THE UNITED REPUBLIC OF TANZANIA

NATIONAL EXAMINATION COUNCIL OF TANZANIA

FORM TWO SECONDARY EDUCATION EXAMINATION, 2003

0013 GEOGRAPHY

Time: 2:30 Hours **ANSWERS** **.**

Instructions

1. This paper consists of sections A and B.
2. Answer **all** questions in section A and two questions from section B.
3. All writings must be in **blue** or **black** ink.
4. Communication devices and any unauthorized materials are **not** allowed in the assessment room.
5. Write your **Assessment Number** at the top right hand corner of every page.

SECTION A

1. (i) The time when the sun is overhead on latitude 23½ S or 23½ N is called:
A. Solstice
B. Aphelion
C. Equinox
D. Tropic of Cancer
A
Reason: The solstice occurs when the sun is directly overhead at 23½°N (Tropic of Cancer, June) or 23½°S (Tropic of Capricorn, December). Equinox is when the sun is over the equator, aphelion is the farthest point from the sun, and Tropic of Cancer is a latitude, not an event.

(ii) The second nearest planet from the sun is:
A. Mercury
B. Earth
C. Venus
D. Jupiter
C
Reason: The order from the sun is Mercury (1st), Venus (2nd), Earth (3rd), Mars (4th), Jupiter (5th). Venus is the second nearest.

(iii) Which of the following is the largest scale?
A. 1:100,000
B. 1:10,000
C. 1:50,000
D. 1:1,000,000
B
Reason: A larger scale has a smaller denominator, meaning more detail. 1:10,000 is the largest (1 cm = 10,000 cm), compared to 1:1,000,000 (smallest, 1 cm = 1,000,000 cm).

(iv) Wind blows from:
A. highlands to lowlands
B. lowlands to highlands
C. low pressure areas to high pressure areas
D. high pressure areas to low pressure areas
D
Reason: Wind flows from high pressure to low pressure due to pressure gradients. Altitude-based options (A, B) are not general rules for wind movement.

(v) ..... causes the difference between the length of day and night.
A. Rotation of earth
B. Distribution of longitudes
C. Inclination of the earth's axis
D. Revolution of the earth

C
Reason: The Earth's axial tilt (inclination of 23.5°) causes varying day/night lengths throughout the year as it revolves around the sun. Rotation causes day/night cycles, revolution causes seasons, and longitudes are unrelated.

(vi) Which of the following type of mountains result from the eruption of molten rocks from the earth's interior?
A. Block mountains
B. Volcanic mountains
C. Residual mountains
D. Fold mountains
B
Reason: Volcanic mountains form from the eruption of molten rocks (magma), e.g., Kilimanjaro. Block mountains form by faulting, fold mountains by compression, and residual mountains by erosion.

(vii) If it is 3.00 p.m. at Mwanza 33 E in Tanzania, what will be the time at Bangladesh 50 E?
A. 10.00 a.m.
B. 4.32 p.m.
C. 10.00 p.m.
D. 4.08 p.m.
D
Reason: Time difference: 15° = 1 hour. Difference = 50°E − 33°E = 17°. Time difference = 17/15 × 60 = 68 minutes. Bangladesh is ahead, so 3:00 p.m. + 68 minutes = 4:08 p.m.

(viii) Which of the following is not a renewable resource?
A. Water
B. Air
C. Mineral
D. Forest
C
Reason: Minerals (e.g., coal, oil) are finite and non-renewable. Water, air, and forests can be replenished naturally over time.

(ix) The relative humidity of a region is low when:
A. The wet and dry bulb thermometers read the same
B. The difference between the readings of wet and dry bulb thermometers is large
C. The temperatures are high
D. The temperatures are low
B
Reason: A large difference between wet and dry bulb thermometers indicates low humidity, as the wet bulb cools more due to evaporation in dry air. Same readings (A) indicate high humidity.

(x) The practice of seasonal movement to the mountains and to the valleys is called:
A. Agriculture

B. Pastoralism
C. Transhumance
D. Hunting
C
Reason: Transhumance is the seasonal movement of livestock between mountains and valleys, a form of pastoralism. Pastoralism (B) is broader, while agriculture and hunting are unrelated.

2. Match the items in column A with the corresponding items in column B by writing its letter alongside column A.

COLUMN A	**COLUMN B**
(i) Lines drawn on maps joining places with the same height above sea level	E. Contours
(ii) Rainfall caused by intensive solar radiation	A. Convectional rain
(iii) Plateau	D. Dominant feature of the continent of Africa
(iv) Air pollution	H. Addition of unwanted materials into the air
(v) Manufacturing	J. Conversion of raw materials into forms which are more useful to man

3. The following statements are either TRUE or FALSE. In the space provided write TRUE if the statement is true and FALSE if the statement is false.

(a) Transportation involves the movement of ideas or information while communication involves the movement of goods and people.

FALSE (Transportation moves goods and people; communication involves ideas or information.)

(b) There is no direct relationship between the availability of raw materials and industrialization.

FALSE (Industrialization often depends on raw materials, e.g., steel industries near iron ore deposits.)

(c) Seasons are more pronounced between 23½ and 66½ of latitude.

TRUE (Between the tropics and polar circles, seasonal variations are significant due to the Earth's tilt.)

(d) Environmental pollution results into global warming.

TRUE (Pollution, especially greenhouse gases like CO_2, contributes to global warming.)

(e) Lake Victoria is an example of a Rift Valley lake.

FALSE (Lake Victoria is not a Rift Valley lake; it's a depression lake. Lake Tanganyika is a Rift Valley lake.)

(f) The spread of HIV/AIDS somehow is accelerated by tourist activities.

TRUE (Tourism can increase HIV/AIDS spread through interactions, e.g., sex tourism.)

(g) Rising and falling in the level of water in the oceans is called a current.

FALSE (Rising/falling water levels are tides; currents are horizontal water movements.)

(h) Good railway and road networks stimulate trade and commerce.

TRUE (Efficient transport networks facilitate the movement of goods, boosting trade.)

(i) Bearing and distance is the only way of locating position on maps.

FALSE (Other methods include grid references, latitude/longitude, and landmarks.)

(j) Over exploitation of forest resources may lead to desertification.

TRUE (Deforestation can cause soil erosion and desertification by removing vegetation cover.)

SECTION B

4. (a) Study the diagram below and answer the questions that follow:
(i) Calculate the area of the shaded part.
Answer: Assume the shaded part (e.g., forest) is a rectangle on the map, 3 cm × 2 cm. Scale 1:50,000 means 1 cm = 0.5 km. Area on map = 3 × 2 = 6 cm². 1 cm² = 0.5 × 0.5 = 0.25 km². Area = 6 × 0.25 = 1.5 km².
Answer: 1.5 km²

(ii) Find the bearing of A from B.
Answer: A (120130), B (140150). Eastings difference = 120 − 140 = -20 (west). Northings difference = 130 − 150 = -20 (south). Direction is southwest. Bearing = 180 + 45 = 225°.
Answer: 225°

(iii) Give the direction of B and A.
Answer: B from A: Northeast (045°). A from B: Southwest (225°).
Answer: B from A: Northeast, A from B: Southwest

(iv) Write the grid reference of point A and B.
Answer: Based on assumption: A = 120130, B = 140150.
Answer: A: 120130, B: 140150

(b) Carefully study the climatic data given for station T and answer the questions that follow:

MONTH	J	F	M	A	M	J	J	A	S	O	N	D
Temp. C	25.5	25.8	26	26	27.3	26.5	26.5	26.1	26.8	26.8	26.3	25.7
Rainfall (mm)	246	186	185	198	184	176	174.1	197	183	206	261	266

(i) Calculate the mean annual temperature.
Answer: (25.5 + 25.8 + 26 + 26 + 27.3 + 26.5 + 26.5 + 26.1 + 26.8 + 26.8 + 26.3 + 25.7) / 12 = 315.6 / 12 = 26.3°C
Answer: 26.3°C

(ii) Determine the annual range of temperature.
Answer: Max = 27.3°C (May), Min = 25.5°C (January). Range = 27.3 − 25.5 = 1.8°C
Answer: 1.8°C

(iii) Find the annual rainfall for the station.
Answer: 246 + 186 + 185 + 198 + 184 + 176 + 174.1 + 197 + 183 + 206 + 261 + 266 = 2462.1 mm
Answer: 2462.1 mm

(iv) What type of climate does station T experience?
Equatorial climate
Reason: High, consistent temperatures (25.5–27.3°C) and high rainfall (2462.1 mm) with no distinct dry season are typical of equatorial climates.

(v) Mention four crops that can be grown in the area.

- Bananas
- Coffee
- Cocoa
- Rubber

5. Explain five characteristics of sedentary livestock keeping

Permanent settlement is a key characteristic. In sedentary livestock keeping, farmers settle in one place permanently and raise their animals from a fixed location rather than moving around.

Use of modern techniques is often practiced. Sedentary livestock keepers are more likely to use improved breeds, veterinary services, and controlled feeding methods to increase productivity.

Integration with crop farming is common. Animals are kept alongside crops, and there is a mutual benefit—for example, animal manure is used to fertilize crops, and crop residues feed the animals.

Access to markets and services is usually better. Since sedentary livestock keepers live in one place, they are more likely to be located near roads, markets, schools, and veterinary services.

Environmental management is more feasible. With a fixed area, it becomes easier to manage grazing land, control soil erosion, and practice rotational grazing to maintain land fertility.

6. Explain the features associated with rapid population growth

High birth rates are a major feature. Rapid population growth is often driven by a high number of births due to cultural values, lack of family planning, and early marriages.

Strain on social services occurs. Rapid population growth increases demand for health care, education, housing, and other public services, often leading to overcrowding and poor quality services.

Increased unemployment is common. With more people entering the labor market than jobs being created, unemployment and underemployment become widespread.

Pressure on natural resources such as land, water, and forests increases. This can lead to deforestation, land degradation, and water scarcity as more people compete for limited resources.

Urbanization and slums tend to grow. Many people migrate to cities in search of better opportunities, leading to rapid urban growth and the development of informal settlements or slums.

7. Give suggestions on how to solve the problem of desertification

Afforestation and reforestation can help. Planting trees and restoring vegetation cover can stabilize the soil, reduce erosion, and improve moisture retention in dry areas.

Controlled grazing should be promoted. Regulating how and where animals graze can prevent overgrazing, which is a major cause of land degradation and desertification.

Use of sustainable farming practices like terracing, crop rotation, and agroforestry can preserve soil fertility and reduce the risk of desertification.

Public education and awareness campaigns can inform communities about the causes and effects of desertification and encourage their participation in prevention and restoration efforts.

Government policies and support are necessary. Governments should implement laws that protect land and forests and provide support to communities practicing sustainable land management.

8. Mention the problems associated with exploitation of forest resources

Deforestation is a major problem. Excessive logging, especially when not regulated, leads to loss of forest cover and biodiversity.

Soil erosion increases when trees are removed. Roots that hold the soil together are lost, making land more vulnerable to erosion and decreasing agricultural productivity.

Loss of biodiversity occurs when habitats are destroyed. Many plant and animal species lose their homes and become endangered or extinct.

Climate change is worsened by forest exploitation. Trees absorb carbon dioxide, so cutting them down increases greenhouse gases in the atmosphere.

Conflict over land use can arise. As forest land is cleared for agriculture, settlements, or mining, competition over land increases, sometimes leading to disputes among communities.

9. Explain the main problems facing transport and communications in East Africa

Poor infrastructure is a common issue. Many roads and railways are in poor condition due to lack of maintenance, making travel slow and expensive.

Limited connectivity in rural areas affects both transport and communication. Remote areas often lack roads, bridges, mobile networks, and internet access.

High costs of development make it difficult to expand and improve transport and communication systems. Building roads, airports, and telecommunications networks requires significant investment.

Bureaucratic inefficiencies and corruption can slow down development projects. Delays in approvals, mismanagement of funds, and lack of accountability are common challenges.

Insecurity and conflicts in some regions disrupt transport and communication services. Banditry, political unrest, and civil conflicts damage infrastructure and discourage investment.