THE UNITED REPUBLIC OF TANZANIA

NATIONAL EXAMINATIONS COUNCIL

CERTIFICATE OF SECONDARY EDUCATION EXAMINATION

013   **GEOGRAPHY**

(For Both School and Private Candidates)

Time: 3 Hours   **Year: 2024**

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 the given alternatives and write its letter beside the item number in the answer booklet(s) provided.

(i) During the night, Mayoo saw a bright object lighting crossing the sky at high speed. Identify the object seen by Mayoo.   A Meteors
B Satellites
C Planets
D Asteroids
E Comets

Answer: A Meteors
Reason: Meteors are space rocks that enter the Earth's atmosphere and burn up, creating a bright streak of light in the sky.

(ii) Abel keeps records of linear measurements, heights and angles on the earth's surface during surveying. Who is Abel?
A Cartographer
B Booker
C Leader
D Chain man
E Follower

Answer: D Chain man
Reason: A chain man assists in taking linear measurements on the ground during land surveying.

(iii) A businessman wants to transport bulky goods from Dar es Salaam to Kigoma. Suggest the best mode of transport that he can use.
A Air
B Railway
C Water
D Pipeline
E Cable

Answer: B Railway
Reason: Railways are ideal for transporting bulky goods over long distances due to their capacity and cost-efficiency.

(iv) Gold deposits which are near to the surface have been discovered at Mtakuja village. What could be the suitable method in extracting them?
A Shaft mining
B Underground mining
C Open cast mining
D Alluvial mining

E Placer mining

Answer: C Open cast mining
Reason: Open cast mining is used when mineral deposits are located near the surface of the earth.

(v) Jaka is living in Dar es Salaam city where houses are clustered together. What could be the main environmental problem in the area?
A Loss of biodiversity
B Deforestation
C Soil erosion
D Desertification
E Pollution

Answer: E Pollution
Reason: Densely populated urban areas face high levels of pollution due to industrial activities, vehicles, and waste generation.

(vi) What is the local time in Burundi which is located at 29°E when it is 06:00 am in Brazzaville which is located at 14°E?
A 11:00 pm
B 01:00 am
C 07:00 am
D 10:00 am
E 11:00 am

Answer: C 07:00 am
Reason: The difference in longitude is 15°, which equals one hour. Burundi is 1 hour ahead of Brazzaville.

(vii) Miss Shengo uses energy generated from the sun for cooking. Identify the type of energy she is using.
A Nuclear energy
B Wind energy
C Geothermal energy
D Solar energy
E Biogas energy

Answer: D Solar energy
Reason: Solar energy comes directly from the sun and can be used for cooking, lighting, and heating.

(viii) Which is the main characteristic of the Earth's crust?
A It is the thickest layer of the Earth
B It is the outer layer of the Earth

C It is the middle layer of the Earth
D It is the molten layer of the Earth
E It is the hottest layer of the Earth

Answer: B It is the outer layer of the Earth

Reason: The Earth's crust forms the outermost solid shell of the planet.

(ix) Pita was asked by his teacher to identify components of soil in a farm. Which among the following components will be identified?
A Organic matter, inorganic matter, water and air
B Inorganic matter, minerals, trees and earthworms
C Water, air, living organisms and plants
D Parental rocks, climate, water and organisms
E Rocks, minerals, water and gases

Answer: A Organic matter, inorganic matter, water and air
Reason: These are the basic physical and chemical components of soil.

(x) Mr. Kanjubai established school bags industry near Kanjubai Primary and Secondary schools. Identify the main factor for locating that industry in the area.
A Capital
B Labour force
C Power supply
D Market
E Raw material

Answer: D Market
Reason: The schools provide a ready market for the school bags produced, which influences the location of the industry.

2. Match the climatic region in List A with their corresponding areas in the world in List B by writing a letter of the correct response beside the item number in the answer booklet provided.

List A
(i)   Equatorial climate
(ii) Monsoon climate
(iii) Savanna climate
(iv) Desert climate
(v)   Mediterranean climate
(vi) Polar climate

List B
A India and Thailand

B Amazon and Congo basin
C Namibia and Atacama
D Spain and Cape Province
E Ice land and Greenland
F West Africa and North Australia
G East Africa and Greenland
H Rockies and Himalayas

Answers:
(i) B
(ii) A
(iii) F
(iv) C
(v) D
(vi) E

3. Study carefully the map extract of Kinamalu (sheet 182/1) provided and then answer the following questions:
(a) Suppose a hunter was standing at Tindiga school compound at grid reference 907406 and he saw an antelope at grid reference 870380. Locate the position of an antelope by using bearing.

To locate the antelope's position using bearing, draw a line from the school (907406) to the antelope's position (870380) and use a protractor centered at the school to measure the clockwise angle from the north direction to the line. This gives the bearing.

(b) Identify the stage of development reached by the main river in the map.

The main river in the map shows a well-developed pattern with meanders and floodplains, indicating that it is in the mature stage of development.

(c) Briefly describe the distribution of vegetation in the mapped area. Give two points.

Vegetation is scattered, with dense patches mainly around water bodies and highlands.   Some areas show cleared vegetation indicating human settlement or farming activity.

(d) Classify three settlement patterns of the mapped area.

Linear settlement pattern along roads or rivers.
Nucleated settlement around schools and markets.
Scattered settlement in rural and less accessible areas.

4. The Ministry of Home Affairs distributed patrol cars to Police Force as follows: Arusha 20, Dar es Salaam 25, Dodoma 18, Kigoma 15 and Mtwara 12.

(a) Tabulate the given information.

Region	Number of Patrol Cars
Arusha	20
Dar es Salaam	25
Dodoma	18
Kigoma	15
Mtwara	12

(b) Use the information tabulated in (a) to draw a pie chart.

To draw a pie chart, convert the values into angles based on the total sum (90 patrol cars):
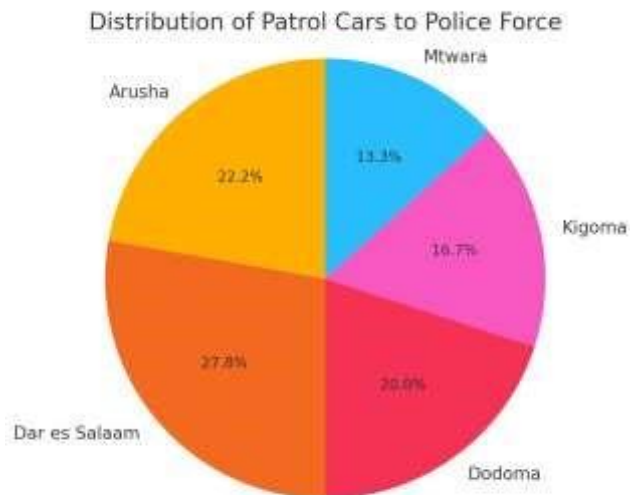Arusha: $(20/90) \times 360 = 80°$
Dar es Salaam: $(25/90) \times 360 = 100°$
Dodoma: $(18/90) \times 360 = 72°$
Kigoma: $(15/90) \times 360 = 60°$
Mtwara: $(12/90) \times 360 = 48°$

Distribution of Patrol Cars to Police Force

(c) Outline two advantages of using the pie chart in presenting the given information.

It provides a clear visual comparison of proportions among the regions.
It is easy to interpret at a glance, especially for people with low numeracy skills.

5. Imagine you are living in a village affected by land degradation caused by human activities.
(a) Mention five human activities which caused that particular problem.

Deforestation for firewood and timber.
Overgrazing by livestock leading to loss of vegetation.
Poor farming practices such as monoculture and slash-and-burn.
Excessive use of agrochemicals which pollute and destroy soil.   Uncontrolled
settlement and construction on fertile land.

(b) Describe four farming methods that can be used to improve agricultural products in the village.

Crop rotation to maintain soil fertility and prevent pest accumulation.
Agroforestry which combines trees with crops to protect soil and add organic matter.
Terracing on slopes to reduce soil erosion and retain water.
Use of organic manure to enrich the soil and improve its structure.

6. Study carefully the following photograph and answer the questions that follow:
(a) Giving two reasons, name the type of photograph.

Ground photograph.
Reason 1: The photo is taken from the ground level with the horizon visible.
Reason 2: Objects like trees and livestock appear as seen by a person standing on the ground.

(b) Mention four characteristics of the activity taking place in the photograph.

It involves keeping livestock in a fenced shelter.
It is carried out in a rural or semi-rural setting.
The activity uses traditional materials like wooden poles.
It requires space and simple structures for feeding and resting animals.

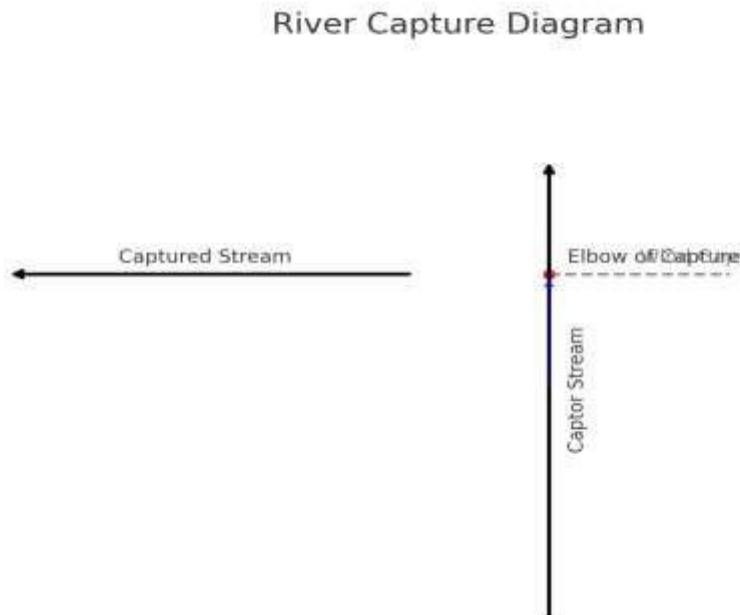(c) What are the four advantages of the activity taking place in the photograph?

Provides meat, milk, and manure to the community.
It can be a source of income through the sale of animals or products.   Improves
food security in rural areas.
Encourages use of local resources and traditional farming knowledge.

7. The students of Mlima Secondary School observed a powerful river diverting the course of the nearby
weak river into its main course.
(a) Mention a feature formed after a weak river was diverted.

A river capture or pirate stream is formed.

(b) Draw a well-labeled diagram of the feature mentioned in (a).

River Capture Diagram

(c) Briefly describe the parts labeled in the diagram drawn in (b).

Captor stream: The powerful river that captures the flow of the weaker river.
Captured stream: The original river whose headwaters have been diverted.
Wind gap: A dry valley left where the captured stream used to flow.
Elbow of capture: The sharp turn or bend at the point where the capture occurred.

8. (a) Briefly describe the term: (i)
Weather
Weather refers to the atmospheric conditions of a particular place at a specific time. It includes elements like temperature, rainfall, humidity, and wind, and it can change quickly within hours or days.

(ii) Weather forecast
A weather forecast is the scientific prediction of future atmospheric conditions for a specific area. It helps people prepare for events like rainfall, storms, or high temperatures using data from satellites, weather stations, and models.

(b) Describe seven elements of weather.

Temperature: Measures how hot or cold the atmosphere is, usually in degrees Celsius or Fahrenheit. It affects plant growth, human comfort, and daily activities.

Rainfall: The amount of precipitation received in a place, recorded in millimeters. It is vital for agriculture, water supply, and natural vegetation.

Humidity: Refers to the amount of water vapor in the air. High humidity can make temperatures feel hotter and affect health and comfort.

Wind: The horizontal movement of air across the Earth's surface. Wind speed and direction influence sailing, aviation, and weather changes.

Sunshine: Refers to the amount of solar radiation received at a place. It affects evaporation, temperature, and plant photosynthesis.

Air pressure: The weight of air pressing down on the Earth's surface, measured in millibars. It influences weather systems like cyclones and anticyclones.

Cloud cover: The portion of the sky covered by clouds. It affects visibility, temperature regulation, and the likelihood of rain.

9.   Bomana villagers changed stagnant water area to a productive land. Describe five aims of performing that activity.

To improve agricultural productivity by converting unused land into farmland for growing crops and keeping livestock.
To reduce the risk of diseases such as malaria and bilharzia that breed in stagnant water.
To enhance food security by increasing the amount of cultivated land available for food production.
To create employment opportunities for villagers through farming and land management.
To improve living standards by making the land economically useful and supporting livelihoods.

10.   Formation of features on the Earth's surface is a result of forces that originates and operates either within or on the Earth's surface. Describe five forces responsible for the formation of those features.

Tectonic forces involve movements of Earth's plates, leading to the formation of mountains, faults, and rift valleys.
Volcanic forces occur when molten magma from the mantle erupts to the surface, forming volcanoes and lava plateaus.
Erosional forces such as wind, water, and ice wear away rocks and landforms, creating valleys, canyons, and cliffs.
Depositional forces build new landforms by laying down materials carried by wind, water, or ice, forming deltas, sand dunes, and moraines.   Earthquakes result from sudden movements in Earth's crust, which can uplift or sink land, leading to the formation of new landscape features.

11.   Population distribution in Tanzania is uneven. In six points, analyse the physical factors influencing the situation.

Relief: Flat and lowland areas like coastal regions are more populated due to ease of settlement and farming, while mountainous areas have sparse populations.

Climate: Areas with moderate rainfall and favorable temperatures attract more people, while arid and semi-arid regions like central Tanzania are less populated.

Soil fertility: Regions with fertile volcanic or alluvial soils, such as Kilimanjaro and Mbeya, support agriculture and have higher population densities.

Water availability: Access to rivers, lakes, or reliable rainfall influences population. Areas with permanent water sources attract more people due to irrigation and domestic use.

Vegetation cover: Dense forests may discourage settlement due to difficulty in clearing land and presence of wild animals, whereas open areas are more populated.

Natural hazards: Areas prone to floods, earthquakes, or diseases like tsetse fly infestation tend to be less populated as they pose risks to human life and activities.