the climates of urban and rural areas.

        [4]

Rocks and weathering

3 Fig. 2 shows how climate affects different types of weathering.

    (a) (i) From graph **A**, name a weathering process that you would expect at a mean annual temperature of $-10°C$ and mean annual rainfall of 800 mm.

        (ii) From graph **B**, name a weathering process that you would expect at a mean annual temperature of $18°C$ and mean annual rainfall of 1400 mm. [2]

    (b) Explain how vegetation may contribute to both chemical and mechanical weathering processes.

        [3]

    (c) What is meant by the term *acid rain*? Explain how acid rain may affect the weathering of rocks.

        [5]

Population

4   Fig. 3 shows the percentage of population that experienced food shortage in 2009.

   (a) Name **one** country shown in Fig. 3 where 5% or less of people were undernourished.   [1]

   (b) Describe the distribution of countries in Fig. 3 which experienced severe food shortages (over 35% of people undernourished).   [3]

   (c) Outline some of the causes of food shortages.   [6]

Migration

5   Figs 4A and 4B show the five largest foreign-born (immigrant) groups in USA and Australia in 2001.

   (a) Using the information in Figs 4A and 4B, compare the pattern of immigration in Australia and USA.   [3]

   (b) Describe **one** way that governments of receiving countries can affect immigration.   [2]

   (c) Describe and explain the possible impacts of immigration on the receiving countries.   [5]

Settlement dynamics

6   Fig. 5 shows the percentage of the population in each province of South Africa living in squatter settlements (informal housing) in 2007. The average for the whole of South Africa was 11.9%.

   (a) Which province had the smallest percentage of its population living in squatter settlements?   [1]

   (b) Describe the pattern shown in Fig. 5.   [4]

   (c) Explain why residential segregation occurs in urban areas in LEDCs.   [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 *infiltration* and *percolation*. [4]

(ii) Describe how and when overland flow may occur. [3]

(b) With the aid of a diagram or diagrams explain **three** channel landforms that occur along a meandering stretch of river. [8]

(c) Outline the causes of floods in a catchment and explain how such floods may be prevented or ameliorated (reduced). [10]

Atmosphere and weather

8 (a) (i) Define the terms *environmental lapse rate* and *adiabatic lapse rate*. [4]

(ii) Briefly describe the difference between the dry adiabatic lapse rate and the saturated adiabatic lapse rate. [3]

(b) Using diagrams, explain how stability and conditional instability occur in the atmosphere. [8]

(c) Explain the more likely climatic and other effects of global warming. [10]

Rocks and weathering

9 (a) (i) Define the mass movement terms *heave* and *creep*. [4]

(ii) Briefly describe how these processes can affect the shape of slopes. [3]

(b) With the aid of diagrams, explain how flows and slides occur and describe their effects on slopes. [8]

(c) Explain how the tectonic process of subduction occurs at a convergent plate boundary and describe **two** resultant 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 *life expectancy*. [3]

(ii) Describe the characteristics of an **ageing** population. [4]

(b) With the help of one or more examples, outline and explain changes in life expectancy over time. [8]

(c) Briefly explain how managing an ageing population presents great challenges to the country or countries concerned. [10]

Migration

11 (a) With the help of examples, describe different types of internal migration. [7]

(b) Suggest reasons for an increase in internal migration in many countries. [8]

(c) To what extent does internal migration bring only negative impacts for areas left by migrants? [10]

Settlement dynamics

12 (a) (i) Give the meaning of the term *spatial competition*. [2]

(ii) Describe the effects of spatial competition within the Central Business District (CBD). [5]

(b) Suggest reasons for the location of retailing (markets, shops and stores) within urban areas. [8]

(c) With the help of examples, assess why urban areas are facing difficulties in the 21st century. [10]

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