



NYANDO MIXED SECONDARY SCHOOL

312 GEOGRAPHY

Form 4 End Term Examination

Time: 2 ½ Hours

Name:

Adm No:

School:

Class:

Signature:

Date:

INSTRUCTIONS TO CANDIDATES

- (a) Write your name and index number in the spaces provided at the top of this page.
- (b) Write your school name, sign and write the date of the examination in the spaces provided above.
- (c) This paper consists of **Two** sections: **Section I** and **Section II**.
- (d) Answer **ALL** questions in Section I and any **five** questions from Section II.
- (e) Marks may be given for correct working, relevant points, and clear presentation.
- (f) Non-programmable silent electronic calculators may be used where necessary.
- (h) This paper consists of **6 printed pages**.
- (i) Candidates should check the question paper to ensure that all the pages are printed as indicated and no questions are missing.
- (j) Candidates should answer the questions in English.

For Examiner's Use Only

SECTION I

1	2	3	4	5	6	7	8	9	Total

SECTION II

10	11	12	13	14	15	16	17	18	Total	Grand Total

SECTION I (50 Marks)

Answer **all** questions in this section in the spaces provided.

1. Which of the following is an example of visible trade in Kenya? A. Tourism (1 mks)
B. Export of tea C. Insurance services D. Banking services
2. The most efficient mode of transporting natural gas from Mombasa to Nairobi is: A. Road B. Railway C. Pipeline D. Air (1 mks)
3. Which of the following is used to locate a feature on a topographic map? A. Bearing (1 mks)
B. Grid reference C. Scale D. Contour interval
4. On a map with a scale of 1:50,000, what is the ground distance represented by a 3 cm line? A. 1.5 km B. 3 km C. 15 km D. 0.15 km (1 mks)
5. Which of the following is a major effect of water pollution in Lake Victoria? (1 mks)
A. Increased fish population B. Eutrophication C. Increased water clarity D. Cooling of water
6. If a country's export value exceeds its import value, the country is said to have a: A. Trade deficit B. Trade surplus C. Balance of trade D. Trade barrier (1 mks)
7. Which factor has most contributed to the expansion of air transport in Kenya? (1 mks)
A. Availability of alternative cheaper transport B. Growth of international tourism C. Poor road network D. Lack of rail lines

8. On a topographic map, rivers and other water features are represented by: A. Red lines B. Blue lines C. Black dotted lines D. Brown broken lines (1 mks)
9. Which of the following is the most effective way to reduce air pollution from a cement factory? A. Releasing waste gases through short chimneys to spread locally B. Installing electrostatic precipitators to trap dust particles C. Discharging waste into nearby rivers D. Burning solid waste in open dumps (1 mks)



SECTION II (50 Marks)

Answer any **five** questions from this section in the spaces provided.

10. (a) State the meaning of the scale of a map. (b) If the distance between two villages on a map is 5 cm and the scale is 1:25,000, calculate the actual distance in kilometres. (c) Name one conventional symbol used to represent a forest on a map. (4 mks)
11. (a) Define the term pollution. (b) Give two causes of air pollution in urban areas. (c) State two methods used to control noise pollution. (5 mks)
12. (a) Give two reasons why pipeline transport is preferred for transporting oil in Kenya. (b) Explain three disadvantages of road transport in Kenya. (5 mks)
13. (a) Give two examples of invisible trade in Kenya. (b) Explain two ways in which trade promotes economic development. (c) Identify two barriers to trade between Kenya and other African countries. (6 mks)

- 14.** (a) Give the meaning of bearing. (b) A hill is located 5 km north-east of a school. Determine the bearing of the hill from the school. (c) The scale of a map is 1:25,000. A rectangular forest measures 4 cm by 3 cm on the map. Calculate the actual area of the forest in hectares. (6 mks)

- 15.** (a) Give two effects of water pollution on human health. (b) Explain two measures that can be used to reduce water pollution in Lake Nakuru. (6 mks)

- 16.** (a) Give three factors that promote trade in East Africa. (b) Explain how the East African Community (EAC) promotes trade among member states. (6 mks)

- 17.** (a) Name two modes of transport commonly used by tourists traveling from Kenya to Europe. (b) Explain three challenges facing sea transport at Mombasa port. (6 mks)

- 18.** (a) Name two types of drainage patterns found on a topographic map. (b) Describe how contour lines are used to identify a steep slope. (c) A map has a scale of 1:50,000. A cycling track on the map measures 15 cm. Calculate the actual length of the track in kilometres. (7 mks)

SECTION III

19. Discuss four factors that have contributed to the development of trade in Kenya. (10 mks)

20. Explain four ways in which transport promotes economic development in Kenya. (10 mks)

- 21.** Describe four effects of air pollution on human health and four control measures that can be taken to reduce air pollution in Kenya. (10 mks)

- 22.** Explain how a map can be used to describe the relief and drainage of an area. (10 mks)

312 GEOGRAPHY MARKING SCHEME

Form 4

SECTION I (50 marks)

1. Which of the following is an example of visible trade in Kenya? A. Tourism B. Export of tea C. Insurance services D. Banking services (1 marks)

■ Correct answer: B. Export of tea (1)

2. The most efficient mode of transporting natural gas from Mombasa to Nairobi is: A. Road B. Railway C. Pipeline D. Air (1 marks)

■ Correct answer: C. Pipeline (1)

3. Which of the following is used to locate a feature on a topographic map? A. Bearing B. Grid reference C. Scale D. Contour interval (1 marks)

■ Correct answer: B. Grid reference (1)

4. On a map with a scale of 1:50,000, what is the ground distance represented by a 3 cm line? A. 1.5 km B. 3 km C. 15 km D. 0.15 km (1 marks)

■ Correct answer: A. 1.5 km (1)

Alt:

— B. 3 km – result of direct use of scale as 1cm=1km

5. Which of the following is a major effect of water pollution in Lake Victoria? A. Increased fish population B. Eutrophication C. Increased water clarity D. Cooling of water (1 marks)

■ Correct answer: B. Eutrophication (1)

6. If a country's export value exceeds its import value, the country is said to have a: A. Trade deficit B. Trade surplus C. Balance of trade D. Trade barrier (1 marks)

■ Correct answer: B. Trade surplus (1)

7. Which factor has most contributed to the expansion of air transport in Kenya? A. Availability of alternative cheaper transport B. Growth of international tourism C. Poor road network D. Lack of rail lines (1 marks)

■ Correct answer: B. Growth of international tourism (1)

8. On a topographic map, rivers and other water features are represented by: A. Red lines B. Blue lines C. Black dotted lines D. Brown broken lines (1 marks)

■ Correct answer: B. Blue lines (1)

9. Which of the following is the most effective way to reduce air pollution from a cement factory? A. Releasing waste gases through short chimneys to spread locally B. Installing electrostatic precipitators to trap dust particles C. Discharging waste into nearby rivers D. Burning solid waste in open dumps (1 marks)

■ Correct answer: B. Installing electrostatic precipitators to trap dust particles (1)

SECTION II (50 marks)

10. (a) State the meaning of the scale of a map. **(b)** If the distance between two villages on a map is 5 cm and the scale is 1:25,000, calculate the actual distance in kilometres. (4 marks)

(c) Name one conventional symbol used to represent a forest on a map.

■ (a) The scale of a map is the ratio between a distance on the map and the corresponding distance on the ground. (1 mark) (1)

■ (b) Method: $5 \text{ cm} \times 25,000 = 125,000 \text{ cm}$. (M1) (1)

■ (b) Accuracy: $125,000 \text{ cm} = 1.25 \text{ km}$. (A1) (1)

■ (c) Green tree symbol / forest symbol / green shaded area. (1 mark) (1)

Alt:

— (a) The relationship between map distance and ground distance.

— (c) Any conventional symbol used for forest e.g., green tree symbol, forest symbol, green area.

11. (a) Define the term pollution. **(b)** Give two causes of air pollution in urban areas. (5 marks)

(c) State two methods used to control noise pollution.

■ (a) Pollution is the contamination of the environment by harmful substances or pollutants. (1 mark) (1)

■ (b) Causes of air pollution in urban areas: industrial emissions (1 mark), vehicle exhaust fumes (1 mark). (Accept any two) (2)

■ (b) Causes of air pollution in urban areas: open burning of waste (1 mark), construction dust (1 mark). (Accept any two) (2)

■ (c) Methods to control noise pollution: planting trees/vegetation barriers (1 mark), enforcing noise limits (1 mark). (Accept any two) (2)

Alt:

— (b) Any valid cause e.g., burning of fossil fuels, power plants, dust from roads.

— (c) Any valid measure e.g., soundproofing buildings, regular maintenance of vehicles, setting quiet zones.

12. (a) Give two reasons why pipeline transport is preferred for transporting oil in Kenya. **(b)** Explain three disadvantages of road transport in Kenya. (5 marks)

■ (a) Reasons why pipeline transport is preferred for oil in Kenya: economical for large volumes (1 mark), avoids traffic congestion (1 mark). (Accept any two, each 1 mark) (2)

■ (b) Disadvantages of road transport: high risk of accidents (1 mark), expensive for long distances (1 mark), air pollution (1 mark). (Accept any three, each 1 mark) (3)

Alt:

— (a) Safe, continuous flow, no waiting time, no delays, low operating costs.

— (b) Slow in heavy traffic, causes road damage, high maintenance costs, contributes to congestion, not suitable for very heavy/bulky goods over long distances.

13. (a) Give two examples of invisible trade in Kenya. (b) Explain two ways in which trade promotes economic development. (c) Identify two barriers to trade between Kenya and other African countries. (6 marks)

- (a) Examples of invisible trade: tourism (1 mark), banking (1 mark). (Accept any two, each 1 mark) (2)
- (b) Ways trade promotes economic development: creates employment (1 mark), earns foreign exchange (1 mark). (Accept any two, each 1 mark) (2)
- (c) Barriers to trade between Kenya and other African countries: tariffs and customs duties (1 mark), poor infrastructure (1 mark). (Accept any two, each 1 mark) (2)

Alt:

- (a) Insurance, transport services, banking, remittances.
- (b) Stimulates industrialization, provides market for goods, encourages specialization, promotes technology transfer.
- (c) Non-tariff barriers such as bureaucracy, political instability, different currencies, language differences, inadequate trade agreements.

14. (a) Give the meaning of bearing. (b) A hill is located 5 km north-east of a school. Determine the bearing of the hill from the school. (c) The scale of a map is 1:25,000. A rectangular forest measures 4 cm by 3 cm on the map. Calculate the actual area of the forest in hectares. (6 marks)

- (a) Bearing is the angle measured clockwise from true north to a point, expressed in degrees. (1 mark) (1)
- (b) North-east corresponds to 045° , so the bearing of the hill from the school is 045° . (1 mark) (1)
- (c) Scale conversion: $1 \text{ cm} = 25,000 \text{ cm} = 250 \text{ m}$. (1 mark) (1)
- (c) Ground length = $4 \times 250 = 1000 \text{ m}$; width = $3 \times 250 = 750 \text{ m}$. (1 mark) (1)
- (c) Area = $1000 \text{ m} \times 750 \text{ m} = 750,000 \text{ m}^2$. (1 mark) (1)
- (c) Convert to hectares: $750,000 / 10,000 = 75 \text{ ha}$. (1 mark) (1)

Alt:

- (b) Bearing = 045° or 45° (if drawn accurately).
- (c) Using area scale directly: $1 \text{ cm} = 0.25 \text{ km}$, so $4 \text{ cm} = 1 \text{ km}$, $3 \text{ cm} = 0.75 \text{ km}$; area = $1 \times 0.75 = 0.75 \text{ km}^2 = 75 \text{ ha}$.

15. (a) Give two effects of water pollution on human health. (b) Explain two measures that can be used to reduce water pollution in Lake Nakuru. (6 marks)

- (a) Effects of water pollution on health: waterborne diseases such as cholera and typhoid (1 mark), poisoning from toxic chemicals (1 mark). (Accept any two, each 1 mark) (2)

■ (b) Measure 1: Treating industrial effluents before discharge (1 mark).

Explanation: This reduces the amount of toxic chemicals and organic waste entering the lake, preventing eutrophication and health hazards. (1 mark) (2)

■ (b) Measure 2: Enforcing laws against dumping waste into the lake (1 mark).

Explanation: This deters polluters and ensures that pollution is prevented at the source, protecting the lake's ecosystem and water quality. (1 mark) (2)

Alt:

— (a) Skin diseases, typhoid, hepatitis, reproductive problems.

— (b) Constructing sewage treatment plants, banning phosphates in detergents, promoting riparian buffer zones, public education on water conservation and pollution prevention.

16. (a) Give three factors that promote trade in East Africa. (b) Explain how the East African Community (EAC) promotes trade among member states. (6 marks)

■ (a) Factors promoting trade in East Africa: common language/culture (1 mark), good transport links (1 mark), availability of different resources (1 mark). (Accept any three, each 1 mark) (3)

■ (b) EAC promotes trade through: elimination of tariffs among member states (1 mark), free movement of goods and services (1 mark), harmonized trade policies (1 mark). (Accept any three, each 1 mark) (3)

Alt:

— (a) Peace and stability, population size, regional integration, common currency.

— (b) Common external tariff, establishment of a common market, cooperation in infrastructure development, reduction of non-tariff barriers, joint trade negotiations.

17. (a) Name two modes of transport commonly used by tourists traveling from Kenya to Europe. (b) Explain three challenges facing sea transport at Mombasa port. (6 marks)

■ (a) Modes of transport commonly used by tourists from Kenya to Europe: air transport (1 mark), sea transport (1 mark). (Accept any two, each 1 mark) (2)

■ (b) Challenges facing sea transport at Mombasa port: congestion (1 mark), outdated equipment (1 mark), delays in clearing cargo (1 mark). (Accept any three, each 1 mark) (3)

■ (b) Explanation of one challenge in detail: e.g., congestion leads to longer turnaround times, increased costs, and delays in cargo delivery, affecting trade efficiency. (1 mark) (1)

Alt:

— (a) Cruise ships (for water transport), rail (for regional tourists).

— (b) High cost of operations, bad weather, competition from other ports, draft limitations for large vessels, inefficiency from customs clearance.

18. (a) Name two types of drainage patterns found on a topographic map. **(b)** Describe how contour lines are used to identify a steep slope. **(c)** A map has a scale of 1:50,000. A cycling track on the map measures 15 cm. Calculate the actual length of the track in kilometres. (7 marks)

- (a) Drainage patterns: dendritic (1 mark), trellis (1 mark). (Accept any two, each 1 mark) (2)
- (b) Contour lines that are very close together indicate a steep slope. (1 mark for close spacing, 1 mark for interpretation) (2)
- (c) Scale conversion: 1 cm = 50,000 cm = 0.5 km. (1 mark) (1)
- (c) Actual length = $15 \times 0.5 = 7.5$ km. (1 mark) (1)
- (c) Final answer: 7.5 km. (1 mark) (1)

Alt:

- (a) Radial, rectangular, annular.
- (b) Steep slopes have contours spaced close together; the steeper the slope, the closer the contours.
- (c) Using ratio: 1:50,000 means 1 cm = 0.5 km; 15 cm = $15 \times 0.5 = 7.5$ km.

SECTION III

19. Discuss four factors that have contributed to the development of trade in Kenya. (10 marks)

- Factor 1: Natural resources – Kenya's diverse climate and soils support agriculture for export (e.g., tea, coffee). (2 marks: 1 for factor, 1 for explanation/example) (2)
- Factor 2: Good transport network – Roads, railways, ports, and airports facilitate movement of goods to local and international markets. (2 marks: 1 for factor, 1 for explanation) (2)
- Factor 3: Tourism – Attracts foreign exchange and promotes trade in hospitality and services. (2 marks: 1 for factor, 1 for explanation) (2)
- Factor 4: Government policies – Liberalization of trade, export processing zones, and support to SMEs boost trade. (2 marks: 1 for factor, 1 for explanation) (2)
- Additional mark(s) for well-illustrated Kenyan examples or any other valid factor (e.g., population growth, technology). (Up to 2 marks) (2)

Alt:

- Factors may be: regional integration (EAC/COMESA), population growth, technology (M-Pesa), peace and stability.
- Each factor should be clearly explained with a Kenyan context for full marks.

20. Explain four ways in which transport promotes economic development in Kenya. (10 marks)

- Way 1: Facilitates movement of goods and services – Connects producers to markets, expanding trade. (2 marks: 1 for way, 1 for explanation) (2)

- Way 2: Creates employment – Provides jobs in transportation (drivers, pilots, dock workers) and related industries. (2 marks: 1 for way, 1 for explanation) (2)
- Way 3: Promotes tourism – Efficient transport systems attract tourists, earning foreign revenue. (2 marks: 1 for way, 1 for explanation) (2)
- Way 4: Encourages industrialization – Moving raw materials to factories and finished goods to markets. (2 marks: 1 for way, 1 for explanation) (2)
- Additional mark(s) for giving specific Kenyan examples (e.g., Mombasa port, Jomo Kenyatta International Airport) or a well-integrated conclusion. (Up to 2 marks) (2)

Alt:

- Ways may also include: opening up remote areas, facilitating international trade (exports/imports), encouraging specialization.
- Each way should be explained with clear reasoning for full marks.

21. Describe four effects of air pollution on human health and four control measures that can be taken to reduce air pollution in Kenya. (10 marks)

- Effect 1: Respiratory infections (e.g., bronchitis, asthma). (1 mark) (1)
- Effect 2: Cardiovascular diseases. (1 mark) (1)
- Effect 3: Lung cancer. (1 mark) (1)
- Effect 4: Eye irritation and allergies. (1 mark) (1)
- Control measure 1: Use of clean energy sources (solar, wind) and clean fuels. (1 mark) (1)
- Control measure 2: Emission standards for vehicles and industries. (1 mark) (1)
- Control measure 3: Planting trees (afforestation and reforestation). (1 mark) (1)
- Control measure 4: Use of filters and electrostatic precipitators in factories. (1 mark) (1)
- Award 2 marks for a detailed explanation of any one effect and one control measure in the Kenyan context (e.g., effect of air pollution in Nairobi, control measures taken by NEMA). (2 marks) (2)

Alt:

- Effects: premature death, damage to nervous system, aggravation of asthma.
- Control measures: strict enforcement of environmental laws, promoting public transport, non-motorized transport, reducing open burning of waste.

22. Explain how a map can be used to describe the relief and drainage of an area. (10 marks)

- Relief: Contour lines show altitude; spacing indicates steepness (close contours = steep, wide = gentle). (1 mark) (1)
- Relief: Closed contours indicate hills or depressions; V-shapes indicate valleys or spurs. (1 mark) (1)

- Relief: Spot heights and trigonometrical points give exact heights and help identify peaks. (1 mark) (1)
- Relief: Gradient can be calculated using vertical interval and horizontal distance. (1 mark) (1)
- Relief: Contour patterns indicate landforms such as plateaus, ridges, and basins. (1 mark) (1)
- Drainage: Rivers, lakes, swamps are shown in blue; their presence indicates drainage. (1 mark) (1)
- Drainage: Drainage patterns (dendritic, trellis, radial) reveal rock structure and relief. (1 mark) (1)
- Drainage: Direction of stream flow can be determined from contours (V-shape points uphill) and the order of streams. (1 mark) (1)
- Drainage: Density of streams indicates permeability of rocks and rainfall amounts. (1 mark) (1)
- Drainage: The source and mouth of a river can be identified using contour heights and river direction. (1 mark) (1)

Alt:

- Relief: Use of layer tinting/spot heights on maps.
- Drainage: Use of blue symbols, named rivers, and contour V-shapes to determine drainage direction.
- Candidates may structure the answer by explaining relief first then drainage, or integrate both.