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: 2008**

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 choice of suitable site and location for a weather station includes
D. fairly level ground and open space

(ii) Testing of nuclear, dynamite and mining explosions are greatly associated to _____ forces.
C. artificial

(iii) Geography is a multi-disciplinary subject because it
D. involves studies of physical and human activities only

(iv) The earth's interior is inaccessible and very hot, the knowledge about it is through
C. the study of crust, mantle and core

(v) If Morogoro town has a temperature of 25°C, what will this temperature be in fahrenheit?
A. 77°F

(vi) Tilting of the electricity poles and fences on slopes are works of
D. mass wasting

(vii) .... soil is heavy, has minute air spaces, holds much water, is difficulty to cultivate, dries up and forms a hard surface.
B. Clay

(viii) The best major feature of the ocean floor for fishing activities is
A. continental shelf

(ix) Decline of food production and increase in droughts, floods and shortages of hydro-electric power supply are attributed to
C. impact of climatic changes

(x) Which of the following show the natural vegetation found in Tanzania?
D. Savannah, equatorial grassland and tundra

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.

(i) Wind which blows more frequently in a particular region.
E. Prevailing winds

(ii) The amount of water vapour in the atmosphere.
G. Humidity

(iii) There is a decrease of temperature by 0.6°C per 100 m.
C. When one ascends the mountain

(iv) Lines drawn having the same amount of clouds.
F. Isohel

(v) A collection of small droplets of water.
B. Dew

3. (a) Define soil profile using the knowledge you have studied on soil.
A soil profile is a vertical section of the soil that shows all of its horizons (layers), starting from the surface (topsoil) down to the parent material. These horizons differ in color, texture, structure, moisture, and chemical composition and represent the process of soil formation over time.

(b) With the aid of a labelled diagram, illustrate soil profile.
(Hiitahitaji mchoro, naweza kukuandalia picha inayoweza kupakuliwa ukiagiza.)

(c) Explain four factors that influence the development of soil profile.

Climate: Temperature and rainfall influence the rate of weathering of parent rock and decomposition of organic matter. High rainfall promotes leaching and profile development.

Parent Material: The nature of the underlying rock determines the mineral content and structure of the soil. Softer rocks weather faster, forming deeper profiles.

Organisms: Plant roots, earthworms, and microorganisms help to break down organic matter and mix soil layers, promoting the formation of horizons.

Topography: The slope of the land affects erosion and drainage. Steep slopes often have thin soils due to erosion, while flat areas allow deep profile development due to stable conditions.

4. Read carefully the hypothetical data presented below and then answer the questions that follow.

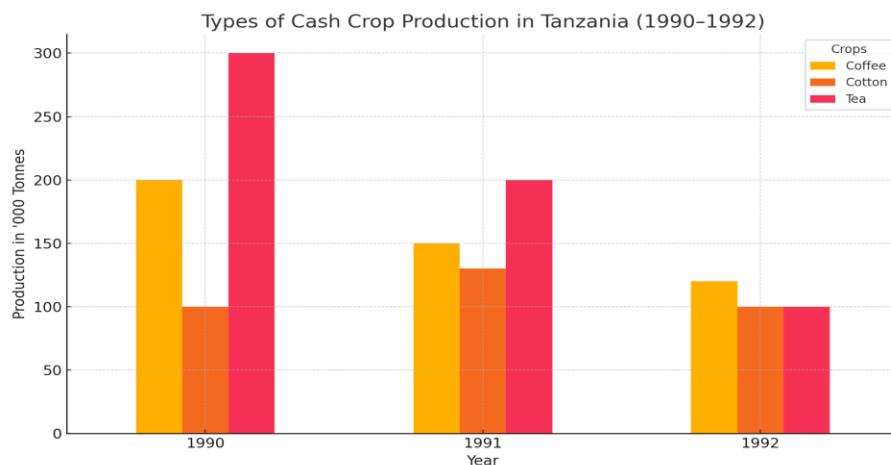| YEARS	Types of Cash Crop		
	Coffee	Cotton	Tea
1990	200	100	300
1991	150	130	200
1992	120	100	100

(a) Represent data above using a compound bar graph.

Types of Cash Crop Production in Tanzania (1990–1992)

(b) How is the compound bar graph of value to you? Give three points.

A compound bar graph helps to show comparison clearly among different variables over time. It allows easy visual interpretation of trends and variations among crops. It saves space since multiple sets of data are shown in one single bar.

(c) Comment on the trend of production as observed from the graph.

The trend shows a general decline in the production of all three crops from 1990 to 1992. Coffee decreased steadily from 200 to 120. Cotton showed a slight rise in 1991 but dropped back to the initial value in 1992. Tea production declined consistently over the years.

5. In 2007, form four students from Kibaigwa secondary school conducted a research about road accidents between Morogoro and Dodoma. Finally they submitted the report to the head of school.

(a) What were the main three objectives of the research?

To identify the major causes of road accidents between Morogoro and Dodoma.
To determine the impacts of road accidents on the local population.
To suggest measures that can reduce the frequency of accidents on that route.

(b) Propose three methods which might be used to collect data.

Interviews with drivers and traffic police.
Observation of traffic flow and accident-prone areas.
Questionnaires distributed to road users and residents along the route.

(c) Explain three problems that possibly faced them when collecting the data.

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Language barriers and lack of cooperation from respondents could affect data accuracy.
Bad weather and long distances might have limited movement during observation.
Limited financial resources could hinder access to certain remote areas or proper documentation tools.

6. (a) What is the meaning of survey to a geographer?

Survey refers to the scientific process of measuring and mapping the physical features and boundaries of an area of land. It is used by geographers to collect accurate spatial data for analysis and decision-making.

(b) Differentiate chain survey from levelling using the knowledge you have acquired from survey.

Chain survey involves measuring horizontal distances only, using chains or tapes, and is used mainly in small and flat areas.
Levelling is the process of measuring vertical distances to determine the relative height of points on the earth's surface, using instruments such as a level and staff.

(c) Explain four ways in which chain survey is significant in the day to day life of a human being.

It helps in planning and designing of roads, buildings, and infrastructure projects.
It assists farmers in demarcating farm boundaries and measuring plot sizes.
It is used in school projects and practicals to enhance students' field knowledge.
It aids local governments in resolving land disputes through clear boundary demarcation.

7. Study the map extract of Korogwe sheet 129/2 and answer the following questions:

(a) A taxi driver was moving from grid reference 340328 to a filling station at grid reference 421305. Find the distance covered in kilometres.

Distance = $\sqrt{[(421-340)^2 + (328-305)^2]}$ = $\sqrt{(81^2 + 23^2)}$ = $\sqrt{(6561 + 529)}$ = $\sqrt{7090}$ = 84.2 grid units
Since 1 grid unit = 0.5 km, then distance = 84.2 × 0.5 = 42.1 km

(b) Convert the linear scale given from the map into statement scale.

Linear scale is 1:50,000
Statement scale = 1 cm on map represents 0.5 km or 1 cm represents 500 m

(c) Show the relief features to guide the tourists visiting the mapped area.

The map contains contour lines showing hills and valleys, escarpments, ridges, and rivers. Areas of steep slopes are indicated by closely spaced contours. The northeast part shows mountainous terrain while the southeast contains lowlands and gentle slopes.

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(d) With evidence, suggest four economic activities of the people living in the area represented by the given map.

Agriculture – large scattered farms and plantations.
Trading – presence of market centers and road networks.
Transport – existence of roads and railway line.
Fishing – possible near water bodies and swamps.

(e) Give three reasons which have encouraged people to establish the settlement.

Availability of transport network such as roads and railway.
Presence of rivers and swamps for water supply and irrigation.
Fertile land and favorable topography for agriculture.

(f) Identify the main features found at grid references shown below.

(i) 420227 – Road junction
(ii) 350367 – Railway line crossing
(iii) 426304 – Scattered settlement
(iv) 384295 – Swamp

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

(i) What type of photograph is this? Give reasons.
It is a ground-level photograph. This is because it is taken from the side, showing the subjects at eye level. Objects in the foreground are large and clear, while those in the background become smaller, indicating a ground perspective.

(ii) Identify three physical features found on the photograph.
Hills – the background of the image shows elevated land forms.
Valleys – gentle depressions appear between the hills.
Vegetation – natural cover is visible throughout the area, suggesting woodland or forest.

(iii) With two reasons, suggest the type of climate of the area.
The area likely experiences a tropical or sub-tropical climate.
Reason 1: Presence of dense vegetation suggests high rainfall.
Reason 2: The hilly terrain combined with green cover indicates warm temperatures and adequate moisture.

(iv) Suggest four ways of interpreting photographs.
Tone – differences in brightness or darkness help identify features.

Texture – the appearance of surfaces (rough, smooth) distinguishes land use types.
Shape – recognizable outlines help in identifying objects like houses, roads, or fields.
Shadow – direction and size of shadows help determine the height and structure of features.

(v) Identify three uses of the photograph in geographical fieldwork.
It helps in identifying types of vegetation, land use, and physical features.
It assists in environmental analysis like effects of erosion or land degradation.
It serves as evidence for supporting data collected during fieldwork.

9. Give eight effects of environmental degradation.

Loss of biodiversity due to destruction of habitats and pollution of ecosystems.
Soil erosion which reduces land fertility and lowers agricultural productivity.
Deforestation leads to loss of forest cover and contributes to climate change.
Water pollution affects aquatic life and poses health risks to humans.
Desertification makes land unproductive, affecting food security.
Climate change becomes more severe due to greenhouse gas emissions.
Air pollution leads to respiratory diseases and affects air quality.
Displacement of communities due to floods, droughts, or land degradation.

10. With examples, examine eight benefits of conducting field research in geography.

It allows direct observation of features such as rivers, mountains, or urban land use.
Field research improves understanding of theoretical concepts through practical experience.
It helps collect primary data, such as rainfall amounts or soil types, which may not be available in secondary sources.
Fieldwork encourages student engagement and interest in the subject.
It enables verification of information obtained from maps, photographs, or textbooks.
Fieldwork develops critical thinking and analytical skills as students interpret real-world data.
It promotes teamwork and cooperation during group exercises and surveys.
It provides accurate and updated information on physical and human environments.

11. What is the importance of the long profile of a river?

The long profile helps in understanding the stages of river development: upper, middle, and lower courses.
It assists in identifying landforms associated with each stage such as waterfalls, meanders, and deltas.
The profile helps in planning for irrigation, navigation, and hydropower generation.
It reveals the gradient of a river which influences erosion, transportation, and deposition activities.
Engineers use the long profile in designing dams, bridges, and flood control structures.
It helps to predict sediment load and water velocity in different sections of the river.
Understanding the profile helps to assess risks such as floods and erosion.
It contributes to environmental management and conservation of river basins.

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12. With vivid examples, describe the four types of mountains.

Fold mountains – formed by compressional forces when tectonic plates collide and push layers of rock upwards. Example: The Atlas Mountains in North Africa.

Block mountains – formed by faulting where blocks of the earth's crust are pushed upward between parallel faults. Example: The Ruwenzori Mountains between Uganda and DR Congo.

Volcanic mountains – formed by volcanic activity when molten magma erupts and accumulates around a vent. Example: Mount Kilimanjaro in Tanzania.

Residual mountains – formed from remnants of ancient mountains after prolonged erosion. Example: Uluguru Mountains in Tanzania.