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: 2010**

Instructions

1. This paper consists of ELEVEN questions.

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

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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) Crater lakes are most likely to be formed in
A. Areas of fold mountains
B. Intensively faulted areas
C. Downwarped areas
D. Regions where subsidence is taking place
E. Areas of active vulcanicity

Correct answer: E. Areas of active vulcanicity
Reason: Crater lakes are formed in volcanic craters after eruptions when rain or groundwater accumulates in the depression.

(ii) Which one of the following is not associated with earthquakes?
A. Body waves
B. Geyser
C. Richter scale
D. Seismograph
E. Focus

Correct answer: B. Geyser
Reason: A geyser is associated with geothermal activity, not directly with the seismic events of earthquakes.

(iii) If the time at town X 15°E is 12.00 noon, what could be the longitude of town Y if it is 8.00 a.m?
A. 15°W
B. 30°E
C. 45°W
D. 30°W
E. 45°E

Correct answer: C. 45°W
Reason: The time difference is 4 hours behind, and each 15° = 1 hour. 4 hours = 60°. Since it's behind, town Y is west. 15°E - 60° = 45°W.

(iv) Which one of the following, by origin and composition is not a form of igneous rocks?
A. Sill
B. Gypsum
C. Lava plain
D. Volcano
E. Granite

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Correct answer: B. Gypsum
Reason: Gypsum is a sedimentary rock, not igneous. Others listed are features or forms related to igneous activity.

(v) One of the following features is a product of weathering:
A. Earth pillar
B. Gully
C. Lilly
D. Hot springs
E. Soil creep

Correct answer: A. Earth pillar
Reason: Earth pillars are formed due to differential weathering and erosion processes, especially where resistant rocks cap columns.

(vi) The process of river erosion where fragments are worn out during collision against each other is termed as
A. Hydraulic action
B. Attrition
C. Abrasion
D. Corrosion
E. Hydrolysis

Correct answer: B. Attrition
Reason: Attrition occurs when river-borne materials collide and wear each other down, reducing in size and becoming smoother.

(vii) A scale of 4 cm representing 18 km on the ground will be represented by representative fraction (R.F) scale as
A. 1:900000
B. 1:1800000
C. 1:450000
D. 2:900000
E. 1:10,000

Correct answer: C. 1:450000
Reason: 18 km = 1,800,000 cm. 1,800,000 cm ÷ 4 cm = 450,000. So, the R.F = 1:450,000.

(viii) Which one of the following owes its origin to deflation?
A. Qattara depression
B. Lake Turkana
C. Tekekitam
D. Lake Chad

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E. Lake Victoria

Correct answer: A. Qattara depression
Reason: The Qattara depression in Egypt was formed by wind erosion (deflation), which removed loose particles over time.

(ix) The presence of paired terraces on both sides of a river valley indicates that
A. River capture has taken place
B. Lateral erosion is dominant
C. Sea level has risen
D. Rejuvenation has taken place
E. Truncated spurs have retreated

Correct answer: D. Rejuvenation has taken place
Reason: Rejuvenation causes renewed downward erosion which results in paired river terraces as old flood plains are incised.

(x) A good example of intrusive igneous rocks is
A. Gneiss
B. Basalt
C. Gabbro
D. Marble
E. Limestone

Correct answer: C. Gabbro
Reason: Gabbro is a coarse-grained intrusive igneous rock formed when magma cools slowly beneath the Earth's surface.

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) Saucer-shaped structure of permeable rock layer lying between two impermeable rocks
(ii) A process by which wind transport loose materials
(iii) Part of the land that lies between high water and low water
(iv) A volcano made of viscous lava
(v) One of the components of soil

List B
A. Deflation
B. Shore
C. Soil porosity
D. Saltation

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E. Coastline
F. Artesian basin
G. Composite cone
H. Inorganic matter
I. Aquifer
J. Cummulo dome

Answers:
(i) F
(ii) A
(iii) B
(iv) J
(v) H

3. (a) What is meant by marine erosion?
Marine erosion is the process by which sea waves and currents wear away rocks and sediments along coastlines. This continuous action of the ocean leads to the breakdown, transportation, and deposition of coastal materials.

(b) Describe four (4) processes which are involved in marine erosion.
Hydraulic action: This involves the force of water hitting against the coast. The pressure of breaking waves compresses air in cracks, weakening the rock and causing pieces to break off.

Abrasion: Also called corrasion, this occurs when waves carrying sand and pebbles hit against the coastline, grinding and wearing it away like sandpaper.

Attrition: In this process, the load carried by the sea (pebbles and rocks) collide and break into smaller, smoother pieces, reducing their size over time.

Solution (corrosion): Seawater, especially if acidic, dissolves soluble minerals in coastal rocks such as limestone, leading to gradual erosion.
4. Carefully study the data in the table below showing importation of motor vehicles from Europe in 2009, and answer the questions that follow:

Name of Motor Vehicle	Number of Motor Vehicle
JEEP	430
BENZ	192
BMW	108
RIMOUSSENE	70

(a) Draw a divided circle to represent the data.

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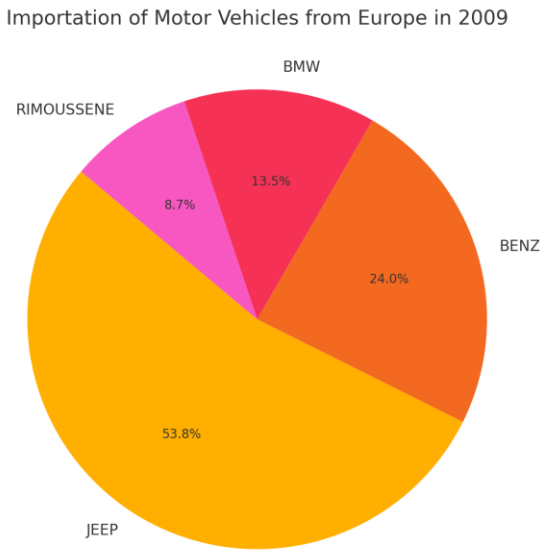

(b) Show the disadvantages of the method you have used in (a) above.

One disadvantage is that it becomes difficult to interpret values if the segments are not clearly labelled or shaded, especially when many categories have small differences in values. Another disadvantage is that pie charts are not suitable for detailed comparison or showing changes over time, as the visual difference between segments may be minimal and not easily distinguished.

5. Hypothesis formulation can be used in both qualitative and quantitative research. Examine the problems faced in hypothesis formulation.

One problem is lack of clear understanding of the research problem. If the topic is not well-defined, it becomes hard to formulate a precise hypothesis.

Insufficient background knowledge can hinder proper hypothesis development. A researcher without enough theoretical understanding may make vague or irrelevant predictions.

Difficulty in identifying measurable variables is another issue. Some topics involve abstract concepts that are hard to quantify or test empirically.

Bias in assumption formation may lead to a hypothesis that is not objective or that influences the direction of the study unfairly.

6. The chairman of Mivumoni village advised his village mates to use simple chain survey in order to get the right measurements of their farms. Show the merits and demerits of simple chain survey.

Merits:

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Simple chain survey is easy to use and does not require advanced training or expensive equipment, making it ideal for rural settings.
It provides reasonably accurate measurements for small, flat areas like farms and plots.
It is affordable because it uses basic tools such as chains, arrows, and ranging rods.
It is suitable for short-distance measurement and ideal for preliminary mapping.

Demerits:
It is time-consuming, especially when covering large areas.
It becomes inaccurate in hilly or uneven terrain due to slope measurement limitations.
Obstacles such as trees, bushes, or buildings can interfere with chaining and line of sight.
It cannot measure vertical heights, limiting its use in topographical or contour mapping.

7. Carefully study the map Extract of LINDI provided, and then answer the following questions:

(a) Explain the possible reasons for the uneven population distribution in the area.
The area has dense forests, especially in the western parts, which limit accessibility and discourage settlement.
Some parts of the map have steep and rugged terrain, making construction and agriculture difficult.
The coastal area and the all-weather road encourage higher population concentration due to trade, transport, and access to services.
Limited water sources in the interior areas reduce the attractiveness of those locations for settlement.

(b) How long in Kilometers is the Lindi–Nachingwea all-weather road (bound surface)?
To determine the length, measure the road using a ruler and convert using the scale 1:50,000 (1 cm = 0.5 km).
If the road measures 18 cm on the map:
Length = $18 \times 0.5 = 9$ km
(Use actual map measurement for precision.)

(c) Giving two evidence from the map, name the type of climate experienced in this area.
Presence of dense forest indicates a humid climate with high rainfall.
The existence of permanent rivers and swamps suggests a tropical climate with consistent precipitation.

(d) How big in Km² is the area covered by the forest south of grid line 160?
Count the number of grid squares covered by forest south of grid line 160.
If there are 10 full squares and 4 half-squares:
Area = $(10 \times 4) + (4 \times 2) = 40 + 8 = 48$ km²

8. Carefully study the photograph provided below and then answer the questions that follow:
(a) Name the crop shown in the photograph.
Sisal

(b) Mention the natural conditions which favour the growth of the crop.

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Sisal requires warm temperatures ranging from 25°C to 30°C and thrives in semi-arid climates.
It needs well-drained soils, preferably sandy or loamy, and low to moderate rainfall (about 1000 mm per year).
It performs well in areas with good sunlight exposure and low humidity.

(c) Tanzania is very famous in growing the crop mentioned in (a) above. Name the regions of Tanzania which grow the crop at commercial level.
Tanga
Morogoro
Coast Region
Mtwara
Lindi

(d) With concrete evidence, explain the scale of production as shown on the photograph.
The photograph shows an extensive area planted with sisal in neat rows, indicating large scale farming.
The uniform planting pattern and visible clearing of natural vegetation support evidence of organized commercial production.
Presence of a cleared field and structured plantation suggest mechanized or semi-mechanized agricultural practice.

9. In order to achieve economic development, transport and communication are inevitable. Describe the significance of transportation in developing countries.

Transportation facilitates the movement of goods and services from one place to another, which is essential for trade and economic growth. In developing countries, reliable transport allows agricultural products to reach urban markets, reducing post-harvest losses and ensuring food supply.

It promotes industrial development by enabling the delivery of raw materials to factories and finished goods to consumers and export points. Industries rely on roads, railways, and ports to operate efficiently and expand production.

Transportation supports employment through jobs in construction, driving, maintenance, and logistics. It also encourages investment as good infrastructure attracts local and foreign investors.

It improves access to social services such as health, education, and emergency aid, especially in rural areas. Roads and rail networks allow doctors, teachers, and supplies to reach communities in need.

It strengthens national integration and unity by connecting remote areas to the national economy and political system, reducing regional disparities.

10. Discuss the reasons for the low level of industrial development in Sub-Saharan Africa.

Lack of capital is a major barrier. Many Sub-Saharan countries face financial constraints and cannot invest in modern equipment or establish large-scale industries.

Inadequate infrastructure such as unreliable electricity, poor roads, and limited water supply hinders smooth industrial operations and increases production costs.

Low levels of technology limit productivity and efficiency. Most industries use outdated machinery, leading to low output and poor quality of goods.

Skilled labor is limited due to low investment in technical education and vocational training. This affects innovation and proper management of industries.

Dependence on imported raw materials and spare parts increases costs and delays production when imports are interrupted.

Political instability, corruption, and weak policies discourage investment in industrial sectors.

Small domestic markets and low purchasing power limit demand for manufactured goods, making large-scale production unprofitable.

Poor research and development reduce innovation and limit the ability to produce goods that meet local and international standards.

11. Examine the best ways which can ensure a sustainable use of forestry resources.

Afforestation and reforestation programs help replenish harvested trees and maintain forest cover. This ensures a continuous supply of forest products and environmental balance.

Enforcement of forest laws and regulations is essential to prevent illegal logging and protect conservation areas from encroachment.

Community involvement in forest management encourages responsible use, as locals benefit directly and are more likely to conserve the resource.

Promoting the use of alternative energy sources such as gas and solar reduces dependence on firewood and charcoal, thus reducing deforestation.

Agroforestry integrates tree planting with farming activities, providing shade, improving soil fertility, and offering additional sources of income.

Education and awareness programs teach people the importance of forests and sustainable harvesting methods.

Support for research on fast-growing and high-yielding tree species helps in efficient forest regeneration and sustainable commercial use.

12. How does rapid population explosion affect small scale agriculture?

Rapid population growth leads to land fragmentation as families divide available land among members. This reduces the size of farms, making it difficult to practice efficient agriculture.

It increases pressure on the land, causing over-cultivation and soil degradation. This lowers soil fertility and results in reduced crop yields.

The high demand for food forces farmers to clear more land, including forests and marginal areas, leading to environmental degradation.

Labour availability may become excessive, leading to underemployment in farming households where land is too small to keep everyone productive.

Traditional methods dominate small-scale farming, and population growth outpaces technological adoption, leading to low productivity.

Increased population in rural areas raises demand for non-agricultural uses of land, such as settlements and infrastructure, reducing land available for cultivation.