
GEOGRAPHY

9696/12

Paper 1 Core Geography

May/June 2014

3 hours

No Additional Materials are required.

READ THESE INSTRUCTIONS FIRST

An answer booklet is provided inside this question paper. You should follow the instructions on the front cover of the answer booklet. If you need additional answer paper ask the invigilator for a continuation booklet.

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 referred to in the questions are contained in the Insert.

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 **2** inserts.

Section A

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

Hydrology and fluvial geomorphology

- 1 Figs 1A and 1B show storm hydrographs for rivers in two different catchment areas with the same rainfall event.
- (a) (i) State the amount of rainfall at 12 hours shown on Fig. 1A. [1]
 (ii) State the amount of base flow at 48 hours shown on Fig. 1A. [1]
 (iii) Calculate the lag time for Fig. 1B. [1]
 (iv) State the peak discharge shown in Fig. 1B. [1]
- (b) Describe the differences in the pattern of discharge of the two rivers and explain **two** possible reasons for the differences. [6]

Atmosphere and weather

- 2 Fig. 2 shows the annual radiation balance of the Earth.
- (a) What is the largest amount of short wave solar radiation received? [1]
 (b) Describe the patterns of the latitudinal distribution of short wave and long wave radiation shown in Fig. 2. [3]
 (c) Explain why there is a surplus of radiation energy in some parts of the earth and a deficit in others. [6]

Rocks and weathering

- 3 Fig. 3 shows a classification of some types of mass movement.
- (a) (i) Name the form of mass movement in Fig. 3 which has a fast rate of movement and is dry. [1]
 (ii) Name the mass movement on Fig. 3 which has a moderate rate of movement and high water content. [1]
- (b) Name the **two** conditions shown on Fig. 3 under which soil creep occurs. [2]
- (c) Explain how the processes of heave, slide and flow produce the types of mass movement shown in Fig. 3. [6]

Population

- 4 Fig. 4 shows the impact of different levels of fertility on population structure.
- (a) State **two** features of the population structure diagram for low fertility in Fig. 4. [2]
- (b) Using data from Fig. 4, describe the impact of the three different levels of fertility on the population structure at 20 years of age. [3]
- (c) Explain why countries may aim to increase the fertility rate. [5]

Population / Migration

- 5 Fig. 5 shows the average annual growth rate of population aged 15–24 years for Mexico, an LEDC, and the USA, an MEDC, 1950–2045 (actual and predicted).
- (a) Using Fig. 5, state the year in which:
- (i) the USA's average annual growth rate was 4.3%; [1]
- (ii) the difference between the average annual growth rates of population for Mexico and the USA was the greatest. [1]
- (b) Using data from Fig. 5, compare the predictions for Mexico and the USA. [3]
- (c) Explain the possible effects of emigration on population growth rates in **LEDCs**. [5]

Settlement dynamics

- 6 Figs 6A and 6B show a model of urban expansion into a rural area in East Asia.
- (a) Using Fig. 6A, describe the village and its location. [3]
- (b) Give **two** differences between type I and type III urban growth shown in Fig. 6B. [2]
- (c) Explain some of the consequences for rural areas which result from urban growth. [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 *entrainment* and *traction* as they apply to a river channel. [4]
 (ii) Briefly describe how abrasion occurs in a river channel. [3]
- (b) Draw a labelled diagram showing the landforms of a river floodplain. Explain the formation of **two** of the landforms you have shown in the diagram. [8]
- (c) Describe the landforms that occur in braided channels. To what extent are the processes in braided channels different from those found in meandering channels? [10]

Atmosphere and weather

- 8 (a) (i) Define the terms *evaporation* and *condensation*. [4]
 (ii) Briefly describe the forms in which moisture is present in the atmosphere. [3]
- (b) Explain why urban areas have higher temperatures and more rainfall but less mist than surrounding rural areas. [8]
- (c) Explain the relationship between the lapse rates that occur with convectional and with orographic uplift of air. To what extent do convectional uplift and orographic uplift produce different types of weather? [10]

Rocks and weathering

- 9 (a) (i) Define the terms *spheroidal weathering* and *salt crystal growth*. [4]
 (ii) Briefly describe how pressure release might contribute to the weathering of rocks. [3]
- (b) Explain how chemical weathering occurs in granite and limestone rocks. [8]
- (c) Explain how landforms are produced at the convergence of a continental plate and an oceanic plate. [10]

Section C: The Human Core

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

Population

- 10 (a) (i) Define the term *carrying capacity*. [3]
 (ii) With the help of examples, give **two** ways that population may exceed carrying capacity. [4]
- (b) Explain the causes of food shortages. [8]
- (c) How far do you agree that the idea of a population ceiling is no longer useful? [10]

Migration / Settlement dynamics

- 11 (a) (i) With the help of an example, give the meaning of the term *urban-urban* migration. [3]
 (ii) Outline **two** circumstances in which urban-urban migration occurs. [4]
- (b) Use examples to explain how push factors and pull factors work together to cause **rural-urban** migration. [8]
- (c) To what extent can movements **within** urban settlements (intra-urban migration) be explained by changes in family life? [10]

Settlement dynamics

- 12 (a) Describe the characteristic functions of Central Business Districts (CBDs). [7]
- (b) With reference to one or more urban settlements, describe how the CBD is changing and give reasons for these changes. [8]
- (c) How far do you agree that effective management can solve the problems of urban settlements? [10]

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Copyright Acknowledgements:

- Question 4 Fig. 4 © John R Weeks; *Population: An Introduction to Concepts and Issues*; Wadsworth Publishing Company; 1996.
Question 5 Fig. 5 © Gregory B Weeks & John R Weeks; *Irresistible Forces; Latin American Migration to the United States and its Effects on the South*; University of New Mexico Press; 2009.
Question 6 Fig.6 © Gideon S Golany Et Al; *Japanese Urban Environment*; Elsevier Science LTD; 1998.

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