



GEOGRAPHY

9696/12

Paper 1 Core Geography

October/November 2009

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 **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 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 Fig. 1 shows a plan view and cross section of a river channel.

- (a) (i) Identify the type of river channel shown. [1]
- (ii) Name the landform marked X. [1]
- (iii) Name the landform marked Y. [1]
- (iv) Identify the feature marked Z. [1]

(b) Describe the channel landforms shown in Fig. 1 and explain how such a channel develops. [6]

Atmosphere and weather

2 Fig. 2A shows incoming solar radiation and Fig. 2B shows outgoing terrestrial (earth) radiation.

- (a) (i) In Fig. 2A, how many units of short wave radiation are absorbed by the earth's surface? [1]
- (ii) In Fig. 2B how many units of terrestrial (earth) radiation are lost from the atmosphere? [1]
- (iii) In Fig. 2A name **two** of the components of the atmosphere that help to absorb the 24 units of solar radiation. [2]

(b) Describe what is meant by albedo. Explain how the earth's atmosphere is warmed. [6]

Population change

3 Table 1 gives estimates of maternal mortality for the world and selected world regions in 2000. Maternal mortality means deaths associated with pregnancy and childbearing.

- (a) Describe the regional variation in maternal mortality rate, supporting your response with data from Table 1. [4]
- (b) Suggest how the very high lifetime risk of maternal death in Sub-Saharan Africa may be explained. [6]

Population change

- 4 Fig. 3 shows net migration for Canada, an MEDC in North America, 1851–2001. Net migration is the balance between immigration and emigration.
- (a) Using data from Fig. 3, describe net migration for Canada between 1851 and 1911. [3]
- (b) Using Fig. 3, identify the 5 year period for which the census recorded:
- (i) the greatest migration gain;
 - (ii) net migration of 463 000 people. [2]
- (c) Between 1991 and 2001, the majority of immigrants to Canada were from Asia. Explain what other information would be useful for a fuller understanding of immigration to Canada during this period. [5]

Settlement dynamics

- 5 Fig. 4 shows a theoretical bid-rent diagram for an urban area.
- (a) Identify the land-use shown as **L** on Fig. 4. [1]
- (b) Give **two** reasons why there is intense competition among potential users to obtain a location in the CBD. [3]
- (c) With the help of one or more examples, explain why Fig. 4 is limited in helping to understand the actual costs and uses of land in urban areas. [6]

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 *evapotranspiration* and *antecedent moisture*. [4]
- (ii) Why are the terms in (a) (i) important in a study of the hydrology of drainage basins? [3]
- (b) How is discharge in a drainage basin affected by
- (i) size and shape of the drainage basin;
- (ii) drainage density? [8]
- (c) How are floods caused and their effects limited? [10]

Atmosphere and weather

- 7 (a) (i) Define the terms *condensation* and *water vapour*. [4]
- (ii) Briefly explain the conditions necessary for the formation of snow. [3]
- (b) Using diagrams, explain how convectional uplift and orographic uplift of air occur. Outline the effects of such uplift on weather. [8]
- (c) To what extent does an urban area experience a climate different from that of a surrounding rural area? [10]

Rocks and weathering

- 8 (a) (i) Define the terms *hydration* and *oxidation*. [4]
- (ii) Briefly explain what is meant by pressure release. [3]
- (b) Using diagrams, explain how the processes of flow and heave affect mass movements on slopes. [8]
- (c) How does the chemical composition and physical nature of granite and limestone affect their weathering? [10]

Section C: The Human Core

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

Population change

- 9 (a) (i) Give the meaning of the term *natural increase rate* and show how it is calculated. [3]
- (ii) With the help of one or more examples, describe the circumstances under which natural decrease (a negative rate of natural increase) occurs. [4]
- (b) Explain why, although the size of the average family is getting smaller, world population is still growing. [8]
- (c) Explain the reasons for the success or failure of attempts to alter a country's birth rate. [10]

Population change

- 10 (a) (i) Give the meaning of the term *internal migration*. [3]
- (ii) Describe briefly **one** example of internal migration. [4]
- (b) With the help of examples, explain why much internal migration occurs in stages. [8]
- (c) Assess the impacts of one or more migratory movement **within** a named urban settlement. [10]

Settlement dynamics

- 11 (a) Describe the location and character of one named **rural** settlement or **rural** area which you have studied in detail. [7]
- (b) Explain one or more of the issues in the development of the rural settlement or rural area you chose in (a) and describe the effects. [8]
- (c) How far do you agree that the differences between rural settlements and urban settlements are becoming less clear? [10]

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Question 2 © G O'Hare & J Sweeney; *The Atmospheric System*; Oliver & Boyd; 1990.
Question 3 Table 1 © <http://www.unfpa.org/swp/2004/english/ch7/index.htm>.
Question 4 Figure 3 © <http://www.40.statcan.ca/101/cst01/demo03.htm>.

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