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: 2022**

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 in the answer booklet(s) provided.

(i) Which set of elements of weather are mainly used to classify climate of an area?
A Humidity and precipitation
B Temperature and rainfall
C Temperature and humidity
D Temperature and sunshine
E Wind and temperature

Answer: B Temperature and rainfall
Reason: These are the key elements used in climate classification systems like Koppen's.

(ii) The local time at Greenwich Meridian is 10:30 am on Thursday. What will be the time at longitude 180°E?
A 10:30 pm on Thursday
B 10:30 am on Wednesday
C 12:30 am on Wednesday
D 11:00 am on Friday
E 12:00 pm on Thursday

Answer: D 11:00 am on Friday
Reason: 180°E is 12 hours ahead of GMT, and crossing the International Date Line adds a day.

(iii) Which one is a major environmental problem facing most of African cities?
A Loss of biodiversity
B Soil erosion
C Air pollution
D Deforestation
E Overgrazing

Answer: C Air pollution
Reason: Urban centers in Africa experience high levels of air pollution from vehicles, industries, and waste burning.

(iv) Suppose you were walking along river Rufiji and you had a chance to observe the drainage pattern with uniform rock structure and rock resistance, suggest the name of that drainage pattern.
A Dendritic
B Trellis
C Radial
D Parallel
E Centripetal

Answer: A Dendritic
Reason: Dendritic patterns resemble tree branches and form on uniform rock surfaces.

(v) Suppose you are living in an urban center and you are interested in keeping livestock. What type of livestock keeping would be suitable for you?
A Sedentary
B Transhumance
C Ranching
D Pastoralism
E Nomadism

Answer: A Sedentary
Reason: Sedentary livestock keeping involves small-scale, permanent rearing near homesteads, suitable for urban areas.

(vi) Which earth crust processes caused the formation of Uluguru mountains?
A Prolonged denudation
B Wrinkling of the earth's crust
C Sinking of the earth's crust
D Outflow and spread of lava
E Faulting of the earth's crust

Answer: E Faulting of the earth's crust
Reason: Uluguru mountains are part of the Eastern Arc Mountains formed through block faulting.

(vii) At which position of the moon is lunar eclipse likely to occur?

Answer: D U
Reason: A lunar eclipse occurs when the Earth is between the Sun and the Moon, and U is directly in Earth's shadow.

(viii) Husna and his young brother Hamid like to play with wet soil around their home. They enjoy observing quick percolation of water in the soil. What type of soil were they playing with?
A Clay
B Silt
C Loam
D Sand
E Silt and clay

Answer: D Sand
Reason: Sand has large particles and spaces, allowing water to pass through quickly.

(ix) Earthquakes and volcanoes have a clearly identifiable pattern over the earth's surface. Which area is not prone to earthquakes and volcanoes?
A Coast of Alaska
B East African rift valley
C Andes mountain
D Himalayan belt
E Sahara desert

Answer: E Sahara desert
Reason: The Sahara lies away from tectonic plate boundaries and lacks significant seismic activity.

(x) Which location of mineral occurrence is best for shaft method of mining?
A Horizontal to the earth's surface
B Very close to the earth's surface
C In a river valley
D On the earth's surface
E Lay deep into the earth's surface

Answer: E Lay deep into the earth's surface
Reason: Shaft mining is used to access deep underground mineral deposits.

2. Match the type of climate in List A with their corresponding latitudes North and South of the Equator in List B.

List A
(i) Mediterranean climate
(ii) Tropical climate
(iii) Polar climate
(iv) Equatorial climate
(v) Hot desert climate

List B
A 45° and 90°
B 10° and 30°
C 30° and 50°
D 0° and 5°
E 20° and 05°
F 30° and 45°
G 05° and 20°
H 20° and 30°

Answers:
(i) C 30° and 50°

(ii) G 05° and 20°
(iii) A 45° and 90°
(iv) D 0° and 5°
(v) H 20° and 30°
3. Study carefully the map extract of Ilonga (Sheet 265/2) and then answer the following questions:
(a) Citing evidence from the map, suggest three possible economic activities carried out in the mapped area.

Farming: Presence of extensive cultivated land and seasonal swamps suggests agriculture is a major economic activity.
Fishing: The map shows rivers and ponds like Nyange Pond, which support fishing.
Trading: The presence of a trunk road and several settlements implies movement of goods and trade among communities.

(b) Describe the vegetation distribution of the area.

Vegetation is distributed unevenly, with dense forest in the western and central parts.
Swampy and grassland vegetation dominates near rivers and ponds, especially in the southeastern areas.

(c) Describe the drainage pattern found in the map.

The drainage pattern is dendritic, as seen from the river tributaries branching irregularly like tree limbs.

(d) Give the name of the water course found in the South Eastern part of the mapped area.

The main water course in the southeastern part is the Mnyera River.

(e) Give the name of the main man-made linear physical feature found in the map.

The main man-made linear feature is the all-weather trunk road.

(f) Calculate the area of the whole map in km².

The map scale is 1:50,000, and it covers an area of 10 km by 10 km (based on grid lines).
Area = 10 km × 10 km = 100 km²

4. (a) Giving four points, explain the importance of using divergent bar graph.

It helps compare two opposing sets of data such as boys vs. girls or before vs. after conditions.
The graph clearly shows differences and similarities by displaying opposite values on either side.
It simplifies complex data by making visual comparisons easier for non-technical users.
It is useful for showing attitudinal or perception-based data like agreement and disagreement.

(b) What are the two challenges to be noted when using divergent bar graph?

It may be difficult to interpret when the data ranges are very large or unequal.
Designing the graph requires precision to ensure the center axis is well balanced for fair comparison.

5. (a) Explain the functions of the following survey tools:
(i) Arrow – Marks the end of a measured line during chaining.
(ii) Pegs – Used to mark survey stations or beginning and end points of a traverse.
(iii) Ranging rod – Helps in aligning survey lines and making straight measurements.
(iv) Beacon – Serves as a permanent marker of a point for future reference in large surveys.

(b) Outline three survey measuring tools.

Measuring tape or chain – Used for determining horizontal distances.
Prism or optical square – Ensures right angles and perpendicular measurements.
Clinometer – Measures slope angles or gradients in the field.

6. (a) A group of students were sitting at a high steep face of a rock along the sea coast of the Indian Ocean. They observed the breaking movements of ocean waves in which ocean water is thrown up the beach and returned under gravity down the shore.
(i) What are the two wave processes the students observed?

Swash – the forward movement of water onto the shore.
Backwash – the return flow of water down the slope under gravity.

(ii) Mention four erosion processes involved in that ocean wave.

Hydraulic action – pressure of water breaks rock surfaces.
Abrasion – pebbles and sand hit against rocks causing wearing.
Attrition – rock particles collide and break into smaller pieces.
Solution – chemical action of seawater dissolves minerals in rocks.

(b) Identify three factors that affect wave erosion.

Nature and structure of the rock – softer rocks erode faster.
Strength and frequency of the waves – stronger waves cause more erosion.
Coastal slope – steep coasts increase the energy and impact of waves.

(c) Draw a well labeled diagram to show the following features resulting from wave erosion:
(i) Blow hole
(ii) Cave

[A diagram should include cliff, cave opening, vertical shaft for blow hole, and sea level.]

7. Study carefully the following photograph and then answer the questions that follow:
(a) With two evidences, name the type of photograph.

It is a ground photograph.
Evidence 1: Taken from eye level showing people and boats at ground level.
Evidence 2: Horizon is not visible; focus is on objects directly in front.

(b) With evidence, suggest the time when the photograph was taken.

It was taken during the day, likely late morning or afternoon.
Evidence: The shadows are short, and there is ample sunlight, suggesting the sun is overhead.

(c) Giving evidence, suggest two possible economic activities which take place in the area.

Fishing – presence of boats and fishermen indicates active fishing.
Trading – people standing around and carrying goods suggest exchange of fish or supplies.

(d) What are the two natural features which are seen in the photograph?

Beach – visible as a sandy shoreline.
Ocean/sea – large water body shown in the background.

8. Suppose you have been asked to conduct a research on poor performance of students in Mathematics subject at your school, explain ten stages you would follow.

Identification of the problem: This is the first step where you define clearly the research topic, which in this case is poor performance in Mathematics.

Formulating objectives: Here, you state what you aim to achieve, such as identifying causes or suggesting solutions to poor performance.

Reviewing related literature: At this stage, you gather information from books, journals, or previous studies related to the problem for background knowledge.

Formulating research questions or hypotheses: You construct guiding questions like “What factors contribute to students' failure in Mathematics?”

Choosing research design: You decide whether your study will be descriptive, experimental, or a case study based on the school setting.

Selecting population and sample: Identify the target group, e.g., Form Three students, and choose a representative sample.

Choosing data collection methods: Decide whether to use questionnaires, interviews, observations, or tests.

Collecting data: You administer your chosen tools and gather information from respondents such as students, teachers, or parents.

Analyzing data: Use graphs, tables, or statistical methods to interpret the collected data and identify trends.

Drawing conclusions and giving recommendations: Based on the findings, summarize the causes and provide solutions to improve Mathematics performance.

9. Mr. Tumble wants to establish a plastic processing industry in Visitu town. Analyse six factors he should consider before locating the industry.

Availability of raw materials: The location should be near sources of plastic or materials like petroleum byproducts used in plastic production to reduce transportation costs.

Access to market: The industry should be near towns or cities where plastic goods can be sold to ensure profitability.

Reliable transport and communication: Roads, railways, or ports are essential for moving raw materials and finished products efficiently.

Availability of power supply: Industries need a consistent supply of electricity to run machinery and maintain production.

Skilled and unskilled labour: The area should have people with technical skills or workers who can be trained for plastic production tasks.

Waste disposal and environmental regulations: The industry must comply with environmental laws and have facilities to manage waste without polluting the environment.

10. “Tanzania has realized that improving transport is inevitable for sustainable socio-economic development.” Justify this quotation by giving seven points.

Transport improves trade by enabling the movement of goods from producers to markets, boosting income for farmers and businesspeople.

It enhances access to social services such as hospitals and schools, especially in remote rural areas.

Improved transport attracts investment, as companies prefer locations where roads, railways, or ports are available.

It reduces the cost and time of transporting goods, making Tanzanian products more competitive in local and international markets.

Transport supports tourism by making tourist attractions more accessible, thereby generating foreign exchange.

It promotes regional integration by connecting Tanzania with neighboring countries through roads, rail and air networks.

Improved transport enhances agricultural development by linking farmers to input suppliers and markets, reducing post-harvest losses and increasing productivity.