

Geography and Environment I

005

26/07/2021 8.30 AM - 11.30 AM



ORDINARY LEVEL NATIONAL EXAMINATIONS, 2020-2021

SUBJECT: GEOGRAPHY AND ENVIRONMENT I

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 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. (15 marks)
4. Use only a **blue** or **black** pen.

SECTION A: ATTEMPT ALL QUESTIONS (55 marks)

- 1) Differentiate between mean annual temperature range and mean monthly temperature. **(2 marks)**
- 2) Briefly describe effects of rotation of the Earth. **(3 marks)**
- 3) Describe how mudflow is formed. **(4 marks)**
- 4) Explain how the following farming practices cause soil erosion.
 - a) Burning. **(2 marks)**
 - b) Monocultures. **(2 marks)**
- 5) a) What is a river divide? **2 marks)**
b) Describe three ways by which a river transports its load. **(6 marks)**
- 6) How can water cause both chemical and physical weathering? **(2 marks)**
- 7) Why are granitic magmas thicker than basaltic magmas? **(2 marks)**
- 8) Describe how lava domes are formed. **(4 marks)**
- 9) Explain the negative effects of climate change on the physical environment. **(5 marks)**

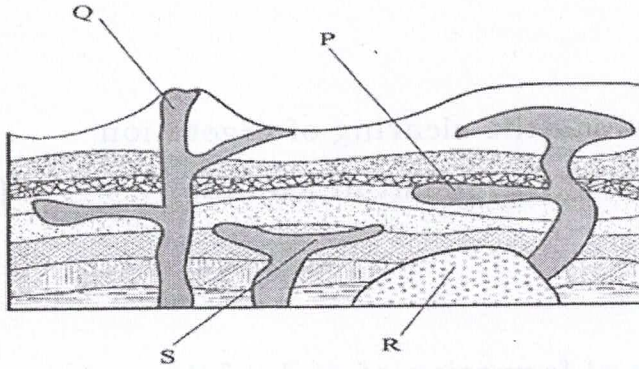
- 10) Explain how the following factors influence the distribution of vegetation:
- a) Relief. (2 marks)
 - b) Soils. (2 marks)
- 11) Describe three causes of Vulcanicity. (3 marks)
- 12) Explain four ways in which the clearing of vegetation has affected the natural environment in Rwanda. (4 marks)
- 13) Describe the processes of formation of each of the following types of sedimentary rocks:
- a) Mechanically formed sedimentary rocks. (4 marks)
 - b) Organically formed sedimentary rocks. (4 marks)
- 14) What is meant by the term **environmental degradation**? (2 marks)

SECTION B: ATTEMPT ANY THREE QUESTIONS (30 marks)

15) a) Describe four factors that influence river erosion. **(4 marks)**

b) Explain how stream cut Valleys are formed. **(6 marks)**

16) The diagram below shows some intrusive volcanic features.



a) Name the features marked Q, P, S and R. **(2 marks)**

b) Explain ways in which volcanic features influence human activities. **(8 marks)**

17)a) Explain how the following factors influence soil formation.

(i) Time. **(2 marks)**

(ii) Parent rock. **(4 marks)**

b) Describe four negative effects of soil erosion. **(4 marks)**

18) a) Explain how the following features are formed and for each, give an example from East Africa:

(i) A crater. **(3 marks)**

(ii) A geyser. **(4 marks)**

(iii) A lava plateau. **(3 marks)**

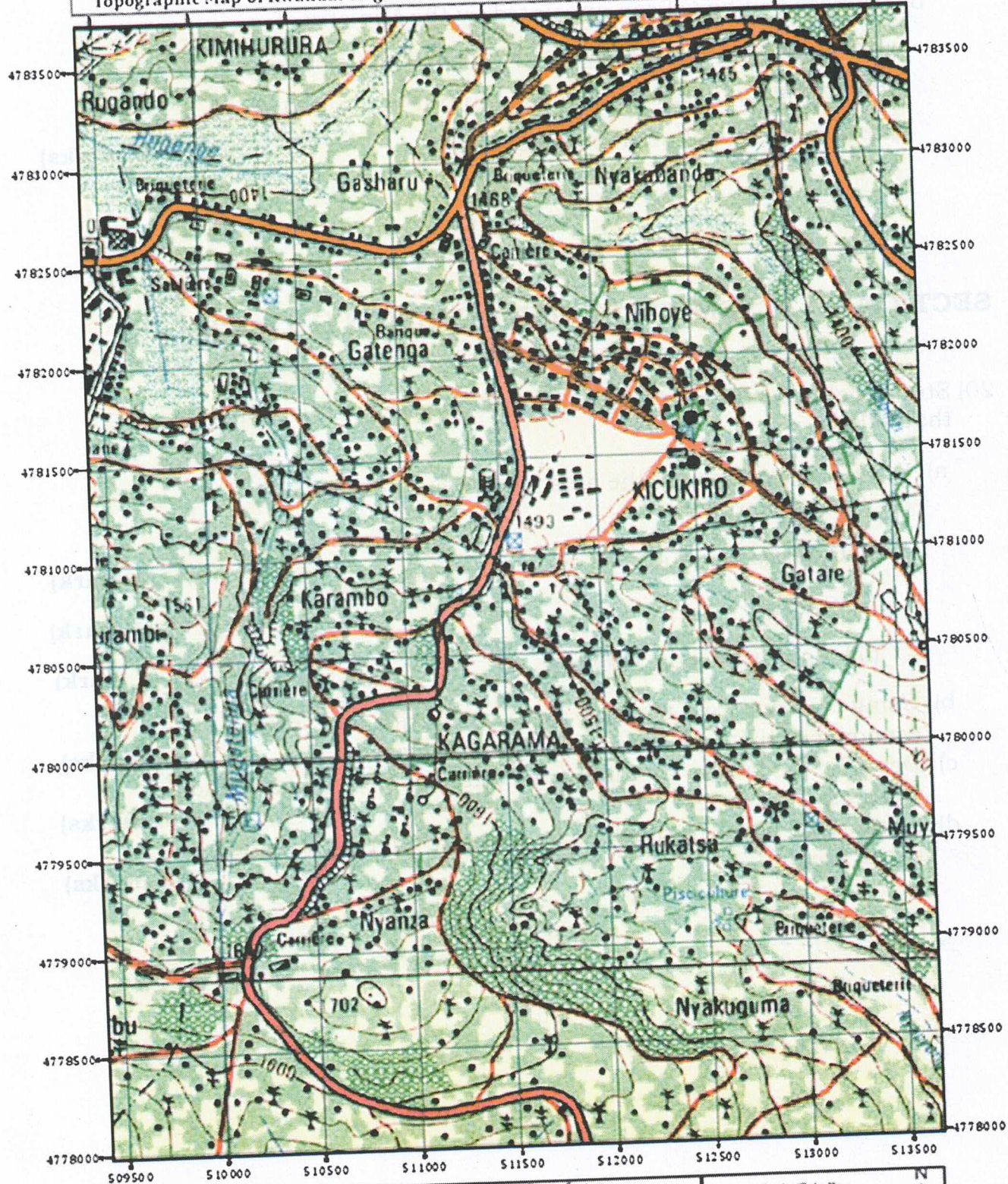
- 19) a) Explain four main causes of climate change in Rwanda. (4 marks)
- b) Suppose you have been appointed by the Ministry of environment as a specialist in charge of climate change, what mitigation measures would you put in place to avoid the increase of pollutant emissions? (6 marks)

SECTION C: ATTEMPT ANY ONE QUESTION (15 marks)

20) Study the map extract of Kagarama and answer the questions that follow:

- a) Draw a sketch map of the area shown on the map and on it, mark and name :
- (i) Gatenga Banque. (1 mark)
 - (ii) Quarry. (1 mark)
 - (iii) Major transport network. (1 mark)
- b) Using evidence from the map extract, describe four major economic activities carried out in Kagarama. (4 marks)
- c) Describe the factors that influence establishment of man-made features. (4 marks)
- d) Explain the problems likely to be faced by the people living in the area. (4 marks)

Topographic Map of Rwanda: Kagarama


















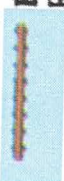

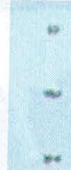
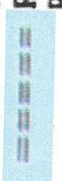











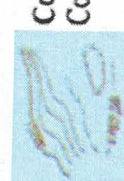





Source:
Topographic map of Rwanda in 43 sheets
at 1/50000 scale was produced by IGN in 1989.
The hardcopy maps were scanned and
georeferenced by NISR in 2006

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

Scale/Echelle
1:25,000

SCALE/ECHELLE 1:25.000



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

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



- (a) What is the main activity shown in the photograph above? **(2 mark)**
- (b) (i) Name one geographical region in Rwanda where the activity identified in 21 (a) above is widely practiced. **(1 mark)**
- (ii) Explain the geographical conditions that favour the activity identified in 21(a) above. **(8 marks)**
- (c) In what ways has the economic activity mentioned in (a) and (b) above been improved in Rwanda? **(4 marks)**