

**Geography and  
Environment I  
005**

**18/11/2019  
8:30 AM – 11:30 AM**



**ORDINARY LEVEL NATIONAL EXAMINATIONS, 2019**

**SUBJECT: GEOGRAPHY AND ENVIRONMENT**

**PAPER I: PHYSICAL GEOGRAPHY**

**DURATION: 3 HOURS**

**INSTRUCTIONS:**

1. Write your names and index number on the answer booklet as written on your registration form and **DO NOT** write your names and index number on additional answer sheets of paper if provided.
2. Do not open this question paper until you are told to do so.
3. This paper has **THREE** sections: **A**, **B** and **C**.

**SECTION A:** This section is compulsory. **(55 marks)**

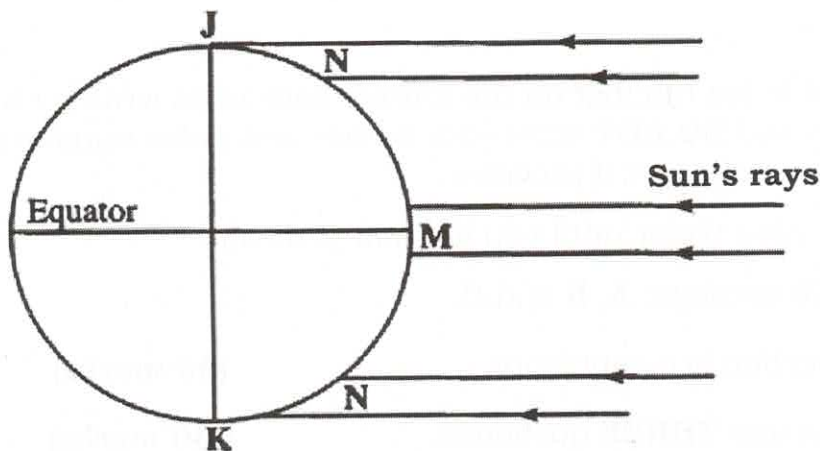
**SECTION B:** Attempt any **THREE** questions. **(30 marks)**

**SECTION C:** Attempt any **ONE** question. **(15marks)**

4. Use only a **blue** or **black** pen.

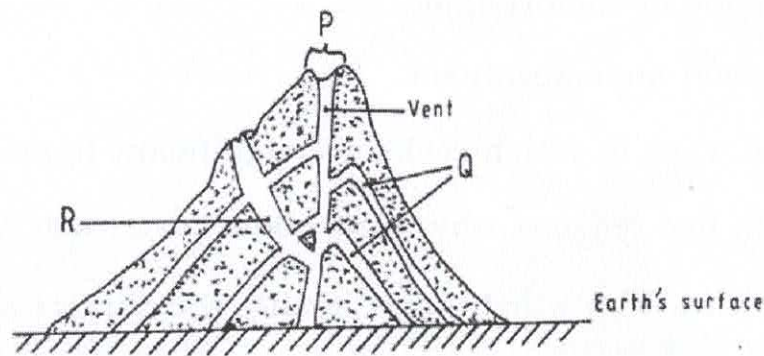
**SECTION A: Attempt all questions (55 marks)**

- 1) What is the longitude of place X whose local time is 8:00 a.m when local time at GMT is noon? **(1 mark)**
- 2) Show the relationship between geography and mathematics. **(2 marks)**
- 3) Differentiate between topographical maps and Atlas maps. **(2 marks)**
- 4) Give reasons why the interior of the earth is very hot. **(3 marks)**
- 5) Describe the characteristics of inter-tropical convergence zone. **(4 marks)**
- 6) Give four ways to explain how the savanna grasslands have adapted to climatic conditions. **(4 marks)**
- 7) A Rain gauge is the instrument used to measure the amount of rainfall in a day. Explain how it works. **(5 marks)**
- 8) Explain the importance of soil on plant growth. **(4 marks)**
- 9) The diagram below shows the angles of the sun's rays at different latitudes when the sun is at the equator. Use it to answer questions (a) and (b).



- a) Name the parts of the earth's surface marked J and K. **(2 marks)**
  - b) Explain three reasons why the intensity of the insolation is higher at M than at N. **(3 marks)**
- 10) Explain how a horst block is formed. **(4 marks)**

- 11) The diagram below is of a composite volcano, study it and answer the questions that follow.



- a) Name the features marked P, Q and R. **(3marks)**  
b) How is a parasitic cone formed? **(4marks)**  
c) Explain how the movement of magma causes earth movement. **(4marks)**
- 12) Distinguish between differed tributary and differed confluence. **(2marks)**
- 13) Describe three characteristics of a mature stage of a river. **(3marks)**
- 14) Give five ways to explain how faulting influences drainage systems. **(5marks)**

**SECTION B: Attempt any three questions (30 marks)**

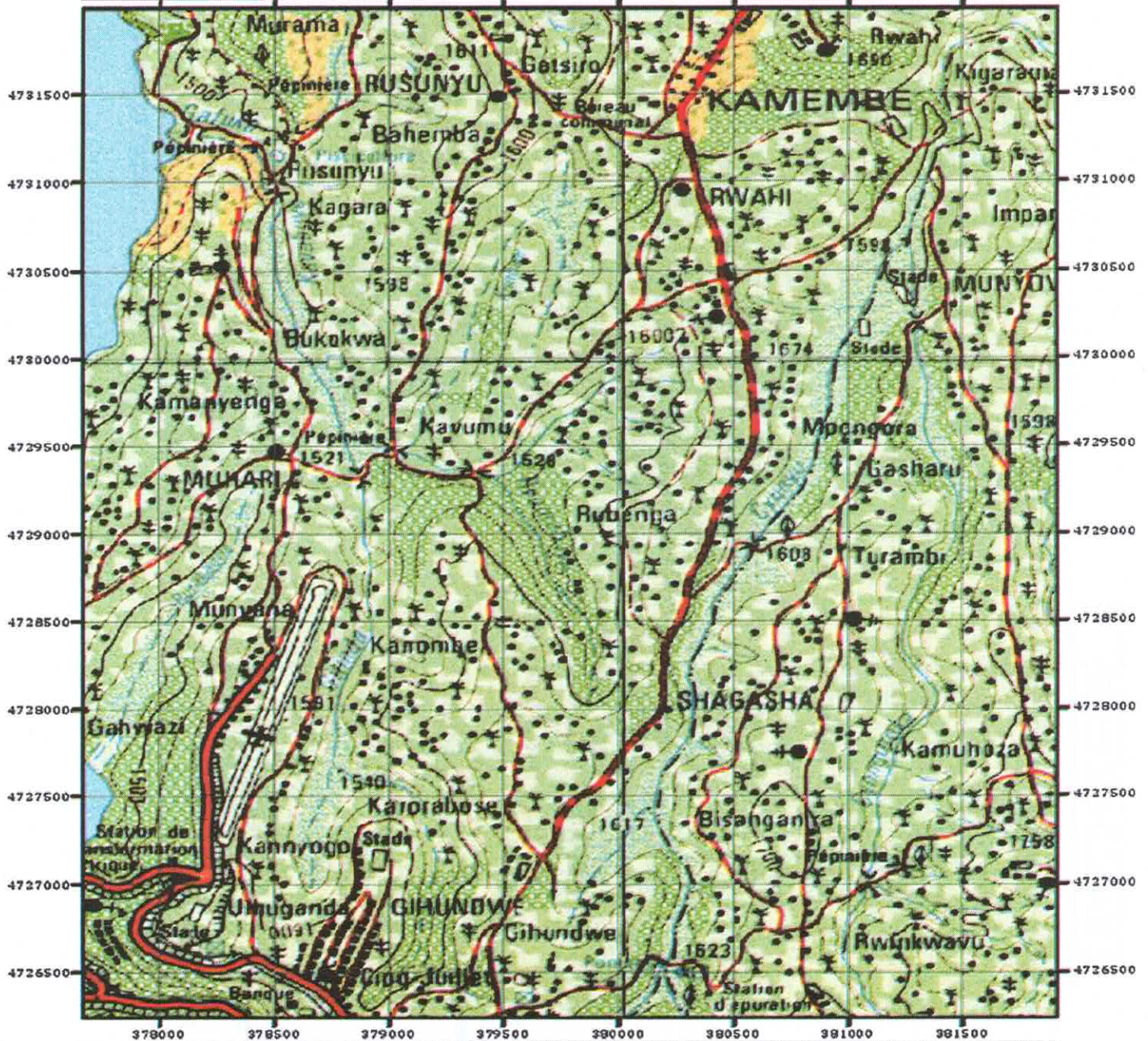
- 15) a) Describe the formation of fold mountains according to the convectional current theory. **(4marks)**  
b) Explain the effects of folding on the physical environment. **(6marks)**
- 16) a) What is meant by the term "relative humidity"? **(2marks)**  
b) Explain factors influencing the humidity of an area. **(8marks)**
- 17) a) Describe five human causes of earthquakes. **(5marks)**  
b) Explain the effects of Earthquakes on the physical environment. **(5marks)**

- 18) a) Describe the following processes of formation of metamorphic rocks:
- (i) Dynamic metamorphism. **(2marks)**
  - (ii) Thermal metamorphism. **(2marks)**
- b) Explain ways in which rocks are significant to man. **(6marks)**
- 19) a) Explain five reasons why some lakes have fresh water. **(5marks)**
- b) Explain ways in which lakes modify the climate of the surrounding areas. **(5marks)**

**SECTION C: Attempt any one question (15 marks)**

- 20) Study the map extract of Kamembe and answer the questions that follow:
- a) Draw a sketch map of the area shown on the map extract and on it, mark and name:
    - (i) Stade umuganda **(1mark)**
    - (ii) Station purification. **(1mark)**
    - (iii) Air strip. **(1mark)**
  - b) Describe the vegetation of the area shown on the map extract. **(3marks)**
  - c) Describe the relationship between relief and:
    - (i) drainage. **(2marks)**
    - (ii) settlement. **(2marks)**
    - (iii) transport network. **(2marks)**
  - d) Identify and describe the economic activity being carried out in the area shown on the map extract. **(3marks)**

# Topographical Map of Rwanda: Kamembe











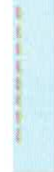





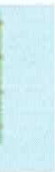





Source:  
 Topographical map of Rwanda in 43 sheets  
 at 1/50000 scale was produced by IGN in 1989.  
 The harcopy maps were scanned and  
 georeferenced by NISR in 2006

Geographic Coordinate System:  
 Coordinate System : ITRF 2005  
 Projection : Transverse Mercator  
 Datum : ITRF 2005

Scale/Echelle  
 1:25,000

SCALE/ECHELLE 1:25,000



	<b>Main tarmac road</b> Route nationale asphaltée		<b>Dense/nucleated settlement</b> Habitat concentré		<b>Natural forest, plantation</b> Forêt naturelle, boisement
	<b>Main murrum road</b> Route nationale non asphaltée		Sparse, scattered Dispense, remarquable		<b>Savannah or pasture</b> Savane ou pâturage
	<b>Feeder road</b> Route communal		<b>Hospital, health centre, dispensary</b> Hopital, centre de santé, dispensaire		<b>Upland crops, valley crops</b> Cultures des collines
	<b>Track</b> Piste carrossable		<b>Sectorial bureau, school, dipping tank</b> Bureau de secteur, école, dipping tank		<b>Rangeland, cash crop</b> Prairie, cultures industrielles
	<b>Path</b> Sentier		<b>Religious edifices: church, temple, mosque</b> Edifices religieux: église, temple, mosquée		<b>Papyrus</b>
	<b>Boulevard/road lined with trees</b> Route bordée d'arbres		<b>Border post, market</b> Poste de douane, marché		<b>Bananas, sugar cane, coffee</b> Bananier, canne à sucre, café
	<b>Road under construction</b> Route en construction		<b>International airport, aerodrome/air strip</b> Aéroport international, aérodrome		<b>Rice, tea, cotton</b> Riz, thé, coton
	<b>Power/electric line</b> Ligne de transport d'énergie électrique		<b>River</b> Rivière		<b>Quinine, pyrethrum, bamboo</b>
	<b>Bridge, footbridge</b> Pont en dur, pont en bois		<b>Pond, marsh, a well</b> Etang, marc, puits		<b>Terraces</b> Talus
	<b>Contours</b> Courbe de niveau		<b>Lake, swamp</b> Lac, marais		<b>Rock, cliff</b> Rocher, abrupt
	<b>Contours, contour intervals, depression</b> Coube de niveau, intercalaires, cuvette		<b>Falls, dam</b> Chutes, barrage		<b>Trigonometrical pillar</b> Détail particulier
	<b>Quarry, factory and/or industrial complex</b> Carrière, usine et/ou complexe industriel		<b>Border pillar, radio booster station</b> Borne frontière, antenne relais de radio		<b>Mine 1 operational 2 derelict</b> Mine 1 en activité 2 arrêtée

21) Study the photograph below and use it to answer the questions that follow:



- I. (a) What evidence shows that this is a ground general-view photograph? **(2marks)**
- (b) Draw a rectangle measuring 12 cm by 8 cm. **(1mark)**
- (c) On the rectangle, sketch and label the following features shown in the photograph:
- (i) tree stumps. **(1mark)**
  - (ii) forest. **(1mark)**
  - (iii) felled trees. **(1mark)**
  - (iv) the sky. **(1mark)**
- (d) Describe the characteristics of the forest shown in the photograph. **(4marks)**
- II. Suppose you have been appointed as a specialist in the ministry of environment, suggest measures you would put in place to control human encroachment on forested areas in Rwanda. **(4marks)**

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