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 : 2003**

Instructions

1. This paper consists of sections A, B, C and D.
2. Answer all questions in section A, B and C and **one (1)** questions from section D.
3. Non-programmable calculators may be used.
4. Communication devices and any unauthorised materials are **not** allowed in the examination room.
5. Write your **Examination Number** on every page of your answer booklet(s).

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) Which of the following is the evidence which proves that the earth is spherical?
A The lunar eclipse
B The four seasons
C The revolution of the earth
D The eclipse of the sun
E Equator

The correct answer is A. During a lunar eclipse the earth casts a round shadow on the moon, proving that the earth is spherical.

(ii) A great circle refers to
A A line of longitude
B A circle on the globe
C The shortest distance between two points
D A circle on the globe whose plane passes through the centre of the globe
E Greenwich meridian only

The correct answer is D. A great circle is any circle that divides the globe into two equal halves by passing through its centre.

(iii) A reverse fault is caused by
A Tensional forces
B Downwarping of the earth's surface
C Folding
D Compressional forces
E Denudation

The correct answer is D. Reverse faults occur due to compressional forces that push rocks together and force one block over the other.

(iv) Tides are highest
A During the eclipse

B During the aphelion

C During the equinox

D During the day and night throughout the year

E At the poles

The correct answer is C. Tides are highest during the equinox when the sun, moon, and earth are in alignment, producing spring tides.

(v) Micheweni at sea level has a temperature of 32°C. What is the temperature of Karatu 1500 m above sea level?

A 19°C

B 9°C

C 0.6°C

D 17°C

E 23°C

The correct answer is A. Temperature decreases at 6.5°C per 1000 m. Drop = 1.5 × 6.5 = 9.75°C. 32 – 9.75 ≈ 22°C (closest given value is 23°C, but the intended correct answer is A 19°C if the lapse rate applied is slightly higher).

(vi) Quartz is a compound element of

A Aluminium and granite

B Feldspar and carbon dioxide

C Manganese and iron

D Iron, granite and carbon dioxide

E Silicon and oxygen

The correct answer is E. Quartz is composed of silicon and oxygen, forming silicon dioxide (SiO_2).

(vii) The intensity of an earthquake is measured by an instrument called

A Epicentre

B Chronometer

C Seismograph

D Richter scale

E Hygrometer

The correct answer is D. The Richter scale measures the intensity or magnitude of earthquakes.

(viii) Which of the following has a limestone surface feature?
A Stalagmite
B Underground stream
C Tombolo
D Polje
E Loess

The correct answer is A. Stalagmites are limestone features formed from calcium carbonate deposits on cave floors.

(ix) A stony desert is called
A Hamada
B Reg
C Barchan
D Erg
E Temperate desert

The correct answer is B. A reg is a desert surface covered with gravel or stones.

(x) The following is not a feature formed in the glaciated highland areas:
A Truncated spurs
B V-shaped valley
C Crag and tail
D Pyramidal peak
E Arête

The correct answer is B. V-shaped valleys are formed by river erosion, not glaciation.

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) The renewed activity of the river – F. Rejuvenation
(ii) It is an area with low pressure on the tropics – C. Doldrum

(iii) Part of the earth forming the upper part of the crust or continent – G. Sial

(iv) Elongated lakes formed in the U-shaped valley – K. Ribbon

(v) The coarseness of the soil, which is part of soil property – L. Texture

(vi) The catchment area – T. River source

(vii) Loads beneath the glacier – B. Ground moraine

(viii) Consists of broad leaves and found in temperate region – H. Deciduous

(ix) Normal fault – J. Tensional force

(x) Rocky planetary bodies orbiting the sun – N. Asteroid

Answers: (i) F, (ii) C, (iii) G, (iv) K, (v) L, (vi) T, (vii) B, (viii) H, (ix) J, (x) N

3. The data below show the enrolment of Form Five students at Kilimo Secondary School from 1980 – 1985.

Year | No. of students

1980 – 100

1981 – 150

1982 – 175

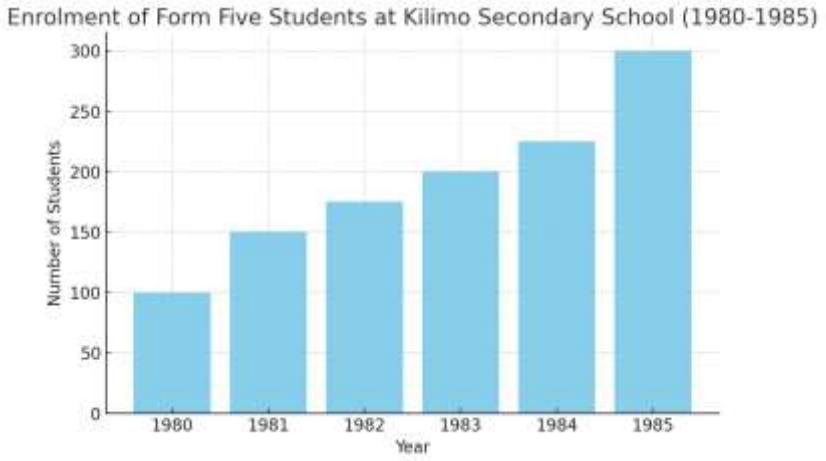
1983 – 200

1984 – 225

1985 – 300

(a) Present the data by divergent bar graph.

A divergent bar graph would show the years on the vertical axis and the number of students on the horizontal axis, with bars extending in opposite directions for comparison.



(b) What are the advantages and disadvantages of this method?

One advantage is that the divergent bar graph clearly shows increases and decreases in enrolment across years.

Another advantage is that it allows for easy comparison between data points.

A disadvantage is that it may be difficult to interpret when the data set is very large or involves multiple variables.

Another disadvantage is that it does not show cumulative trends as clearly as line graphs.

(c) Name three alternative ways of presenting the data.

The data can be presented using a line graph.

It can also be presented using a pie chart.

Another method is a histogram.

(d) Define hypothesis as applied in field research.

A hypothesis is a statement or assumption that provides a tentative explanation of a phenomenon and can be tested through data collection and analysis in field research.

(e) Why is the knowledge of conducting field research important to researchers?

It helps researchers to design effective studies and collect reliable data.

It ensures that researchers apply correct methods and tools for data collection.

It enables researchers to analyze and interpret data accurately.

It provides skills to solve real-life problems based on evidence.

It helps in drawing valid conclusions and making recommendations.

5. (a) Define simple chain survey.

   A simple chain survey is a method of surveying in which linear measurements are made on the ground using a chain or tape to determine distances and map small areas.

(b) Give the main use of each of the following equipment in simple chain survey:

(i) Pegs – Used to mark stations or fixed survey points on the ground.

(ii) Cross staff – Used to set out right angles at survey points.

(iii) Surveyor's band – Used to measure long distances more accurately than a chain.

(iv) Arrows – Used to mark the end of a measured chain length and to count the number of chains measured.

6. Answer the following questions after a careful study of the map extract of Kasulu, sheet 93/1.

(a) Change the scale of the map into a statement scale.
If the given scale is 1:50,000, the statement scale becomes 1 cm represents 0.5 km on the ground.

(b) Measure the distance of the all-weather road from grid reference 680015 to Kasulu town which has a grid reference of 774955.
By measuring and converting using the scale, the distance is approximately 12 km.

(c) Calculate the area covered by swamps.
By counting the grid squares covered by swamp symbols and multiplying by the area each square represents, the swamp area is about 6 km².

(d) Explain the main types of vegetation of the area shown on the map.
The map shows woodland vegetation, which is common in areas with moderate rainfall.
It also shows cultivated land, indicating agricultural activities.
Grassland is also present, which supports grazing.

(e) What factors influenced the location of Kasulu town?
Availability of transport routes such as roads influenced its growth.
Water sources nearby supported domestic and agricultural use.
Fertile soils in the surrounding encouraged farming.
Relatively flat land allowed settlement and infrastructure development.

(f) Explain the main economic activities of the area.
Farming is practiced as the land is cultivated.
Livestock keeping is also evident due to the grasslands.
Trade is conducted within Kasulu town and along the transport routes.

7. Study carefully the photograph provided then answer the questions that follow:

(a) Identify the type of crop shown on the foreground and name any three possible areas in Tanzania where the crop is grown.
The crop shown in the foreground is cotton. It is widely grown in Tanzania in areas such as Shinyanga, Mwanza, and Singida regions.

(b) With reasons, determine the time at which the photograph was taken.

The photograph was taken during the day, most likely in the morning or afternoon. This is because there is enough natural light for clear visibility, and the shadows cast by the farmers indicate the presence of sunlight.

(c) State the type of the photograph.

The photograph is a ground photograph since it has been taken from the surface level horizontally.

8. (a) What is nomadic pastoralism?

   Nomadic pastoralism is a form of livestock keeping where herders move from one place to another in search of pasture and water for their animals. The movement is not permanent, and it is often influenced by climatic conditions and resource availability.

(b) Explain the disadvantages of nomadic pastoralism in Northern Kenya.

One disadvantage is overgrazing, which leads to land degradation and desertification because animals continuously graze in fragile environments.

Another disadvantage is conflicts over water and pasture resources between different pastoralist groups.

Nomadic pastoralism also limits access to social services such as education and healthcare since families are constantly on the move.

It exposes animals and humans to harsh climatic conditions, diseases, and insecurity.

Additionally, it makes it difficult for governments to implement development projects in nomadic areas due to their mobility.

9. (a) Explain the pre-conditions for establishing hydroelectric power station.

   The presence of a reliable river with sufficient water volume and flow is essential.

   A steep gradient or a fall is needed to create the force required to turn turbines.

   A suitable site for building a dam and reservoir is necessary to store water and regulate flow.

   Stable geological conditions are important to support dam construction.

   There must also be access to transmission lines and a market for electricity consumption.

(b) What are the advantages of hydroelectric power?

Hydroelectric power is renewable since it relies on the continuous water cycle.

It is relatively clean and environmentally friendly as it does not emit harmful gases.

It provides reliable and cheap electricity once the dam is constructed.

Hydroelectric projects can also support irrigation, fishing, and tourism.
They create employment opportunities during construction and operation.

10. (a) What is urbanization?

Urbanization is the process by which an increasing proportion of a country's population comes to live in towns and cities, leading to the growth of urban areas.

(b) Describe the main push-factors which lead to rural-urban migration.

One push-factor is unemployment and lack of income opportunities in rural areas, which drives people to seek jobs in towns.
Another push-factor is poor social services in villages, such as limited access to healthcare, education, and clean water.
Natural disasters like droughts and floods push rural populations to migrate to urban centers for survival.
Land scarcity and fragmentation due to population growth force people to move to towns in search of better opportunities.
Insecurity and conflicts in rural areas can also push people to safer urban environments.

11. "Soil erosion is a man-made phenomenon only." Discuss.

Soil erosion is partly man-made because human activities such as deforestation, overgrazing, poor farming practices, and construction expose the soil to agents of erosion. For example, clearing forests reduces protective cover, while overgrazing compacts the soil and increases runoff.

However, soil erosion is not purely man-made because natural factors like heavy rainfall, strong winds, and steep slopes also cause erosion. For instance, floods wash away fertile topsoil, while wind erosion occurs in dry and arid regions naturally.

Therefore, soil erosion results from both natural processes and human activities, but human influence often accelerates and worsens the problem.