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MAY/JUNE 2008

CARIBBEAN EXAMINATIONS COUNCIL

SECONDARY EDUCATION CERTIFICATE EXAMINATION

GEOGRAPHY

Paper 02 – General Proficiency

2½ hours

03 JUNE 2008 (a.m.)

READ THE FOLLOWING INSTRUCTIONS CAREFULLY

1. This paper consists of **TEN** questions in **FOUR** sections.
2. Section A consists of **ONE compulsory** question. EACH of Sections B, C and D consists of **THREE** questions.
3. Candidates **MUST** answer **FOUR** questions: Question 1 from Section A and **ONE** question from **EACH** of Sections B, C and D.
4. Begin **EACH** answer on a new page.
5. Credit will be given for the use of relevant sketch maps and diagrams.
6. The use of non-programmable calculators is permitted.
7. The use of geometrical instruments is permitted.
8. Write all of your responses in the answer booklet provided unless otherwise stated in the question. **ALL** inserts used **MUST** be fastened securely to your answer booklet.

DO NOT TURN THIS PAGE UNTIL YOU ARE TOLD TO DO SO

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SECTION A (Mapwork)

Candidates MUST attempt this question.

1. A map extract of Port Antonio (Jamaica) on a scale of 1:50 000 is **provided as an insert.** Study the extract and then answer the following questions.

(a) (i) What is the six-figure grid reference of the junction of the Class B and Class C roads near the coast in Port Antonio? **(2 marks)**

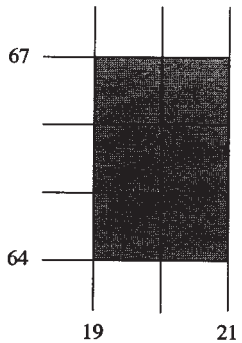
(ii) Using the line scale, determine the length of the road (along the coast of East Harbour) from the junction of the Class B and Class C roads used in (i) to the junction of the road to Folly Point. Give your answer in kilometres and metres to the NEAREST 100 metres. **(2 marks)**

(iii) Measure the bearing from the lighthouse at Folly Point to the rock on the north coast called Ship Rock (near Easting 04). **(2 marks)**

(iv) Determine the approximate compass direction of the hotel at Daniels Harbour (near Easting 11) from the Folly Point Lighthouse. **(1 mark)**

(b) Figure 1 (**provided as an insert**) is a grid for a cross-section across the valley of the Rio Grande along Northing 67, between Eastings 03 and 06 at the same horizontal scale as the map. Using the map as a guide, **sketch** the cross-section on the grid and insert and label the position of the river. **(3 marks)**

(c) Study the area on the map, as shown below, enclosed by Eastings 19 and 21, and Northings 64 and 67.



(i) Identify the landform along the coast. **(1 mark)**

(ii) List the THREE types of agricultural land use shown in the area. **(3 marks)**

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(d) Describe the distribution of banana plantations in the area covered by the map extract. **(4 marks)**

(e) Select TWO of the following settlement patterns and describe their distribution south of Northing 65.

- Linear
- Dispersed
- Isolated
- Nucleated **(4 marks)**

(f) Compare THREE features of the drainage west of the Rio Grande with the area to the east of it. [Refer to the entire area of the map extract.] **(6 marks)**

Total 28 marks

SECTION B (Natural Systems)

Answer ONE question from this section.

2. (a) Study Table 1 which shows slope failures recorded for different rock types and then answer the questions that follow.

TABLE 1: SLOPE FAILURES RECORDED FOR DIFFERENT ROCK TYPES

Rock Type	Area (km^2)	Number of Landslides	Number of Landslides per km^2
Volcanics	1.1	67	59
Landslide deposits	0.3	20	67
Limestones	2.6	8	
Intrusive igneous rocks	3.2	209	66
Alluvial deposits	1.5	5	4
Total	8.7		

(i) How many landslides were recorded? **(1 mark)**

(ii) Which rock type had the HIGHEST number of landslides? **(1 mark)**

(iii) Calculate the number of landslides per square kilometre on limestones. **(1 mark)**

(iv) State the number of landslides that occurred on the rock type with the SMALLEST area. **(1 mark)**

(b) (i) Identify TWO landforms that are formed at plate boundaries. **(2 marks)**

(ii) Describe what happens at divergent and convergent plate boundaries. **(6 marks)**

(c) Explain how and why the shape of the cross-section of a river valley differs in its upper and lower courses. **(4 marks)**

(d) With the aid of FULLY annotated diagrams explain how spits and tombolos are formed. **(8 marks)**

Total 24 marks

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3. (a) Draw a well-labelled diagram to show THREE main features of a meander. **(4 marks)**

(b) (i) State FOUR conditions that are required for the successful growth of coral reefs. **(4 marks)**

(ii) Describe fringing reefs and barrier reefs. **(4 marks)**

(c) Account for the formation of

(i) waterfalls **(6 marks)**

(ii) deltas. **(6 marks)**

Total 24 marks

4. (a) Study Table 2 which shows the temperature (°C) and relative humidity (RH%) for a Caribbean island between 6 a.m. and 6 p.m. and answer the questions below.

TABLE 2: CHANGES IN TEMPERATURE AND HUMIDITY

Time (hr)	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800
Temp. (°C)	24	24.5	25	25.7	26	26.6	27.3	28.1	29	30	29	28	26.3
RH (%)	80	78	75	60	55	49	47	39	36	30	37	44	47

(i) Between which TWO hours did the temperature start to decrease? **(1 mark)**

(ii) At what time was the HIGHEST relative humidity observed? **(1 mark)**

(iii) State the relationship between temperature and relative humidity. **(2 marks)**

(b) (i) What are 'tropical waves'? **(2 marks)**

(ii) Describe the characteristics of THREE elements of the weather associated with the **passage** of a tropical wave. **(6 marks)**

(c) **An answer sheet is provided for this question.** Complete Table 3 on the answer sheet to compare the adaptations of trees to the climate in equatorial and tropical continental regions.

Give ONE adaptation in EACH case. **(12 marks)**

Total 24 marks

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SECTION C (Human Systems)

Answer ONE question from this section.

5. (a) Draw a sketch map of a Caribbean country that you have studied and on it indicate ONE area of dense settlement and ONE area of sparse settlement. **(4 marks)**

(b) (i) Define the term 'urbanization'. **(2 marks)**

(ii) Explain how urbanization occurs in the Caribbean. Include THREE causes in your response. **(9 marks)**

(iii) Discuss ONE negative effect of urbanization in ONE **named** capital city in the Caribbean. **(3 marks)**

(iv) Outline THREE measures aimed at controlling urbanization in the Caribbean. **(6 marks)**

Total 24 marks

6. (a) The value (in thousand dollars) of the gross domestic products for selected sectors in Country X is presented in Table 4.

TABLE 4: VALUE OF GROSS DOMESTIC PRODUCTS (GDP) OF COUNTRY X

Sector	GDP ($Thousand)
Agriculture	13 500
Manufacturing	32 500
Services	170 700

Draw a pie chart (diameter 4 cms) to illustrate the data presented in Table 4. **(4 marks)**

(b) (i) Define the term 'economic activity'. **(2 marks)**

(ii) For ONE type of economic activity you have studied, describe THREE changes that have taken place. **(6 marks)**

(c) Explain THREE challenges faced by any TWO types of economic activity in the Caribbean. **(12 marks)**

Total 24 marks

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7. (a) **Figure 2 is provided as an insert for this question.** Table 5 presents data on the value of agricultural exports from Country X.

TABLE 5: VALUE OF AGRICULTURAL EXPORTS FROM COUNTRY X ($ '000)

Year	2001	2002	2003	2004
Value ($ '000)	151 700	138 000	150 500	147 000

Using the axes provided in Figure 2, draw a bar graph to illustrate the data. Label your graph appropriately. **(4 marks)**

(b) (i) Define the term 'agriculture'. **(2 marks)**

(ii) Describe THREE ways in which agriculture is important to the Caribbean. **(6 marks)**

(c) Compare 'peasant farming' and 'commercial arable farming' in a **named** Caribbean country using the following headings:

(i) Crops and farm size

(ii) Farming methods

(iii) Labour and market **(12 marks)**

Total 24 marks

SECTION D (Human-Environment Systems)

Answer ONE question from this section.

8. (a) Study Table 6 which provides data on the annual average number of people made homeless by natural disasters from 1972 to 1976 and answer the questions that follow.

TABLE 6: NUMBER OF PERSONS MADE HOMELESS BY NATURAL DISASTERS, 1972 TO 1976

Disaster	Annual Average
Earthquake	248 200
Flood	3 356 500
High wind	1 069 000
Volcano	15 000
Total	4 688 700

For the period 1972 to 1976,

(i) how many persons were made homeless by volcanoes annually? **(1 mark)**

(ii) what is the average number of persons who were affected by **climatic** disasters annually? **(2 marks)**

(iii) what was the annual percentage of persons homeless from natural disasters as a result of high winds? **(1 mark)**

(b) For a country you have studied describe FOUR ways in which EITHER an earthquake, OR a volcanic eruption, OR a hurricane affected life or property. **(8 marks)**

(c) For EITHER a hurricane, OR an earthquake, OR a volcano explain how EACH of THREE precautions can be used to reduce its impact. **(12 marks)**

Total 24 marks

9. (a) Study Table 7 which shows carbon dioxide emissions per person and GNP per capita for selected countries and answer the questions below.

TABLE 7: CARBON DIOXIDE EMISSIONS PER PERSON (TONNES) AND GNP PER CAPITA

Countries	1980	2001	GNP (1998)
USA	20.4	19.8	29 340
Canada	17.1	14.2	20 020
Antigua	2.3	5.2	—
Jamaica	4.0	4.2	1 680
Guyana	2.3	2.1	700
Grenada	0.5	2.1	—

Sources: Wilson, 2004 and Collins-Longman Atlas, 2002

(i) Which country had the SMALLEST increase in carbon dioxide emissions per person between 1980 and 2001? **(1 mark)**

(ii) Calculate the change in carbon dioxide emissions per person for Canada. **(2 marks)**

(iii) State the relationship between carbon dioxide emissions and the GNP per capita of the countries. **(1 mark)**

(b) (i) Define the term 'air pollution'. **(2 marks)**

(ii) Describe THREE causes of river pollution in a **named** Caribbean country. **(6 marks)**

(c) Explain how TWO measures that have been implemented by Caribbean countries can reduce EACH of the following:

(i) The emission of greenhouse gases **(6 marks)**

(ii) Land pollution **(6 marks)**

Total 24 marks

10. (a) Study Figure 3 which shows the differences in the average annual temperature from 1900 to 2000 and answer the questions that follow.

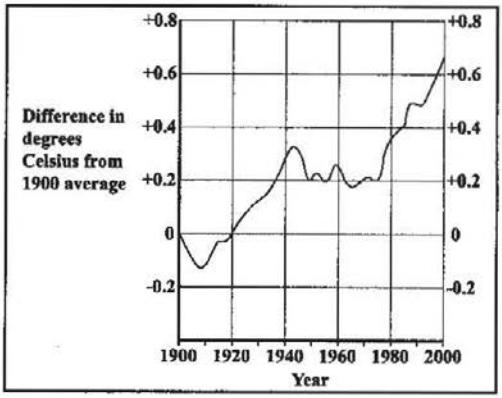


Figure 3. Differences in average annual temperature, 1900 - 2000

Source: http://www.bbc.co.uk/scotland/education/bitesize/higher/img/geography/physical/atmosphere/warming_02globalmean.gif

(i) Determine the difference in average annual temperature from the 1900 average in

a) 2000

b) 1910. **(2 marks)**

(ii) During which quarter (1900-1925, 1925-1950, 1950-1975 or 1975-2000) was the change in average annual temperature

a) fastest?

b) smallest? **(2 marks)**

(b) Describe the process which produces the greenhouse effect. **(4 marks)**

(c) For any TWO greenhouse gases describe how the concentration of EACH increases in the atmosphere. **(4 marks)**

(d) Using examples from a developed country, explain how TWO measures can reduce the production of greenhouse gases. **(6 marks)**

(e) Compare THREE possible consequences of global warming in the Maldives or Mauritius with those in a **named** Caribbean country. **(6 marks)**

Total 24 marks

END OF TEST

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Grid for Question 1 (b)

Centre Number .....

Candidate's Number .....

Sketch of the cross-section across the Rio Grande River Valley, Jamaica
along
Northing 67, between Eastings 03 and 06

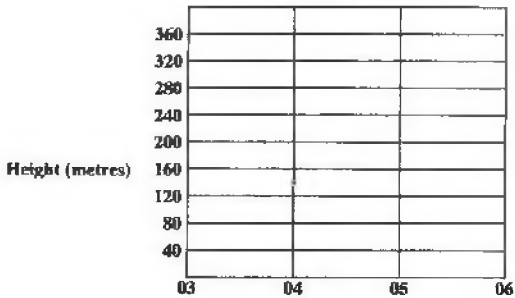


Figure 1. Cross-section

TO BE ATTACHED TO YOUR ANSWER BOOKLET

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Answer Sheet for Question 4 (c)

Centre Number .....

Candidate's Number .....

TABLE 3

Part of Tree	Equatorial		Tropical Continental	
	Adaptation	Reason	Adaptation	Reason
Leaves	1 mark	1 mark	1 mark	1 mark
Trunk	1 mark	1 mark	1 mark	1 mark
Root	1 mark	1 mark	1 mark	1 mark

(12 marks)

TO BE ATTACHED TO YOUR ANSWER BOOKLET

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Graph Paper for Question 7 (a)

Centre Number .....

Candidate's Number .....

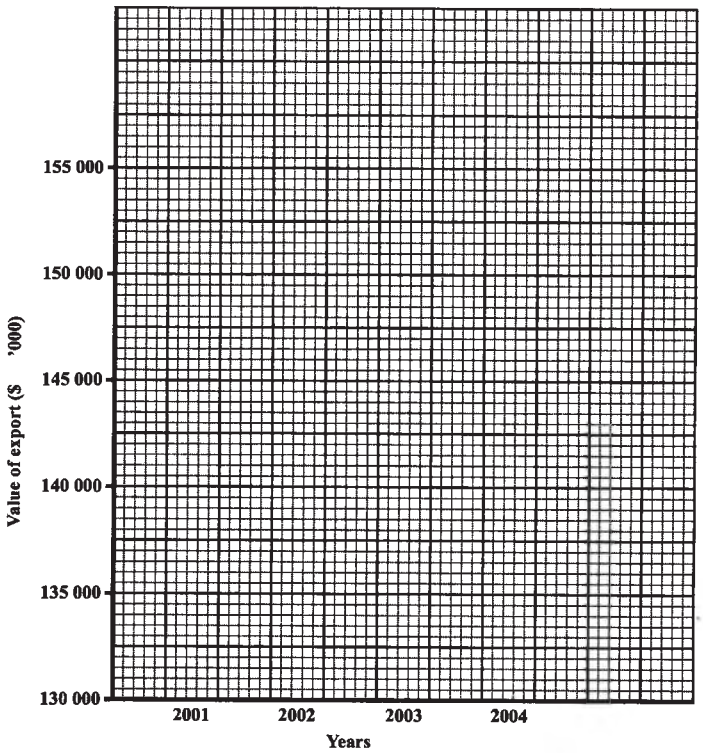


Figure 2

TO BE ATTACHED TO YOUR ANSWER BOOKLET