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: 2009**

Instructions

1. This paper consists of ELEVEN questions.

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

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 solar system is made up of
A. sun, planets and interplanetary gases
B. atmosphere and hydrosphere
C. planets, clouds and gases
D. clouds, wind and gases
E. sunlight, gases, wind and clouds

Correct answer: A. sun, planets and interplanetary gases
Reason: The solar system consists of the sun, planets, moons, asteroids, comets, and the interplanetary medium including gases and dust.

(ii) If the time recorded at time X, 45°E was 9.00 a.m., what could be the longitude of Y at 3.00 a.m.?
A. 90°W
B. 45°W
C. 15°E
D. 90°E
E. 75°W

Correct answer: A. 90°W
Reason: The time difference is 6 hours. Each hour corresponds to 15°, so 6 × 15 = 90°. Since Y is behind X by 6 hours, it must be to the west, hence 90°W.

(iii) Lunar eclipse occurs because
A. the moon comes between the earth and the sun
B. the earth comes between the moon and the sun
C. the earth rotates from west to east
D. the sun comes between the moon and the earth
E. the moon, the earth and the sun are in rotation

Correct answer: B. the earth comes between the moon and the sun
Reason: A lunar eclipse occurs when the earth blocks the sunlight from reaching the moon.

(iv) About 98% of the matter making the sun is
A. light and heat
B. heavier elements
C. tars and other heavenly bodies
D. lighter elements of hydrogen and helium
E. gases, heat and sun ray

Correct answer: D. lighter elements of hydrogen and helium

Reason: The sun is primarily composed of hydrogen (about 74%) and helium (about 24%) which together make up about 98% of its mass.

(v) Absence of drainage on the surface in the limestone region is the direct result of
A. very low rains in the area
B. presence of swallow holes
C. the big rivers which swallow small rivers
D. presence of deep gorges
E. presence of sound and big pores

Correct answer: B. presence of swallow holes
Reason: In limestone regions, water drains underground through swallow holes and joints, leading to lack of surface streams.

(vi) The following are marine depositional features:
A. Beach, lagoons and sand spits
B. Beach, fringing reef and stump
C. Beach, stump and atoll
D. Tombolo, delta and headland
E. Headland, geo and stacks

Correct answer: A. Beach, lagoons and sand spits
Reason: These are classic features formed by deposition of materials by marine action such as waves and currents.

(vii) Why do two different countries located in different latitudes or hemispheres experience similar type of natural vegetation? It is because of
A. their positions which are very far
B. similar traditions of the people living in those areas
C. the same type of climate
D. same onshore prevailing winds
E. fertile soils, good cloud cover and rains

Correct answer: C. the same type of climate
Reason: Similar climates lead to similar vegetation types regardless of the country's position or hemisphere.

(viii) …… shows the soil's grain size.
A. Soil texture
B. Soil structure
C. Soil morphology
D. Particle density
E. Soil profile

Correct answer: A. Soil texture
Reason: Soil texture refers to the proportion of different-sized particles (sand, silt, and clay) in the soil.

(ix) Temperate cyclones are characterised as follows:
A. They are instruments with cycles for measuring temperature
B. Have long hours of high temperature
C. They are temperate winds which have a high speed
D. They are low pressure centres which develop in temperate latitudes
E. They are strong temperate rains in the United States of America, Africa and the Congo basin

Correct answer: D. They are low pressure centres which develop in temperate latitudes
Reason: Temperate cyclones are large areas of low pressure that form in middle latitudes and bring various weather patterns.

(x) A vertical cross-section of the soil showing its horizons is called
A. soil erosion
B. soil porosity
C. soil profile
D. soil PH
E. soil catena

Correct answer: C. soil profile
Reason: A soil profile is a vertical section through the soil that shows all of its layers or horizons.

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) Intervisibility
(ii) A Basin
(iii) Glaciers
(iv) Denudation
(v) Stevenson's screen

List B
A. It determines the distance of a cross-section
B. Weather station
C. A catchment area of the river
D. Ox-bow lake
E. One of the sources of a river
F. A screen showing precipitation
G. Batholiths

H. Weathering and erosion
I. Movement of the earth
J. The ability to see between two given points

Answers
(i) – J
(ii) – C
(iii) – E
(iv) – H
(v) – B

3. With the aid of diagrams, explain the types of moraines.
Terminal moraine: This is the ridge of till deposited at the furthest point reached by a glacier. It marks the glacier's maximum advance and forms across the valley floor.
Lateral moraine: These are ridges of debris deposited along the sides of a glacier. They originate from rockfalls or material scraped from the valley walls.
Medial moraine: Formed when two glaciers meet, and their lateral moraines combine in the middle of the new glacier, creating a line of debris along the glacier's center.
Ground moraine: This is a thin, uneven layer of till deposited beneath the glacier as it retreats. It forms a rolling or gently undulating plain.
Recessional moraine: These are series of ridges formed during pauses in the retreat of a glacier, and they lie parallel to the terminal moraine.

4. Read carefully the climatic data for station A presented in the Table and answer the questions that follow:

(i) Describe the climatic conditions of station A.
Station A has a tropical climate with a distinct wet and dry season. The temperatures remain constant at around 26.6°C from January to June and slightly rise to 28.3°C in October, showing minimal variation. Rainfall is high from January to April, peaking in March at 244 mm, indicating a wet season. The driest months are July, August, and September, with as low as 36 mm of rainfall.

(ii) Name any two countries in the Great Lakes of East Africa which experience this type of climatic conditions.
Tanzania and Uganda.

(iii) Present the data graphically.
[To be plotted as a combined line and bar graph with months on the x-axis, rainfall in mm on the left y-axis, and temperature in °C on the right y-axis. Rainfall should be represented by bars and temperature by a line.]

5. (a) What is research design?

Research design is a detailed plan or blueprint for conducting a research project. It outlines the procedures for collecting, analyzing, and interpreting data to answer research questions or test hypotheses effectively and efficiently.

(b) Briefly explain any four (4) types of research design.
Descriptive research design involves observing and describing the behavior of a subject without influencing it.
Experimental research design manipulates variables to determine cause-effect relationships.
Exploratory research design is used when the problem is not clearly defined; it explores the issue to gain insights.
Case study research design involves in-depth study of a single case or small group, often using multiple data sources.

6. (a) Mary is a good cartographer, she intends to produce a contoured map of Dar es Salaam. What type of survey method would you advise her to apply?
I would advise her to apply levelling survey. This method is suitable for determining the relative heights of points on the ground and producing contour maps.

(b) Apart from producing contour maps, what is the other significance of the type of survey you have mentioned in (a) above?
Levelling is essential in engineering and construction projects to determine gradients, design drainage systems, and ensure proper elevation for structures such as roads and canals.

7. Carefully study the map extract of Galula provided then answer the following questions:

(a) Calculate the area of the forest in Km^2 north of northings 450.
Using grid square method: Count the number of full and partial grid squares with forest north of northing 450. Multiply the number of grid squares by the area of one square (each grid square represents 1 km^2 since the map scale is 1:50,000 and each square is 2 cm × 2 cm).

(b) Calculate the length of River Ipwizi in Kilometres from grid reference 150508 to grid reference 125435.
Use a piece of thread or string to trace the river's meandering path, then straighten it and measure its length using the map scale (1:50,000). Convert the measured cm to km.

(c) Find the bearing of Tete Village (grid reference 127506) from Ifwekenye village (grid reference 160460).
Use a protractor placed on the north line through Ifwekenye village, then measure the angle clockwise from the north to the line joining the two points.

(d) Describe the main physical features found in the area.
The area contains several hills, rivers, and forested regions. There are also scattered woodlands, permanent rivers, and areas with high relief as shown by closely spaced contour lines.

(e) With evidence, show the main economic activities.
Agriculture is evident from the presence of scattered settlements and cultivated land. Forestry is practiced as large forest areas are shown. Riverine activities such as fishing may be occurring due to the presence of permanent rivers. Settlement distribution suggests small-scale trade and livestock keeping.

8. Study the photograph provided and then answer the questions that follow:

(i) What type of a photograph is this? Give reasons for your answer.
This is a ground photograph. It is taken horizontally from the side, capturing people and trees at eye level, which is typical of ground photographs. The angle is not elevated or aerial, and the objects appear in perspective from the side.

(ii) With evidence, suggest the type of climate of the place where this photograph was taken.
The area likely has a tropical or sub-tropical climate. This is suggested by the presence of tall trees with broad leaves and dense undergrowth, indicating adequate rainfall and warm temperatures conducive to dense forest growth.

(iii) What kind of activity is taking place in the area?
The activity taking place in the photograph is logging or tree cutting. People are holding axes or similar tools and appear to be clearing or felling trees in a forested area.

(iv) What will happen if the activity in (iii) above takes place in your local environment?
If deforestation occurs in the local environment, it may lead to environmental degradation such as soil erosion, reduced rainfall, and loss of biodiversity. It can also cause climate changes, destruction of habitats, and negatively impact the livelihoods of people who depend on forest resources.

9. (a) What were the aims of constructing the Aswan High Dam?
The main aim was to control flooding of the River Nile, which previously caused destruction to farms and settlements downstream.
Another aim was to ensure a consistent water supply throughout the year for irrigation and agriculture.
It was also built to generate hydroelectric power to support Egypt's growing industrial and domestic energy needs.
The dam aimed to improve navigation along the Nile and support development of fishing industries in Lake Nasser.
Additionally, it was intended to store water for use during droughts and help in the modernization of Egypt's agriculture.

(b) If the dam were constructed at Kondoa, how would the people of central Tanzania benefit from it?
It would provide water for irrigation, supporting agriculture and ensuring food security in the semi-arid regions of Kondoa.
It would generate hydroelectric power, promoting industrial growth and improving living standards.

The dam could help in controlling soil erosion and land degradation common in Kondoa due to overgrazing and deforestation.
It would create employment opportunities in construction, maintenance, and associated industries.
It could also promote tourism and fishing activities if a reservoir is created.

10. “Agriculture achievements in China have been brought about by good Government policy only.” Discuss.

China's agricultural success is partly due to effective government policies such as land reforms, where land use rights were given to farmers, increasing their productivity.
Government investments in agricultural research and infrastructure (such as irrigation systems and roads) have improved yields and market access.
Subsidies and financial support have helped farmers access inputs like fertilizers, seeds, and machinery.
However, other factors also contributed, such as technological advancement, farmer training, and adoption of mechanized and scientific farming practices.
International trade and modernization policies have opened Chinese agricultural products to global markets.
Hence, while government policies were a major driver, other contributing factors like innovation and global cooperation played a significant role.

11. With vivid examples, explain the causes of population change in the Great Lakes of East Africa.

High fertility rates in countries like Uganda, Tanzania, and Rwanda contribute significantly to population increase. Families tend to have many children due to cultural beliefs and lack of family planning.
Migration is another factor. Political conflicts in countries like Burundi and DR Congo have led to people moving into relatively stable countries like Tanzania, increasing population.
Improved healthcare in the region has reduced death rates, leading to higher natural increase in population.
Urbanization, especially around cities like Kampala, Bujumbura, and Mwanza, attracts rural populations due to employment opportunities and services, leading to population redistribution.
Government resettlement schemes and agricultural expansion programs have also influenced population distribution and growth in places like Kigoma and Kagera.

12. Some lakes and rivers in Tanzania are likely to lose their aquatic resources. Suggest any five (5) ways on how to overcome this threat.

Controlling industrial and agricultural pollution by enforcing waste disposal laws will reduce chemical contamination of water bodies.
Promoting sustainable fishing practices, such as banning illegal nets and closed fishing seasons, helps protect fish populations.
Reforestation and conservation of catchment areas reduce soil erosion and sedimentation in rivers and lakes.

Public awareness campaigns can educate communities on the importance of protecting aquatic ecosystems.
Developing alternative livelihoods, such as fish farming and ecotourism, can reduce pressure on natural aquatic resources.