312/2
GEOGRAPHY
PAPER 2
FORM 3
SEPTEMBER, 2021
TIME : 2 3/4 HOURS.

- This paper has TWO sections; A and B.
- Answer ALL the questions in Section A.
- Answer Question 6 and any other TWO questions from Section B.
- ALL answers must be written in the spaces provided.
- Students should check the question paper and ascertain that all the pages are printed as indicated and that no question is missing.
- Students should answer the questions in English.

SECTION A.

Answer ALL the questions in this section.

1 a) What is practical Geography? (2mks)

- This is the study of practical skills which enhance the understanding and interpretation of geographical phenomena

b) State THREE practical aspects we study in Geography. (3mks)

- Maps and Map reading / Maps and Map work.
- Photograph work.
- Field work.
- Statistical methods.

2. Identify FIVE activities that may be undertaken in your school to conserve trees. (5mks)

- Start tree planting days in the school calendar.
- Establish tree nurseries to raise seedlings.
- Start environmental or tree planting clubs to create awareness on tree conservation.
- Use alternative sources of energy
- Use energy saving jikos
- Taking care of young trees through mulching and watering.
- Control tree pests and diseases.

3. Outline the advantages of using photographs in learning geography. (5mks)

- Photographs show actual objects as they appear.
- Photographs record things/objects in real time.
- Photographs can be used to show historical facts and changes that have occurred.
- Unfamiliar features can be seen on photographs and be used in learning.
- Photographs may carry alot of information
- Photographs are an attractive and an interesting way of learning geography.

4a) Name THREE major categories of minerals. (3mks)

- metallic minerals.
- Non-metallic minerals.
- Energy minerals

b) Give TWO examples of fossil fuels. (2mks)

- Petroleum / crude oil
- Natural gas
- Coal.

5.a) What is Agro-forestry? (2mks)

- A land use system that involves planting of trees, crops and keeping livestock on the

same unit of land.

b) State THREE reasons for encouraging agro-forestry in Kenya. (3mks)

- To maximize land use
- To conserve the land and protect it from erosion or increase water retention on land.
- To provide raw materials for industries.
- To conserve forests
- Leaf litter decomposes and adds humus to the soil
- Some Trees have medicinal values
- Some Trees provide fodder for animals
- Trees act as wind breakers and shade for young plants.

SECTION B.

Answer Question 6 and any other TWO Questions in this section.

6. a) The table below shows land use in Nairobi area in 2003. Use it to answer questions that follow.

Land use	Area in '000 Km²	Length of Portions in Cm
Settlement	110	
Grass	30	
Horticulture	50	
Forest	10	
TOTAL	200	

i) Calculate the length of each portion in the divided bar graph. (4mks)

- Settlement. $\frac{110}{200} \times 10 = 5.5\text{cm}$

- Grass. $\frac{30}{200} \times 10 = 1.5\text{cm}$

- Horticulture. $\frac{50}{200} \times 10 = 2.5\text{cm}$

- Forest. $\frac{10}{200} \times 10 = 0.5\text{cm}$

ii) Use the above data to draw a divided bar

graph. The length of the bar should be 10 cm. (6 marks)

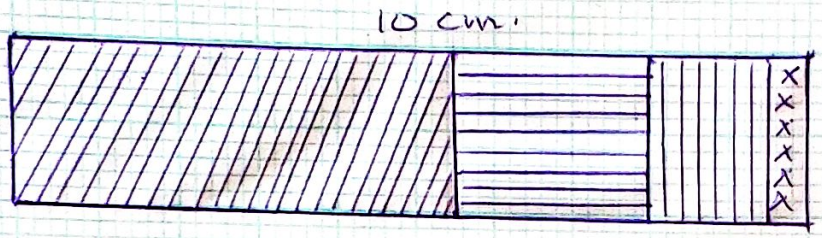
iii) Analyse and interpret the drawn divided bar graph. (4 marks)

- Settlement covered more than half of Nairobi area in 2003.
- The second largest area was covered by horticultural farming.
- Forest covered the least area.
- The rest of the area was covered by grass.

b). What are the advantages of using divided bar graphs in the presentation of statistical data? (5 marks)

- Comparison of variables can be made with ease.
- A wide range of data can be represented.
- Gives a clear visual impression of individual components.
- Easy to read because of the descending order of the arrangement.
- Easy to draw.
- Covers less space.

6 a) ii) DIVIDED BAR GRAPH SHOWING LAND USE IN NAIROBI AREA IN 2003.



KEY

Settlement

Grass

Horticulture

Forest

c) i) Name the Two types of statistical data. (2mks)

- Primary data
- secondary data.

ii) Give FOUR characteristics of statistical data. (4mks)

- Discrete data - ie statistics given as whole numbers.
- Individual data - ie exact ~~data~~ value is given for each item in a sample range.
- Continuous data - ie statistics given in any value
- Grouped data - ie no exact figures are quoted, but values are ranges in groups.

7. a) i) what is mining? (2mks)

- This is the process of extracting valuable minerals that occur on or below the earth's crust.

ii) Why is mining termed as a 'robber' industry? (2mks)

- Through mining, the minerals get depleted, they cannot be regenerated and mining

operations cause many negative environmental effects resulting in dereliction of land.

b) Identify THREE factors that influence occurrence of minerals. (3mks)

- Vulcanicity
- Rock metamorphism
- Denudation or weathering and erosion
- Folding / faulting
- Evaporation
- Deposition / sedimentation.

c) Explain how the following factors influence the exploitation of minerals.

i) mode of occurrence of minerals (3mks)

- Determine method of mining and the cost of extraction.
- minerals at shallow depths are easier and cheaper to extract, while deep seated minerals are expensive to mine.
- minerals close to the surface in layers, beds and seams are extracted using open cast/ placer mining methods, while minerals found deep underground in veins and lodes are extracted using shaft method.

(ii) Level of technology or skills. (4mks)

- Advanced technology improves mining operations, leading to high quality/quantity production of mineral products.
- Low level technology limits level of mineral exploitation and low quantities
- High level technology allows effective exploration leading to accurate location of minerals
- Advanced technology promotes effective mineral production reducing wastage.
- High level technology reduces the destruction of the environment.

d)(i) Explain THREE problems associated with the shaft method of mining. (6mks)

- Sometimes the mines get flooded with underground water which stops mining.
- Emissions of poisonous gases may occur in the mines, which is a health hazard to animals, plants and miners / people.
- The dust produced through blasting in the mines may cause respiratory diseases.
- Underground tunnels may collapse resulting in death of miners.

ii) Apart from shaft method of mining, name THREE other methods of underground mining. (3mks)

- Solution method
- Adit / Drift method
- Drilling.

8 a) Distinguish between:

i) Forestry and a forest. (2mks)

- Forestry is the science of planting, caring or managing and the exploitation of forests and forest resources whereas a forest is a continuous growth of trees and undergrowths covering a large tract of land.

ii) Afforestation and re-afforestation. (2mks)

- Afforestation is the planting of trees in an area which has had no forests / establishment of new forests whereas re-afforestation is the planting of trees in an area where they have been cut down.

b) Apart from Coniferous forests, name FIVE other types of natural forests. (5mks)

- Equatorial forests / Tropical Hardwoods.
- Tropical monsoon forests.
- Temperate Hardwoods / Temperate evergreen forests.
- Mangrove forests.

- Mediterranean forests
- Temperate deciduous forests
- Mixed forests

c) List FIVE factors that influence the distribution of forests in Kenya. (5mks)
variation in
- Altitude.
- Temperature variations
- Soil type, texture and structure.
- Human activities
- Government policy
- Amount of precipitation

d) i) Explain THREE factors that favour the growth of natural forests on the slopes of Mt. Kenya. (6mks)

- High rainfall throughout the year for Continuous growth of Trees.
- Deep, well drained volcanic soils that allow roots to penetrate deep into the ground for proper support of Trees
- Moderate to high temperature / cool to warm conditions that allow growth of a variety of trees.
- Steep, rugged slopes that discourage settlement and cultivation thus allowing forest growth
- Gazetted forest reserves where settlements and cultivation are prohibited allowing forests to grow.

ii) Outline the steps taken in forest exploitation. (5mks)

- Licenses are obtained from the forestry department
- Forest camps are established and workers taken to the forest
- Trees to be cut are marked selectively.
- Trees are cut using simple power saws.
- Logs are hauled by Tractors to the central area
- Logs are loaded on Trucks and taken to factories/saw mills

9 a) Use the map of East Africa below showing the distribution of major minerals to answer the question that follows.

Name the major minerals mined in the areas marked A - F. (6mks)

- A - Copper
- B - Oil
- C - Iron
- D - Titanium
- E - Diamond
- F - Gold.

b) Give reasons why coal in Tanzania is underexploited. (5mks)

- Inadequate capital to invest in its exploitation
- Low market demand for coal.
- Deposits found far in remote areas with poor transport networks.
- There are cleaner alternative sources of energy which have been developed
- Poor quality coal / Small coal reserves.

c) Explain THREE negative effects of mining to the environment. (6mks)

- Dumping of rock waste leads to loss of biodiversity
- Dereliction of land due to dumping of waste and scars which are an eyesore that destroys the natural beauty of land.
- Open scars expose land to soil erosion and soil degeneration.
- Pollution by noisy blasts, smoke, dust and waterpools that are a health hazard.
- Underground mining disrupts/lowers the water table which may lead to water shortage.

d)i) Give THREE uses of Soda ash. (3mks)

- Used in glass making
- Used in making detergents and soaps
- For petroleum refining
- As a water softener/water treatment

- Used in desulphurising steel
- For paper Smoothening in paper making
- In manufacture of textiles
- In production of salts.

ii) Name FIVE major oil producing countries in Africa. (5mks)

- Libya
- Tunisia
- DRC
- Nigeria
- Angola
- Tunisia
- Sudan (North and South)
- Egypt
- Algeria
- Morocco
- ~~GA~~ Gabon.

10. a) The map of Kenya below shows some forested areas. Name the forest reserves marked a - h. (8mks)

a. Boni/Dodori forest
b. Arabuko Sokoke forest
c. Mt. Kenya forest.
d. Aberdare forest
e. Mau forest.
f. Cherangani forest
g. Kakamega forest
h. Mt. Elgon forest.

b) State FIVE ways in which clearing of forests has affected the natural environment in Kenya. (5mks)

- Reduced water volume in rivers / drying up of some rivers
- Has led to changes in rainfall patterns and desertification
- Has interfered with environmental beauty
- Has disrupted the ecosystem
- Has accelerated soil erosion
- Destruction of natural habitats for wildlife that has endangered some wildlife species

c) i) Name THREE softwood tree species grown in

forests of Canada. (3mks)

- Spruce
- Douglas fir
- White pine

ii) Give characteristics of softwood forests of Canada, (5mks)

- Trees are conical
- Trees are light in weight
- Trees occur in pure stands
- Trees are softwoods.
- Trees are tall and straight
- Trees have needle like leaves
- Trees bear cones
- Forests are evergreen
- Have little or no undergrowth.
- Trees have thick waxy barks
- Trees have shallow root systems that spread widely.
- Trees take long to mature due to long cold winters.

d) Give the differences between softwood forests in Kenya and Canada under the following sub-headings:-

i) Period of harvesting. (2mks)

- In Canada logging is done in winter

and early spring while in temperate countries it is due to drought in the year.

ii) Period of growth. (2 mks)

- In tropical rain forests there is rapid growth due to the cold climate while in temperate rain forests growth is slow due to the warm tropical conditions.