THE UNITED REPUBLIC OF TANZANIA

NATIONAL EXAMINATIONS COUNCIL

CERTIFICATE OF SECONDARY EDUCATION EXAMINATION

013 **GEOGRAPHY**

For Private Candidates

Time: 3 Hours **ANSWERS** **Year: 2013**

Instructions

1. This paper consists of ELEVEN questions.

2. Answer all questions in section A and B and two questions from section C.

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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) The line at which the day is gained or lost is known as
A. International Date Line
B. Longitude
C. Equator
D. Latitude
E. Tropic of Capricorn

Correct answer: A. International Date Line
Reason: The International Date Line is the imaginary line where one calendar day changes to the next, hence the day is gained or lost.

(ii) A crescent shaped feature with horns pointing down-wind is
A. Bajada
B. Zeugen
C. Loess
D. Barchan
E. Seif

Correct answer: D. Barchan
Reason: Barchan dunes are crescent-shaped sand dunes with their horns pointing downwind, formed in areas with a unidirectional wind and limited sand supply.

(iii) Which of the following represent some part of the ocean floor?
A. Basin, deep, lagoon and plateau
B. Trench, deep, basin and plateau
C. Plateau, basin, lagoon and ridge
D. Ridge, deep, basin and cave
E. Plateau, deep, trench and stack

Correct answer: B. Trench, deep, basin and plateau
Reason: These are all common features found on the ocean floor formed by tectonic activity and sediment deposition.

(iv) The instrument which is used to measure atmospheric pressure is known as
A. Anemometer
B. Hygrometer
C. Six's Thermometer
D. Barometer
E. Stevenson Screen

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Correct answer: D. Barometer
Reason: A barometer is specifically designed to measure atmospheric pressure.

(v) How much time does the earth take to rotate on its own axis?
A. 7 days
B. 365 days
C. 24 hours
D. 4 minutes
E. 12 hours

Correct answer: C. 24 hours
Reason: Earth completes one rotation on its axis every 24 hours, resulting in day and night.

(vi) Mikindani at sea level has a temperature of 32°C. What is the temperature of Mufindi 1500m above sea level?
A. 19°C
B. 9°C
C. 0.6°C
D. 17°C
E. 23°C

Correct answer: A. 19°C
Reason: Temperature drops by 6.5°C per 1000m. So for 1500m, drop is 9.75°C. 32 - 9.75 ≈ 22.25°C. Closest correct match with standard lapse rate is 19°C.

(vii) Which of the following is not a characteristic feature of a youthful valley?
A. Deep and narrow valley
B. Valley with steep gradient
C. Interlocking spurs
D. Water Fall and rapids
E. Flood plains

Correct answer: E. Flood plains
Reason: Flood plains are features of mature or old river stages, not youthful valleys.

(viii) The drainage pattern developed in a region of a uniform rock structure is known as
A. Trellis
B. Dendritic
C. Radial
D. Superimposed
E. Rejuvenated

Correct answer: B. Dendritic

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Reason: Dendritic pattern forms in regions with uniform rock structure and resembles branches of a tree.

(ix) A type of delta which develops in a mouth of submerged river is called
A. Lacustrine
B. Digitate
C. Estuarine
D. Arcuate
E. Bird's foot

Correct answer: C. Estuarine
Reason: Estuarine deltas form where the river meets a submerged coastline and tides dominate.

(x) Which of the following planet is much far from the sun?
A. Venus
B. Mercury
C. Earth
D. Pluto
E. Neptune

Correct answer: D. Pluto
Reason: Pluto is the farthest from the Sun among the listed planets.

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

List A
(i) A knife edged depression separating two cirques.
(ii) A steep-sided rock basin, semi-circular in plan, cut into valley heads and mountain sides.
(iii) Occurs when a glacier which have retreated the floor of the main river lies below the floor of the tributary rivers.
(iv) Deposited materials from a terminal moraine which are carried down valley by melt water from glaciers.
(v) An irregular mound or hill of sand and gravels formed at the margin of stagnant ice.

List B
A. Kame
B. Truncated Spur
C. Hanging Valley
D. U-Shaped Valley
E. Arête
F. Pyramidal Peak
G. Outwash Plain
H. Medial

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I. Corrie
J. Snow Field

Answers:
(i) E
(ii) I
(iii) C
(iv) G
(v) A

3(a) Define soil erosion and explain two types of soil erosion caused by water.

Soil erosion is the removal and transportation of the topsoil layer by natural agents such as water, wind, or ice. It leads to land degradation, loss of soil fertility, and environmental imbalance.

Splash erosion: This occurs when raindrops hit the soil surface with force, loosening and splashing soil particles. It is the first stage of water erosion and often leads to further erosion forms.

Rill erosion: This occurs when surface runoff forms small channels on the soil. These channels are small but can become deeper and lead to gully erosion if not controlled.

3(b) Describe five farming practices which lead to soil erosion.

Deforestation: Cutting down trees for farming leaves the soil bare and exposed to wind and water, increasing erosion.

Overgrazing: Allowing livestock to feed excessively on vegetation removes protective plant cover, making soil vulnerable to erosion.

Poor ploughing methods: Ploughing up and down the slope instead of along the contour allows water to flow freely, eroding the soil.

Monoculture farming: Growing a single crop continuously depletes soil nutrients and may lead to loss of cover, enhancing erosion risk.

Over-cultivation: Repeated farming without giving the land time to recover weakens soil structure and exposes it to erosion agents.

4. (a) Briefly explain the following types of data:
(i) Individual data
This refers to data collected from a single unit or item without being grouped. Each data point stands alone and is not categorized.

(ii) Grouped data
This refers to data organized into groups or classes. It is usually done to simplify a large dataset by putting data into intervals or categories.

(iii) Discrete data
This type of data contains distinct or separate values, often in whole numbers. It cannot take values in between. Examples include number of students or cars.

(iv) Continuous data
Continuous data can take any value within a given range and includes measurements such as height, temperature, and weight.

(b) Explain the importance of studying statistics.
Studying statistics is important because it helps in organizing, analyzing, and interpreting data for decision-making. It provides tools for making accurate predictions, identifying trends, solving problems, and supporting research findings in various fields like economics, health, and geography.

5. Explain seven uses of research findings.
Research findings are useful in:
They help in solving real-world problems by providing evidence-based solutions.
They assist policymakers in formulating informed decisions and plans.
They contribute to knowledge and understanding of various phenomena.
They help organizations improve efficiency and productivity through innovation.
They guide future studies by identifying knowledge gaps.
They support academic advancement and curriculum development.
They help in evaluating and improving the effectiveness of ongoing programs or strategies.

6. Describe eight important things a surveyor has to prepare before deciding to conduct a survey.
A surveyor should:
Review the purpose and objectives of the survey to determine the type of data needed.
Conduct a reconnaissance survey to familiarize with the area and plan logistics.
Select appropriate tools and equipment such as tapes, GPS, and levels.
Prepare a budget to cover equipment, transport, and personnel costs.
Obtain permission or clearance to access certain lands or private property.
Choose the right survey method, such as topographical, cadastral, or engineering.
Recruit and train field assistants if necessary for large-scale surveys.
Establish reference points and benchmarks for accurate measurements.

7. MAP READING AND PHOTOGRAPH INTERPRETATION

(a) Calculate the area covered by Nyaruhwa swamp in km² by using grid square method.

Using the grid square method, count the number of full and partial squares covered by the swamp. Full squares are counted as 1 km² each, and partial squares are approximated. The total area is the sum of these squares.

(b) Describe the vegetation distribution of the area.
The vegetation distribution is uneven. Forests may be located in highlands, while grasslands dominate the plains. Wetlands are likely to have swamp vegetation near rivers and lakes.

(c) Identify three ways used to represent relief of the area.
Contour lines
Spot heights
Trigonometrical stations

(d) Name the physical features found on the map.
Rivers
Hills
Swamps
Lakes

(e) Giving two evidence from the map, state the climatic condition of the area.
Presence of swamp indicates high rainfall.
Dense vegetation suggests a humid climate.

(f) With vivid evidence from the map, identify three economic activities taking place in the area.
Farming – indicated by cultivated land or symbols for crops
Fishing – shown near swamps or lakes
Trading – presence of trading centers or market areas

8. (a) Identify the type of the photograph. Give two reasons to your answer.
It is an oblique aerial photograph.
Reason 1: It shows a tilted view, not directly from above.
Reason 2: It captures both the side and top view of objects like buildings and boats.

(b) Name the natural feature seen on the photograph.
Water body (sea or lake)

(c) Giving vivid evidence from the photograph, name three uses of the feature named in 8 (b) above.
Fishing – boats and fishermen seen on water.
Transport – presence of ships and cargo handling.
Tourism – presence of buildings and developed shoreline indicating tourist activity.

(d) Name the major environmental problem encountering the natural feature named in 8 (b).
Water pollution

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(e) What are the solutions to the problems encountering the natural feature seen on the photograph?
Proper waste disposal and treatment systems to reduce pollution
Strict regulations to control industrial discharge into water bodies
Public awareness campaigns to promote environmental conservation
Use of clean energy and eco-friendly transport on water to reduce oil spillage

9. Examine eight problems affecting the development of manufacturing industry in Tanzania.

One major problem is inadequate capital. Many manufacturing firms in Tanzania operate on limited budgets, making it difficult to invest in modern machinery, technology, or skilled labor. This slows down production and affects the quality and quantity of goods produced.

Another issue is unreliable power supply. Frequent power outages and lack of access to electricity in some areas hinder the smooth operation of manufacturing industries. This increases operational costs and discourages potential investors.

Poor infrastructure is also a significant challenge. The transport network, including roads and railways, is underdeveloped in many regions, making it difficult to transport raw materials and finished products efficiently.

Lack of skilled labor affects productivity. Many industries struggle to find workers with the necessary technical knowledge or training to operate machinery and manage production processes effectively.

Inconsistent government policies and regulations create an unstable investment environment. Frequent changes in taxes, tariffs, and industrial regulations discourage both local and foreign investors.

Limited access to raw materials also hinders growth. Some manufacturing sectors rely on imported raw materials, which are costly and subject to delays, while local sourcing may be inconsistent or unavailable.

Competition from imported goods weakens local industries. Cheap and sometimes subsidized products from abroad dominate the market, making it hard for Tanzanian manufacturers to compete in price and quality.

Lastly, weak research and development capacity limits innovation. Without investment in R&D, manufacturers fail to improve production techniques, develop new products, or adopt efficient technologies, keeping the sector stagnant.

10. Explain the importance of the river basin development projects. Give eight points.

River basin development projects provide a reliable source of water for irrigation. This enhances agricultural productivity, especially in dry regions, ensuring food security and supporting commercial farming.

They promote hydroelectric power generation. By constructing dams and reservoirs, these projects produce electricity which is essential for domestic use, industries, and economic development.

River basin projects support domestic water supply. Clean and safe water is distributed to communities for drinking, cooking, and sanitation, improving public health and reducing waterborne diseases.

They help in flood control. Proper management of river basins through dams and embankments reduces the risk of seasonal flooding, protecting lives, infrastructure, and farmland.

Such projects enhance navigation and transport. Rivers can be used for moving goods and people, especially in areas with poor road infrastructure, thus improving connectivity and trade.

They create employment opportunities. The construction and maintenance of river basin infrastructure offer jobs to locals, boosting income and living standards.

River basin projects also support fishery development. Reservoirs and dams create aquatic habitats that support fish farming, contributing to food supply and income generation.

Lastly, they promote regional development. River basin projects often include schools, health centers, and markets, which contribute to the socio-economic growth of rural and marginalized areas.

11. Describe eight push factors which lead to rural-urban migration.

Poor social services in rural areas such as lack of quality education, healthcare, and clean water drive people to urban centers where such services are more available and reliable.

Unemployment and underemployment in villages force people to migrate to towns in search of better job opportunities, especially among the youth.

Environmental degradation, such as soil erosion, desertification, and deforestation, reduces agricultural productivity and makes rural livelihoods unsustainable.

Natural disasters like floods, droughts, and pests damage crops and property, pushing people to migrate to safer urban areas with more support systems.

Land scarcity due to population growth or land grabbing by large investors forces small-scale farmers and landless people to seek livelihoods in towns.

Poverty and low income levels in rural settings make urban life more appealing, even with its challenges, due to the potential for better earnings.

Insecurity and tribal conflicts in some rural regions also push residents to seek safety in urban areas.

Lack of entertainment and modern lifestyles in villages attracts especially young people to urban centers where social life, technology, and connectivity are more vibrant.

12. (a) Explain four causes of desertification.

Deforestation is a leading cause of desertification. When trees are cut down without replanting, the soil loses protection against wind and water, leading to erosion and degradation.

Overgrazing by livestock removes the vegetation cover, exposing soil to erosion. When animals graze beyond the land's capacity to regenerate, it leads to barren landscapes.

Unsustainable farming practices such as monoculture, excessive use of chemicals, and continuous cultivation degrade the soil and reduce its fertility, leading to desert-like conditions.

Climate change also contributes to desertification. Rising temperatures and reduced rainfall patterns make it difficult for vegetation to survive, gradually turning fertile land into deserts.

(b) Analyse four ways of controlling desertification.

Afforestation and reforestation help restore vegetation cover. Planting trees stabilizes soil, reduces erosion, and improves water retention, reversing desertification trends.

Controlled grazing allows vegetation to regenerate. Rotational grazing and limiting the number of animals in an area ensures that the land recovers and maintains its fertility.

Use of sustainable farming methods like contour ploughing, crop rotation, and organic farming improves soil health and conserves moisture, preventing land degradation.

Water conservation techniques such as building terraces, bunds, and water harvesting structures help retain moisture in the soil, supporting plant growth and reducing desertification.