

Geography III

021

08 Nov. 2011 8.30am -11.30 am

REPUBLIC OF RWANDA



**RWANDA EDUCATION BOARD (REB)
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ADVANCED LEVEL NATIONAL EXAMINATIONS 2011

SUBJECT: GEOGRAPHY

PAPER III: PHYSICAL GEOGRAPHY

**COMBINATION: HISTORY - GEOGRAPHY - ECONOMICS(HEG)
MATHEMATICS - ECONOMICS - GEOGRAPHY(MEG)
MATHEMATICS - PHYSICS - GEOGRAPHY (MPG)
BIOLOGY- CHEMISTRY - GEOGRAPHY(BCG)
LITERATURE- ECONOMICS- GEOGRAPHY (LEG)
HISTORY - GEOGRAPHY- LITERATURE (HGL)**

DURATION: 3 HOURS

INSTRUCTIONS:

This paper consists of THREE Sections A and B and C.

SECTION A: Answer **ALL** the questions. **(55 marks)**
SECTION B: Answer **THREE** questions of your choice. **(30 marks)**
SECTION C : Answer **ONE** question in section C. **(15 marks)**

Section A: Attempt all questions (55 marks)

- 1 (a) What happens when the Moon comes between the Earth and the Sun and fully or partially covers the sun? (1 mark)
(b) When does a lunar eclipse occur? (1 mark)
(c) What causes a sea breeze? (1 mark)
2. (a). What is an inselberg? (1 mark)
(b) Describe two ways in which inselbergs are formed. (2 marks)
3. (a) What is a tsunami? (1 mark)
(b) State any one effect of a tsunami. (1 mark)
(c) State two natural disasters that have occurred in Rwanda in recent times. (2 marks)
4. State any 3 conditions necessary for coral reef formation. (3 marks)
5. Draw a sketch map of Rwanda and on it, mark and name: (5 marks)
(i) Nyamyumba thermal springs
(ii) Gifurwe mineworks
(iii) Gishwati forest reserve ✓
(iv) Kadahokwa water treatment plant
6. (a) Explain two ways in which islands can form? (2 marks)
(b) Give two examples of islands on the East Coast of Africa (2 marks)
(c) Explain the difference between an inselberg and an Island. (2 marks)
7. (a) What is a Delta? (2 marks)
(b) What kind of delta is found on the Mississippi River? (1 mark)
(c) Name two African rivers with Deltas. (2 marks)
8. Study **Figure 1** below and answer the questions that follow:

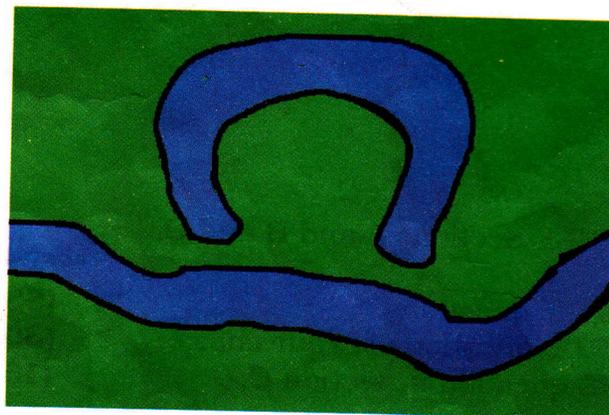


Figure 1

- (a) What is an oxbow lake? (1 mark)
- (b) Explain how an oxbow lake is formed. (3 marks)
- (c) Give any two examples of oxbow lakes in Rwanda. (2 marks)

- 9 (a) What is a graben? (1 mark)
- (b) Give any 3 characteristics of Rift valley lakes. (3 marks)
 - (c) Give three uses of lakes to human beings. (3 marks)

10. Table 1 below shows the climate data of station X in the Yangtse - Kiang River basin. Study it carefully and answer the questions that follow:

Months	J	F	M	A	M	J	J	A	S	O	N	D
Temp (°c)	4.4	6.1	10.0	16.7	21.7	26.7	29.4	29.4	25.0	19.4	12.8	7.2
Rainfall (mm)	48	48	97	152	165	244	180	97	71	81	48	28

Table 1:

- (a) Calculate:
 - (i) annual temperature range for the station (1 mark)
 - (ii) total annual rainfall (1 mark)
- (b) Describe the characteristics of the climate for station X. (2 marks)
- (c) Identify the climatic type of the station X. (1 mark)
- (d) Explain the influence of climate on agricultural activities in the Yangtse-Kiang river basin. (2 marks)

11. Study the **Figure 2** below showing percentage of world forests and answer the questions that follow:

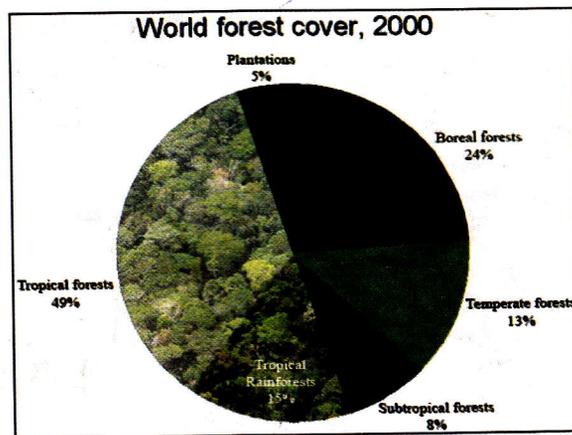


Figure 2:

- (a) Name three countries in Africa covered by equatorial rain forest. **(3 marks)**
- (b) Name a geographical area in Southern America where equatorial rain forests are found. **(1 mark)**
- (c) Identify any two ways of saving rainforests. **(2 marks)**

SECTION B: Answer any three questions of your choice. (30 marks)

12. There are many kinds of natural disasters occurring on a regular basis. They occur when forces of nature damage the environment and man made structures. If people live in the area, natural disasters can cause a great deal of human suffering.

- a) Haiti was affected by the earthquake on January 12, 2010. How did the Haiti earthquake affect Haitians? **(3 marks)**
- b) (i) What were the causes of the recent Japanese earthquake at Sendai? **(2 marks)**
- (ii) What were the causes of the recent destructive explosions in Fukushima nuclear reactors? **(2 marks)**
- (iii) What effect have the above disasters had on the Japanese Economy? **(3 marks)**

13. The Himalaya is a mountain range in Asia, separating the Indian subcontinent from the Tibetan Plateau.

- (a) Name the highest peak of Himalaya Mountains. **(1 mark)**
- (b) Explain how the Himalayas were formed. **(3 marks)**
- (c) Name three main rivers in the Himalayas. **(3 marks)**
- (d) Explain how the Himalayas influence the climate of the Indian subcontinent. **(3 marks)**

14. Figure 3 below shows the Structure of the Atmosphere. Study it and answer the questions that follow:

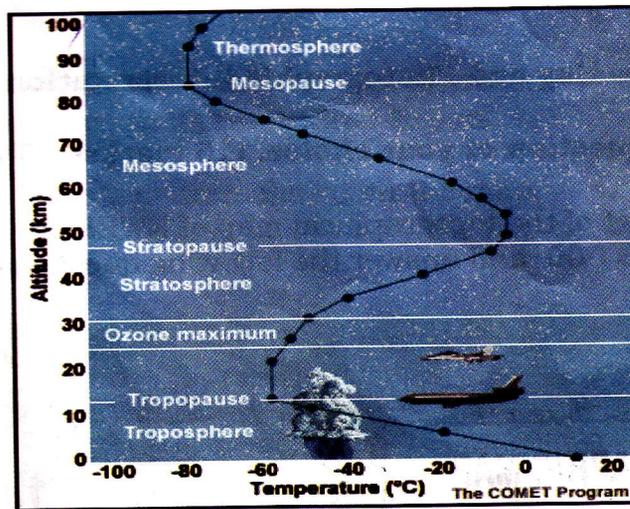


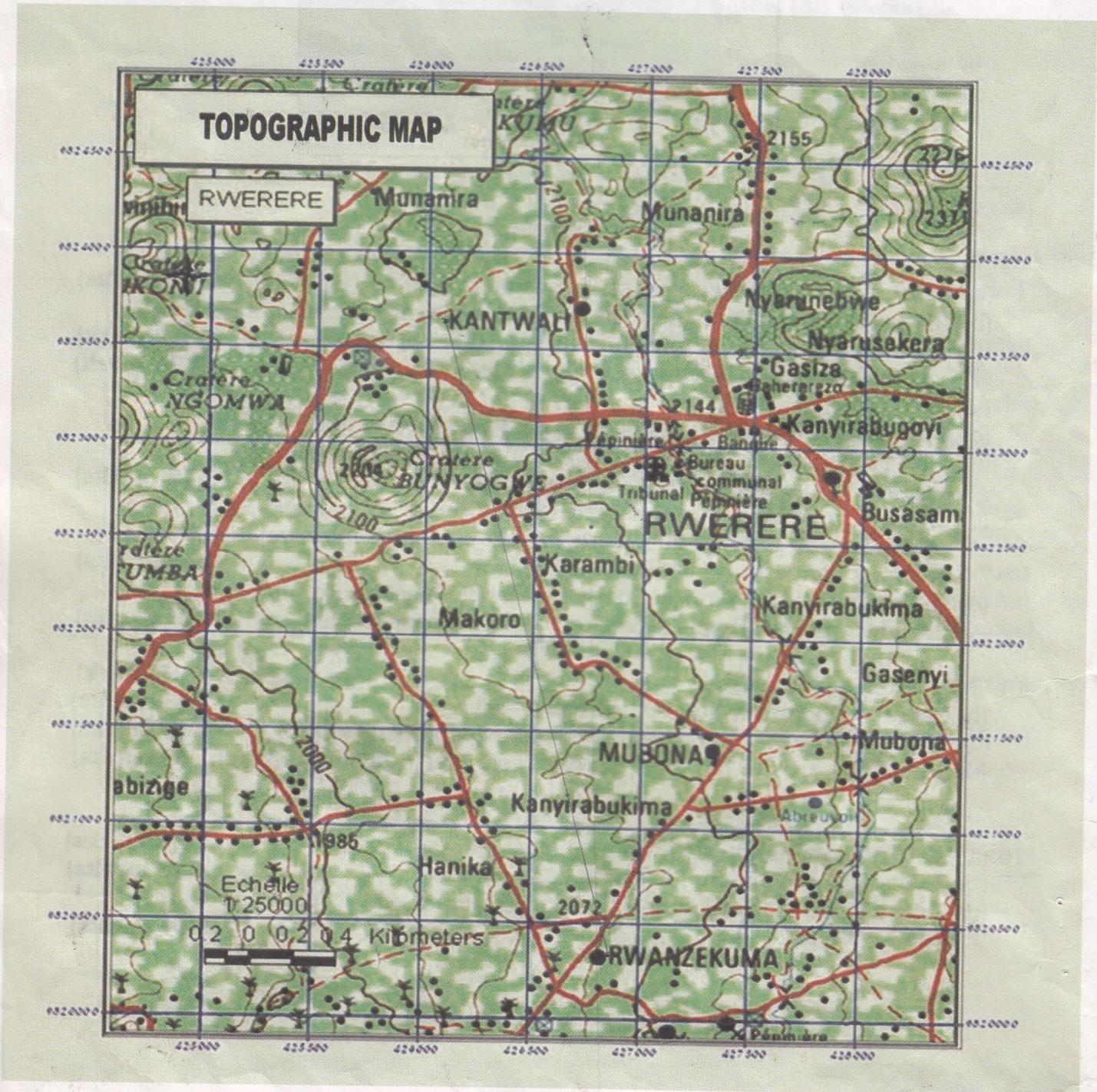
Figure 3:

- (a) Identify two characteristics of Troposphere **(2 marks)**
- (b) The pressure systems show the distribution of atmosphere pressure. **(1 mark)**
 (i) Name the LOW pressure areas **(1 mark)**
 (ii) Name the HIGH pressure centres **(1 mark)**
- (c) The temperature averages is 15°C near the surface and -57°C at the Tropopause. Convert those Celsius temperatures into Fahrenheit and show the work out. **(2 marks)**
- (d) What is the relative humidity of the air if the actual vapor density is 10 g/m³ at 20°C compared to the saturation vapour density temperature of 17.3 g/m³? **(2 marks)**
- (e) Explain why the temperature generally decreases with increasing height up to the Tropopause (top of the troposphere). **(2 marks)**
- ✓ 15. (a) What is a river basin. **(1 mark)**
 (b) Name any 3 river system patterns. **(3 marks)**
 (c) Describe 4 ways through which rivers transport their load **(4 marks)**
 a. (d) Why is the erosive power of the river very low in hot areas? **(2 marks)**
16. (a) State any 3 characteristics of periglacial areas. **(3 marks)**
 (b) Give any 3 depositional features of glaciation. **(3 marks)**
 (c) Describe the economic importance of glaciation to human beings. **(4 marks)**

Section C: Map Reading and Photographic interpretation

Answer only one question of your choice. (15 marks) TOPOGRAPHIC MAP

17. Study the extract of the topographical map of RWERERE with scale of 1: 25 000 and answer the following questions:



- (a) (i) What are the main activities carried out in that area? **(2 marks)**
(ii) Identify two main crops that grow in that region. **(2 marks)**
- (b) (i) Describe the settlement pattern shown on the map. **(2 marks)**
(ii) State two problems which may be faced by the population living in that area. **(2 marks)**
- (c) (i) Calculate the difference between the top level of Bunyogwe crater and the contour line 2100. **(1 mark)**
(ii) Calculate the slope of Bunyogwe if the horizontal distance separating the top level and the contour line, is 1, 3 kilometers? **(2 marks)**
(iii) Explain why we find many craters in that region. **(2 marks)**
- (d) Join with a vertical line **RWANZEKUMA** and **KANTWALI**, then measure and state in kilometers the distance between the two villages. **(2 marks)**

18. Study the **protograph 1/2011** provided below and answer the questions that follow:



Source: CNLS, National Strategic Plan for HIV and AIDS 2009-2012(a)

- (a) Describe the relief of the region of the area shown on the photograph. **(3 marks)**
- (b) What are the man-made features in the foreground and the middle of the photograph? **(2 marks)**
- (c) Describe the organization of farming activities in that area. **(3 marks)**
- (d) What is the method of soil protection shown in the photograph? **(2 marks)**
- (e) If you were a planner, suggest the steps you would take to improve on land use in that area. **(3 marks)**
- (f) Name any two districts in Rwanda where this photo might have been taken. **(2 marks)**