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 : 1996**

Instructions

1. This paper consists of sections EIGHT questions.
2. Answer all questions in section A, B and C and **one (1)** question 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. Carefully study the map extract of TANGA sheet 130/1 provided, then answer the questions that follow:

(a) Give the method used to show the relief of this map.
The method used to show the relief of the map is contour lines, which join places of equal height above sea level.

(b) Determine the area of the Indian Ocean.
The Indian Ocean area is the entire eastern part of the map, covering all the space beyond the coastline, occupying several square kilometers depending on the grid reference provided.

(c) What is the length of the railway line shown on the map?
The railway line shown on the map measures approximately 20 km, based on the scale of the map.

(d) Determine the direction of Manjonjo (Grid 070378) from Usagara (Grid 127390).
The direction of Manjonjo from Usagara is North-West.

(e) Suggest the climate of this area.
The area experiences a tropical climate with high temperatures and seasonal rainfall, typical of coastal regions of East Africa.

(f) Comment on the economic activities of the area shown on the map.
Economic activities include farming of cash crops such as sisal and coconut, fishing along the coast, trade and transport due to the presence of the port and railway line, and livestock keeping in the inland areas.

(g) Draw a cross-section from Grid 040376 to Grid 040419.
The cross-section would show the relief rising gently from the coastline inland, with contour spacing reflecting the gradient.

(h) Are the two points of the cross-section intervisible?
The two points are not intervisible because the relief has intermediate higher grounds obstructing direct visibility.

2. Carefully study the photograph provided below and then answer the questions that follow:

(a) Name the cash crop shown in this photograph.
The cash crop shown in the photograph is tea.

(b) Under what scale is this type of farming practised?
This type of farming is practised under large-scale plantation farming.

(c) Where in East Africa is this crop grown?
In East Africa, tea is grown in Kericho and Nandi Hills in Kenya, Mufindi and Njombe in Tanzania, and Fort Portal and Bushenyi in Uganda.

(d) With reference to the crop what are the climatic conditions of this area?
The area requires high rainfall of over 1500 mm annually, well-distributed throughout the year.
It requires cool temperatures ranging between 14°C and 24°C.
The crop grows well in highland areas above 1500 m with fertile volcanic soils.

(e) Name two other crops which could also be grown in this area.
Other crops that can be grown in this area include coffee and pyrethrum.

3. (a) Read the following statements carefully and give the letter of the correct answer.

(i) The inner part of the earth is believed to be:
(a) liquid
(b) solid
(c) hollow
(d) fluffy
(e) both solid and liquid

Correct answer: **(e) both solid and liquid**. The earth's interior has a solid inner core and a liquid outer core.

(ii) An intrusion of magmatic material across the bedding plane is:
(a) dyke
(b) sill

(c) vent
(d) volcanic pipe
(e) lava

Correct answer: **(a) dyke**. A dyke cuts vertically or across bedding planes.

(iii) Physical weathering is mainly caused by:
(a) exfoliation
(b) block disintegration
(c) temperature change
(d) frost action
(e) winds

Correct answer: **(c) temperature change**. Expansion and contraction due to temperature change is the main cause of physical weathering.

(iv) Which of the following conditions is important for the growth of coral reefs?
(a) very cool temperatures
(b) cool sea water
(c) warm sea water
(d) clear sea water
(e) clean river water

Correct answer: **(c) warm sea water**. Corals require warm water between 20°C and 27°C.

(v) Fold mountains are mainly produced by:
(a) depression
(b) compression
(c) faulting
(d) tension
(e) earthquake

Correct answer: **(b) compression**. Compression forces cause folding of rocks to form fold mountains.

(vi) Mr. X is being sworn in Dar es Salaam 45°E at 10 a.m. What will be the time at a Brazilian village 45°W?

(a) 6 a.m.

(b) 10 p.m.

(c) 4 a.m.

(d) 10 a.m.

(e) 4 p.m.

Correct answer: **(b) 10 p.m.**. The difference is 90° = 6 hours. Brazil is behind Dar es Salaam, so 10 a.m. – 6 hours = 4 a.m. (Wait: need correction). Let's check carefully:

45°E to 45°W = 90° difference. Time difference = 6 hours. If it is 10 a.m. at 45°E, then at 45°W it will be 4 a.m.

Correct answer: **(c) 4 a.m.**.

(vii) An ox-bow lake is normally found:

(a) in the mature stage of a river

(b) in the young stage of a river

(c) along the flood plain

(d) in the flood plain

(e) in the rift valley

Correct answer: **(a) in the mature stage of a river**. Ox-bow lakes form due to meander cut-offs in the mature stage.

(viii) Features produced by glacial erosion include:

(a) moraines

(b) loess

(c) alluvial fans

(d) arêtes

(e) drumlins

Correct answer: **(d) arêtes**. These are sharp ridges formed by glacial erosion.

(ix) River rejuvenation is a:

(a) youthful stage of a river

(b) river system in its mature stage

(c) river system which shows renewed erosive activity

(d) river system which is not related to the structure of the area

(e) river system in an ideal profile

Correct answer: **(c) river system which shows renewed erosive activity**.

(x) A name given to an area of land surrounded by water in all sides is:

(a) lake

(b) lagoon

(c) island

(d) iceland

(e) gulf

Correct answer: **(c) island**. An island is a landmass surrounded by water on all sides.

(b) Write the correct number of the item in Group B against the correct letter of the item in Group A.

Group A

A. Time observed along a certain meridian

B. Main cause of soil erosion

C. Eskers, kames, drumlins

D. South-West winds

E. Earth's zone mainly made up of nickel and iron

F. An area surrounded in all sides by water

G. Rocks which have many pores

H. Rainfall caused by intensive solar radiation

I. Wearing away of rocks by moving agents

J. A feature of marine erosion

Group B

1. Ice depositional features

2. Standard time

3. Deforestation, overgrazing

4. Local time

5. Agents of soil erosion, e.g. water

6. Ice erosional features

7. Trade winds

8. Mantle

9. Westerlies

10. Core

11. Lake

12. Cirque

13. Arêtes

14. Cave

15. Island

16. Beach

17. Impermeable rocks

18. Weathering

19. Erosion

20. Orographic

21. Porous rock

22. Convectional

Answers

A – 4 (Local time: time observed along a certain meridian)

B – 3 (Deforestation, overgrazing: main cause of soil erosion)

C – 1 (Ice depositional features: eskers, kames, drumlins)

D – 9 (Westerlies: south-west winds)

E – 10 (Core: zone of nickel and iron)

F – 15 (Island: area surrounded by water)

G – 21 (Porous rock: rocks with many pores)

H – 22 (Convectional rainfall: caused by solar radiation)

I – 5 (Agents of soil erosion: wearing away by moving agents)

J – 16 (Beach: feature of marine erosion)

4. Study the following data and then answer the questions that follow:

Temperature and Rainfall of Station X

Month	**J**	**F**	**M**	**A**	**M**	**J**	**J**	**A**	**S**	**O**	**N**	**D**
Temp	28	28	27	26	25	24	24	25	26	27	27	28

Month	**J**	**F**	**M**	**A**	**M**	**J**	**J**	**A**	**S**	**O**	**N**	**D**
°C												
Rainfall mm	1470	2460	1300	910	740	660	540	555	790	892	1270	1320

(a) Determine the annual range of temperature.

Maximum = 28°C, Minimum = 24°C.

Range = 28 – 24 = 4°C.

(b) What is the annual mean temperature?

Sum = 28 + 28 + 27 + 26 + 25 + 24 + 24 + 25 + 26 + 27 + 27 + 28 = 315.

Mean = 315 ÷ 12 = 26.25°C.

(c) Calculate the annual rainfall of station X.

1470 + 2460 + 1300 + 910 + 740 + 660 + 540 + 555 + 790 + 892 + 1270 + 1320 = 13,407 mm.

(d) Explain the relationship between rainfall and temperature.
Rainfall is very high in all months and is almost uniformly distributed throughout the year, but slightly higher in warmer months such as January to March. Temperature variation is minimal, showing a close link between convectional rainfall and high insolation.

(e) With reasons suggest the type of climate experienced at this station.
The station experiences an equatorial climate. This is evident from the high rainfall exceeding 2000 mm annually, small annual temperature range of 4°C, and high mean annual temperature of 26°C.

(f) Where could this station be located?
This station could be located in the Congo Basin, Lake Victoria Basin, or coastal West Africa along the equatorial belt.

5. Explain the distribution and characteristics of Tropical Savannah climate.

The Tropical Savannah climate is found between 5° and 20° north and south of the equator in regions such as parts of East Africa, northern Australia, Brazil, and parts of India.

It is characterized by two distinct seasons: a long dry season and a wet season. Rainfall is seasonal, ranging between 750 mm and 1500 mm per year, mainly associated with the movement of the ITCZ.

Temperatures remain high throughout the year, with annual averages between 20°C and 30°C, but the annual range is larger than in equatorial regions.

The vegetation consists of tall grasses and scattered drought-resistant trees such as acacia and baobab. During the dry season, grasses wither and trees shed leaves to reduce water loss.

This climate supports pastoralism, subsistence farming, and wildlife tourism. It is also prone to bushfires during the dry season due to dry grasses.

6. Explain how livestock keeping can be improved in East Africa.

Livestock keeping can be improved in East Africa by introducing modern animal husbandry techniques, such as rotational grazing, zero grazing, and controlled stocking rates, to prevent overgrazing and ensure sustainable pasture use.

Improvement of livestock breeds through cross-breeding and artificial insemination can increase productivity in terms of milk, meat, and hides. Exotic breeds can be introduced and adapted to local conditions.

Provision of veterinary services, vaccination programs, and disease control measures such as spraying against ticks can reduce mortality and improve the health of animals.

Water supply can be improved by constructing dams, boreholes, and wells in arid and semi-arid areas where livestock keeping is practiced. This ensures animals have access to adequate water throughout the year.

Better marketing systems, establishment of cooperatives, and provision of fair prices for livestock products can encourage farmers to invest more in livestock keeping.

Government policies, extension services, and provision of credit facilities can support pastoralists and farmers to modernize their practices, buy feed, and improve housing facilities for their animals.

7. Draw a sketch map of East Africa and show:
   (a) The Great East African Rift Valley.
   (b) The lakes:
   (i) Victoria
   (ii) Tanganyika
   (iii) Nyasa
   (iv) Kyoga
   (v) Turkana
   (vi) Indian Ocean.
   (c) Areas where coffee is cultivated.

On the sketch map, the Rift Valley should run from the north in Ethiopia through Kenya, Tanzania, to Malawi. Lake Victoria lies between Kenya, Tanzania, and Uganda. Lake Tanganyika borders Tanzania, Burundi, and Zambia. Lake Nyasa (Malawi) lies between Malawi, Mozambique, and Tanzania. Lake Kyoga lies in central Uganda, while Lake Turkana lies in northwestern Kenya. The Indian Ocean borders Kenya and Tanzania to the east. Coffee cultivation areas include the slopes of Mt. Kenya, Mt. Elgon, Kilimanjaro, and Bukoba areas near Lake Victoria.

8. (a) Draw a sketch map of Southern Africa, and on it mark and label the Namib and Kalahari deserts, Drakensberg mountains, and the Benguela current.

On the map, the Namib Desert is located along the Atlantic coast of Namibia, while the Kalahari Desert stretches across Botswana, Namibia, and parts of South Africa. The Drakensberg Mountains are located in eastern South Africa. The Benguela Current flows northwards along the southwest coast of Africa, from South Africa through Namibia to Angola.

(b) Account for the existence of Namib and Kalahari deserts.

The Namib Desert exists because of the cold Benguela Current, which reduces evaporation and rainfall along the coast, creating arid conditions. The desert also lies in a rain shadow area caused by mountains inland.

The Kalahari Desert is a semi-arid region caused by subtropical high-pressure systems, which limit rainfall. Its sandy soils have poor water retention, making the area appear desert-like even though it receives some seasonal rainfall.

9. "Egypt is the Nile and the Nile is Egypt". Explain.

Egypt's survival and development depend heavily on the Nile River, as it provides water for domestic use, irrigation, and industrial development in an otherwise desert country. Without the Nile, most of Egypt would be uninhabitable.

The Nile's annual floods deposited fertile silt along its valley and delta, which has historically sustained Egyptian agriculture, enabling the growth of crops like cotton, wheat, and rice.

The Nile also serves as a means of transport and communication, connecting Upper and Lower Egypt and facilitating trade since ancient times.

Hydroelectric power from the Aswan High Dam supplies energy that supports industrial and domestic needs, further linking Egypt's progress to the Nile.

Fishing, tourism, and settlement are also concentrated along the Nile, showing how the river forms the backbone of Egypt's economy and social life.

Hence, the phrase “Egypt is the Nile and the Nile is Egypt” reflects the absolute dependence of the country on the river.

10. (a) Draw a sketch map of the Netherlands and label the Rhine and Meuse rivers, Ijssel lake, Frisian islands, and Wadden sea.

The sketch map should show the Netherlands with the Rhine and Meuse rivers flowing into the North Sea. Ijssel Lake lies in the central part. The Frisian Islands stretch along the northern coast into the Wadden Sea.

(b) Explain why land reclamation was necessary to the Dutch.

Land reclamation was necessary because much of the Netherlands lies below sea level, prone to flooding, and unsuitable for settlement or agriculture without control. The country also has limited land, yet a high population density, requiring more land for farming, housing, and industries.

The Dutch also reclaimed land to increase agricultural production, particularly dairy farming, crop cultivation, and horticulture. Industrial and urban expansion has also relied on reclaimed land.

Flood control and protection against the North Sea were other major reasons, achieved through polders, dykes, and drainage systems.

11. Giving examples, explain the factors which necessitated the development of early industries in U.S.A.

The availability of abundant natural resources such as coal, iron ore, and oil encouraged the growth of industries, particularly steel, oil refining, and textiles.

A large labor force, including immigrants from Europe, provided cheap manpower for industries.

The development of transport systems, including railways and waterways like the Mississippi River, enabled movement of raw materials and finished goods.

A large domestic market supported by a growing population and purchasing power stimulated demand for manufactured goods.

Government policies of free enterprise and investment in infrastructure further promoted industrial growth.

Examples include the steel industry in Pittsburgh, automobile industry in Detroit, and textile industry in New England.

12. (a) On the sketch map of China provided locate and label the main industrial areas of China.

These areas include the Northeast (Manchuria), the Yangtze River Delta (Shanghai, Nanjing), the Pearl River Delta (Guangzhou, Shenzhen, Hong Kong), and Beijing-Tianjin region.

(b) Explain why Manchuria has grown into an important industrial centre.

Manchuria has vast deposits of coal and iron ore, which form the basis for heavy industries like steel production.

It has fertile soils supporting agriculture, which provides raw materials for agro-based industries.

The region has well-developed transport networks, including railways and ports such as Dalian, which facilitate trade and export.

Government policy encouraged industrialization, especially during the socialist era, with investments in heavy industries.

Its proximity to international markets like Japan, Korea, and Russia further promoted its industrial growth.