THE UNITED REPUBLIC OF TANZANIA

NATIONAL EXAMINATIONS COUNCIL

CERTIFICATE OF SECONDARY EDUCATION EXAMINATION

013 **GEOGRAPHY**

(For Both School and Private Candidates)

Time : 3 Hours **ANSWERS** **Year : 2004**

Instructions

1. This paper consists of sections A, B, C and D.
2. Answer all questions in section A, B and C and **one (1)** questions from section D.
3. Non-programmable calculators may be used.
4. Communication devices and any unauthorised materials are **not** allowed in the examination room.
5. Write your **Examination Number** on every page of your answer booklet(s).

1. For each of the items (i) – (x) choose the correct answer from among the given alternatives and write its letter beside the item number.

(i) River erosion operates in three ways, namely
A Surface, vertical and lateral
B Headward, vertical and surface
C Lateral, frontal and surface
D Frontal, lateral and headward
E Lateral, subsurface and surface

The correct answer is A. River erosion works through vertical erosion which deepens the channel, lateral erosion which widens it, and surface erosion which removes material from the surface.

(ii) The magnitude of an earthquake refers to the
A Effects produced by the earthquake
B Large amplitude waves known as L-waves
C Point at which earthquake originates
D Total amount of energy released
E Point on the earth's surface above the focus

The correct answer is D. Magnitude measures the total amount of energy released by an earthquake, not the effects or location.

(iii) If Ronaldo De Lima scores a goal for his national team playing in Colombo (80°E) at 4:00 p.m. local time, what would be the time at Mtwara in Tanzania (40°E)?
A 6:40 a.m.
B 1:20 a.m.
C 6:40 p.m.
D 1:20 p.m.
E 2:40 p.m.

The correct answer is D. The difference in longitude is 40°, equal to 2 hours 40 minutes. Colombo is ahead, so Mtwara's time is 1:20 p.m.

(iv) Plants with long roots, thorny stems, needle shaped leaves, wax or hair are found in

A The Mediterranean region

B Hot deserts

C Tropical grasslands

D The equatorial region

E The monsoon region

The correct answer is B. These plant adaptations are typical of hot deserts, where water conservation is essential.

(v) The part of the earth that forms continental blocks is called

A Sima

B Core

C Mantle

D Sial

E Hydrosphere

The correct answer is D. Sial, made of silica and aluminum, forms the continental crust.

(vi) The temperature of Dar es Salaam at sea level is 31°C. What will be the temperature of Arusha 2500 m above sea level?

A 16°C

B 29.5°C

C 15°C

D 46°C

E 32.5°C

The correct answer is A. Temperature decreases at a rate of 6.5°C per 1000 m. Drop = 2.5 × 6.5 = 16.25°C. 31°C – 16.25°C ≈ 16°C.

(vii) Reverse fault is mainly caused by

A Earth movement

B Tensional force

C An earthquake

D Weathering
E Compressional force

The correct answer is E. A reverse fault forms when compressional forces push rocks together, causing upward movement.

(viii) Which one among the following features occurs in a glaciated lowland region?
A Esker
B Cirque
C Pyramidal peak
D Hanging valley
E Arête

The correct answer is A. Eskers are winding ridges of sand and gravel deposited by meltwater in lowland glaciated areas.

(ix) The slow movement of soil particles which can be recognised by the bending of trees and fences is referred to as
A Land slide
B Mud flow
C Soil creep
D Rock fall
E Soil erosion

The correct answer is C. Soil creep is the slow, gradual movement of soil downhill, often seen by tilted objects.

(x) A drainage system of a river where the river flows in accordance with the rock structure is called
A Discordant drainage system
B Antecedent drainage system
C Superimposed drainage system
D Back tilted drainage system
E Accordant drainage system

The correct answer is E. An accordant drainage system follows the natural rock structure and slope.

2. Match the responses in LIST B with the phrases in LIST A by writing the letter of the correct response beside the item number.

LIST A	LIST B
(i) Used to plot routes for ships crossing large stretches of oceans and aircrafts flying great distances	C. Great circles
(ii) It builds up when a glacier is stationary	F. Terminal moraines
(iii) A broad tidal channel of a river where it enters the sea	I. Estuary
(iv) The hardest part of the earth's surface	B. Lithosphere
(v) A large closed depression formed in the Karst region	A. Uvala

Answers: (i) C, (ii) F, (iii) I, (iv) B, (v) A

4. Study carefully the weather statistical data for station X given below then answer the questions that follow:

(a) Calculate the annual mean temperature.

The monthly temperatures are: 28, 27, 27, 27, 28, 28, 26, 25, 24, 26, 27, 28.

Total = 317.

Annual mean temperature = 317 ÷ 12 = 26.4°C.

(b) Calculate the annual rainfall.

The monthly rainfall values are: 2400, 2100, 2050, 1750, 1700, 1750, 1600, 1500, 1700, 1805, 2100, 2300.

Total = 22,755 mm.

Annual rainfall = 22,755 mm.

(c) Determine the temperature mode and median.

Mode is the most repeated value = 27°C.

Median is the middle value when arranged = (27 + 27) ÷ 2 = 27°C.

(d) Name three (3) cash crops that can be grown in the area surrounding station X.

Coffee can be grown because the climate provides enough rainfall and moderate temperatures.

Tea can also be grown since it requires high rainfall and cool conditions.

Sugarcane is suitable because of the high rainfall and warm temperatures.

(e) With reasons suggest the type of climate of station X.

The climate of station X is equatorial climate. This is because it has high annual rainfall above 2000 mm and fairly high temperatures throughout the year with small variations.

5. Explain briefly the following concepts as applied in research.

(a) Descriptive research.

Descriptive research involves collecting data to describe characteristics of a population or phenomenon. It does not test hypotheses but gives detailed information about a situation.

(b) Applied research.

Applied research is research that is conducted to solve practical problems. It aims at applying knowledge to improve human life or find solutions to real-world challenges.

(c) Quantitative research.

Quantitative research deals with numerical data that can be measured and analyzed statistically. It emphasizes objective measurement and uses surveys, experiments, and structured questionnaires.

(d) Research tools.

Research tools are instruments used for data collection, such as questionnaires, interview guides, observation checklists, and recording devices.

(e) Sampling techniques.

Sampling techniques are methods used to select a portion of a population for study, such as random sampling, stratified sampling, and systematic sampling. They help reduce cost and time while ensuring accuracy.

6. (a) Define the term levelling.

Levelling is the process of determining the difference in elevation between points on the earth's surface.

(b) Give the significance of levelling.
Levelling is important in construction works to ensure proper design of roads, buildings, canals, and drainage systems.

It helps in preparing accurate maps and plans by showing elevation differences in landscapes.

Levelling is also important in irrigation and water supply projects to maintain flow of water in the right direction.

It is used in surveying to set benchmarks for future measurements and comparisons.

Levelling helps engineers avoid errors in construction that may cause water logging, structural failures, or poor drainage.

7. Study carefully the map extract of MAFINGA sheet 232/4 provided then answer the following questions.

(a) Find the distance of TAZAMA pipeline from grid reference 480786 to grid reference 547830 in kilometres.
By measuring the line and applying the map scale, the distance is approximately 6.7 km.

(b) Describe the settlement pattern of the area shown in the map.
The settlement pattern is mainly nucleated, with houses concentrated in specific areas. This is due to availability of social services and transport routes.

(c) Determine the direction at which river Little Ruaha flows.
The river flows towards the north-east, as shown by the contour gradient and drainage pattern.

(d) With evidence state three major economic activities taking place in the area.
Farming is practiced as indicated by the cultivated land.
Cattle rearing is evident from grazing lands shown on the map.
Trading is also carried out as seen in market centers and transport routes.

(e) How has the amount of rainfall influenced the type of vegetation shown in the map?
High rainfall has encouraged the growth of dense vegetation such as forests and woodland.

Moderate rainfall has supported cultivation of crops and grassland for grazing.
Low rainfall in some parts has led to sparse vegetation and shrubs.

8. Study carefully the photograph below then answer the questions that follow.

(a) Name the type of photograph.
The photograph is a ground photograph.

(b) Describe the possible climate of the area.
The area likely has a tropical climate with alternating wet and dry seasons, as indicated by the mixture of trees and open land.

(c) Suggest the economic activities that might be taking place in the area.
Farming is a major activity as shown by the cleared land and presence of vegetation.
Livestock keeping is possible due to open grassland areas.
Charcoal burning or timber extraction might also take place due to the presence of trees.

(d) From which part of Tanzania was this photograph taken?
The photograph was taken from Dodoma, Singida, or Tabora regions, where such vegetation patterns and landscapes are common.

9. (a) Giving examples from Tanzania explain large scale farming.
Large scale farming involves cultivation of crops on extensive farms using modern machinery, fertilizers, and improved seeds. Examples in Tanzania include sugarcane farming in Kilombero and rice farming in Mbeya.

(b) What are the disadvantages of large scale farming in Tanzania?
One disadvantage is displacement of small farmers from their land.
It also leads to environmental degradation such as deforestation.
Large scale farming requires heavy investment, which may not be available to local farmers.
It sometimes produces crops mainly for export, leading to food shortages locally.
Employment opportunities may be limited due to mechanization.

10. (a) Discuss the factors for the development of ship manufacturing in Japan.
One factor is Japan's long coastline which provides natural harbours and shipyards.

Another factor is the availability of skilled labour and advanced technology.
Japan has a strong steel industry which supplies raw materials for shipbuilding.
There is high demand for ships both domestically and internationally.
Government support and policies also encouraged industrialization and shipbuilding.

(b) Why is ship manufacturing important to Japan?
Ship manufacturing is important because it supports Japan's export trade.
It provides employment for thousands of people.
It strengthens Japan's economy by earning foreign exchange.
It supports fishing, which is a key economic activity in Japan.
It also enhances Japan's global competitiveness in technology.

11. State and explain the determinants of age structure in a population.
    Birth rate is a determinant because high birth rates produce a youthful population while low birth rates produce an aging population.
    Death rate influences age structure since high mortality reduces the number of older people while low mortality increases life expectancy.
    Migration affects age structure because young people often migrate for work, leaving behind older populations.
    Health services affect life expectancy and survival rates of children and the elderly.
    Social and economic factors such as employment, education, and cultural practices also influence the proportion of age groups in a population.

12. Explain the forms of environmental problems facing Tanzania. What measures are taken to solve these problems?
    One problem is deforestation caused by logging, farming, and charcoal burning. To solve it, afforestation programs and use of alternative energy sources are encouraged.

Another problem is soil erosion which reduces soil fertility. Measures include contour farming, terracing, and use of cover crops.

Pollution of water sources is also a challenge. This is being solved by enforcing environmental laws and promoting proper waste management.

Desertification is spreading in semi-arid areas due to overgrazing and poor farming practices. Measures include controlled grazing and irrigation schemes.

Wildlife destruction due to poaching threatens biodiversity. The government has strengthened anti-poaching units and established conservation areas.

Rapid urbanization causes poor sanitation and waste problems. Urban planning and infrastructure development are being emphasized to solve this.