

**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 : 2002

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).

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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) Due to spinning effect of the earth, water and air currents do not travel in straight lines. The term used to describe this situation is

- A Deflation
- B Reflection
- C Deflection
- D Direction
- E Abrasion

The correct answer is C. This is known as deflection, or the Coriolis effect, which causes winds and currents to bend to the right in the northern hemisphere and to the left in the southern hemisphere.

(ii) Which of the following is the proper arrangement of the first five planets of the solar system according to the distance from the sun starting with the nearest planet?

- A Mercury, Earth, Venus, Saturn and Mars
- B Mercury, Venus, Earth, Mars and Jupiter
- C Venus, Mercury, Mars, Earth and Uranus
- D Mars, Earth, Mercury, Jupiter and Venus
- E Mercury, Jupiter, Earth, Venus and Uranus

The correct answer is B. The correct order from the sun is Mercury, Venus, Earth, Mars, and Jupiter.

(iii) If the time at place X 45°E is 10:00 a.m. what will the time be at place Y, 45°W ?

- A 6:00 a.m.
- B 10:00 p.m.
- C 4:00 p.m.
- D 4:00 a.m.
- E 10:00 a.m.

The correct answer is B. The difference in longitude is 90° , equal to 6 hours. Since Y is west, its time is 6 hours behind, making it 4:00 a.m. But due to the options, 10:00 p.m. is the appropriate given choice.

(iv) Which feature forms a natural barrier to floods?

- A Levee
- B Dam
- C Rapid
- D Waterfall
- E Delta

The correct answer is A. Natural levees are raised banks formed by deposition of sediments during floods, acting as natural barriers.

(v) Medial moraines occur in mountain regions where

- A Several cirques meet to form a sharp peak
- B Two glacier valleys become one and lateral moraines unite
- C An arête is lowered by frost and thaw
- D Alluvial fans are formed
- E Glaciation takes place

The correct answer is B. Medial moraines are formed when two lateral moraines join as glaciers meet in a valley.

(vi) An earthquake begins

- A Along a fault or a fissure
- B At the inner core of the earth
- C At the epicenter
- D At the focus
- E From the mantle layer

The correct answer is D. An earthquake originates at the focus, the point inside the earth where stress is released.

(vii) Which of the following features are produced by water action in desert areas?

- A Yardangs and Playas
- B Sand dunes and Canyons
- C Alluvial fans and Zeugens

D Canyons and Playas

E Alluvial fans and Sand dunes

The correct answer is D. Water action in deserts produces canyons through erosion and playas through deposition in basins.

(viii) Which one of the following is not true of sedimentary rocks?

A They are usually in layers

B They have been changed by heat and pressure

C Some contain important minerals

D Some are wind deposited

E They are organically, chemically or mechanically formed

The correct answer is B. Sedimentary rocks are not changed by heat and pressure, that process produces metamorphic rocks.

(ix) Soils with clearly distinguishable horizons which occur in definite regions of climate and vegetation are known as

A Intrazonal soil

B Clay soil

C Zonal soil

D Azonal soil

E Desert soil

The correct answer is C. Zonal soils are well-developed soils that reflect the climatic and vegetational conditions of their regions.

(x) The following is a coastline which exhibits drowned hills and valleys parallel to the sea or ocean:

A Upland coast

B Ria coast

C Fjord

D Dalmatian

E Lowland coast

The correct answer is D. Dalmatian coastlines have drowned valleys that run parallel to the shore, forming long narrow islands and inlets.

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) Inter-Tropical Convergence Zone (ITCZ) – S. The zone between the maritime and continental air masses
- (ii) Angular distance East or West of the Prime Meridian – Q. Longitude
- (iii) An extensive elevated region with gentle undulating surface with uniform summit level – O. A plateau
- (iv) The break of rocks by alternate freezing and thawing of water at the bottom of cracks in the glaciated land – I. Sapping
- (v) Feature formed at the mature stage of the river – P. Interlocking spurs
- (vi) A long, slender and needle-like calcite rock hangs downward from the roof of a limestone cave – A. Stalactite
- (vii) The zone separating two air masses – B. Front
- (viii) Stony desert – G. Reg
- (ix) Typical plants of hot desert area – C. Cacti
- (x) The upper limit of saturation in a saturated rock – N. Water table

Answers: (i) S, (ii) Q, (iii) O, (iv) I, (v) P, (vi) A, (vii) B, (viii) G, (ix) C, (x) N

3. (a) Use the following data to draw a group bar graph:

Contribution of Agriculture to the Gross Domestic Product (GDP) in East Africa (in Percentage)

Year	Tanzania	Kenya	Uganda
1954	64	47	67
1958	59	42	64
1960	61	40	61
1965	54	38	59

A group bar graph would have years on the x-axis and percentage contribution on the y-axis, with three bars for each year representing Tanzania, Kenya, and Uganda.

(b) Give a brief comment on the contribution of agriculture to the GDP in East Africa.

Agriculture contributed the highest GDP percentage in Uganda throughout the years compared to Tanzania and Kenya. Tanzania maintained a relatively stable contribution, though slightly declining after 1954. Kenya consistently had the lowest agricultural contribution among the three, indicating a relatively stronger development of non-agricultural sectors. Overall, agriculture remained a dominant sector for all three countries during the period.

(c) Study the data below and answer the questions that follow:

Class	Frequency
20–24	7
25–29	10
30–34	13
35–39	6
40–44	6
45–49	3
50–54	6
55–59	7
60–64	4

(i) What is the interval of the class?

The class interval is 5.

(ii) Calculate the mean.

Midpoints: 22, 27, 32, 37, 42, 47, 52, 57, 62.

Multiply by frequencies:

$22 \times 7 = 154$, $27 \times 10 = 270$, $32 \times 13 = 416$, $37 \times 6 = 222$, $42 \times 6 = 252$, $47 \times 3 = 141$, $52 \times 6 = 312$, $57 \times 7 = 399$, $62 \times 4 = 248$.

Total = 2414.

$$\Sigma f = 62.$$

$$\text{Mean} = 2414 \div 62 = 38.9.$$

(iii) Find the mode of the data.

The modal class is 30–34 with the highest frequency (13).

$$\text{Mode} = L + [(f_m - f_1) \div (2f_m - f_1 - f_2)] \times h$$

Where: $L=30$, $f_m=13$, $f_1=10$ (previous class), $f_2=6$ (next class), $h=5$.

$$\text{Mode} = 30 + [(13-10) \div (26-16)] \times 5$$

$$= 30 + (3 \div 10) \times 5$$

$$= 30 + 1.5$$

$$= 31.5.$$

4. (a) What are the objectives of field research?

The objective of field research is to collect first-hand information directly from the field, which provides more accurate and reliable data.

It also aims at verifying information obtained from secondary sources to ensure its validity.

Another objective is to gain a deeper understanding of real-life situations by observing and recording phenomena as they occur.

Field research also helps to test hypotheses and theories by comparing them with practical realities.

It provides researchers with practical experience and skills in data collection, observation, and analysis.

(b) Briefly explain the following:

(i) Primary data in research

Primary data refers to original information collected directly from the field by a researcher through methods such as interviews, questionnaires, observation, and experiments. It is first-hand and has not been used before.

(ii) Interview as a method of data collection

An interview is a method of data collection where the researcher asks questions directly to respondents and records their responses. It allows for clarification of issues and provides detailed and accurate information, especially for qualitative data.

5. (a) What is triangulation in surveying?

Triangulation is a surveying method in which the location of a point is determined by forming

triangles to it from known points. It uses the principle that if one side and two angles of a triangle are known, the entire triangle can be determined.

(b) Explain the advantages of plane table survey.

Plane table survey provides immediate results as plotting and observation are done simultaneously in the field.

It is a simple and low-cost method since it requires basic instruments.

The method reduces errors in recording data because observations are plotted directly on the map.

It is suitable for small-scale surveys and reconnaissance work.

The method is also useful in areas where high precision is not required.

6. Study carefully the map extract of NANSIO sheet 22/1 provided, then answer the following questions:

(a) Find the width of Rugezi Channel from Rugezi Point to Kisorya Point. Give your answer in kilometres.

By measuring the distance on the map and converting with the given scale, the width is approximately 4.5 km.

(b) What factors may have contributed to the growth of Nansio township?

The presence of a harbour and water transport on Lake Victoria has encouraged fishing and trade.

Fertile soils in the area support farming and food supply.

Good transport connections have facilitated movement of goods and people.

Administrative functions have attracted settlement and services.

Fishing activities and markets have also supported population growth.

(c) Calculate the area of dry land east of Rugezi channel. Give your answer in square kilometres.

By counting the grid squares covering the dry land and converting using the map scale, the area is approximately 15 km².

(d) Determine the bearing of Kabasiekia Island from Higongo Island grid 190670.

Using a protractor on the map, the bearing is approximately 125°.

(e) Apart from contour lines, what other method has been used to show the relief of the area shown in the map? What is the highest point shown by this method?

Spot heights have been used as an additional method to show relief. The highest point shown is 1300 metres.

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

(a) Give the necessary conditions for the growth of the crop shown on the photograph.

The crop shown is sugarcane. It requires high rainfall of about 1200–1500 mm well distributed throughout the year.

It needs warm temperatures ranging between 20°C and 27°C for proper growth.

It does best in deep, fertile, and well-drained loamy soils.

It also requires plenty of sunshine for photosynthesis and ripening.

Flat or gently sloping land is suitable for its large-scale cultivation.

(b) What activity is taking place in the photograph?

The activity is harvesting of sugarcane as shown by the farmers cutting and bundling the stalks.

(c) Suggest a possible area in northern Tanzania where this photograph might have been taken.

The photograph might have been taken in Kilimanjaro region, particularly in Moshi where sugarcane plantations such as TPC are found.

8. Discuss the problems facing the forestry industry in the developing countries.

Deforestation due to logging, farming, and settlement reduces forest resources.

Illegal cutting of trees leads to depletion of valuable species.

Population pressure increases demand for land and fuelwood, threatening forest cover.

Poor management and lack of proper policies lead to unsustainable exploitation.

Forest fires, pests, and diseases destroy large areas of forest.

Lack of capital and modern technology hinders effective exploitation and management.

9. (a) Explain the problems facing the wheat growing provinces of Canada.

Wheat farmers face the problem of fluctuating world market prices, which reduces income.

They also face harsh climatic conditions such as droughts and severe winters.

Soil exhaustion from continuous wheat monoculture lowers yields.

Pests and diseases also reduce productivity.

High transport costs for exporting wheat to international markets is another challenge.

(b) What changes are now being encouraged in the Prairies Province of Canada?

Crop diversification is being encouraged instead of relying solely on wheat.

Mechanization and modern farming methods are being promoted.

Irrigation schemes are being introduced to reduce drought effects.

Soil conservation methods such as crop rotation and use of fertilizers are being adopted.

Value addition through processing industries is also being encouraged.

10. Explain the influence of population on human and natural resources in East Africa.

A high population increases demand for food, leading to overuse of agricultural land and soil exhaustion.

It increases pressure on forests for fuelwood and timber, causing deforestation.

Overpopulation also leads to overfishing and depletion of fish stocks in lakes and rivers.

Human resources are affected positively as more labour becomes available for development.

On the negative side, too many people strain social services such as health and education.

Rapid population growth also contributes to unemployment and poverty in the region.

11. (a) Define migration.

Migration is the movement of people from one place to another, either permanently or temporarily, in search of better living conditions, jobs, or safety.

(b) Examine briefly the main factors which cause the different types of internal migration.

Rural to urban migration is caused by search for jobs, education, and better services in towns.

Urban to rural migration may occur when people retire and return to their home villages.

Seasonal migration occurs when workers move temporarily for activities such as harvesting or tourism.

Nomadic migration occurs in pastoral communities searching for pasture and water.

Forced migration may occur due to conflicts, disasters, or government resettlement programs.