KANGUNDO CLUSTER
GEOGRAPHY

312/1

FORM FOUR TERM TWO CLOSING EXAM 2021.

SECTION A. **Answer all the questions.**

1. (a) What is a Stevenson screen? **(2 mks)**
(b) Name **two** forms of precipitation that commonly occur in Kenya **(2 mks)**
2. (a) State **three** characteristics of the crust **(3 mks)**
(b) Give **three** reasons why the intensity of insolation is higher at equator than at Polar Regions. **(3 mks)**
3. (a) Identify **two** theories used to describe the origin of Fold Mountains. **(2 mks)**
(b) Give **three** effects of Fold Mountains on climate. **(3 mks)**
4. (a) Name **two** types of earth movements that occur within the earth's crust**.** **(2 mks)**
(b) Name **three** tectonic plates **(3 mks)**
5. (a) Define faulting **(2 mks)**
(b) State **three** effects of faulting on human environment **(3 mks)**

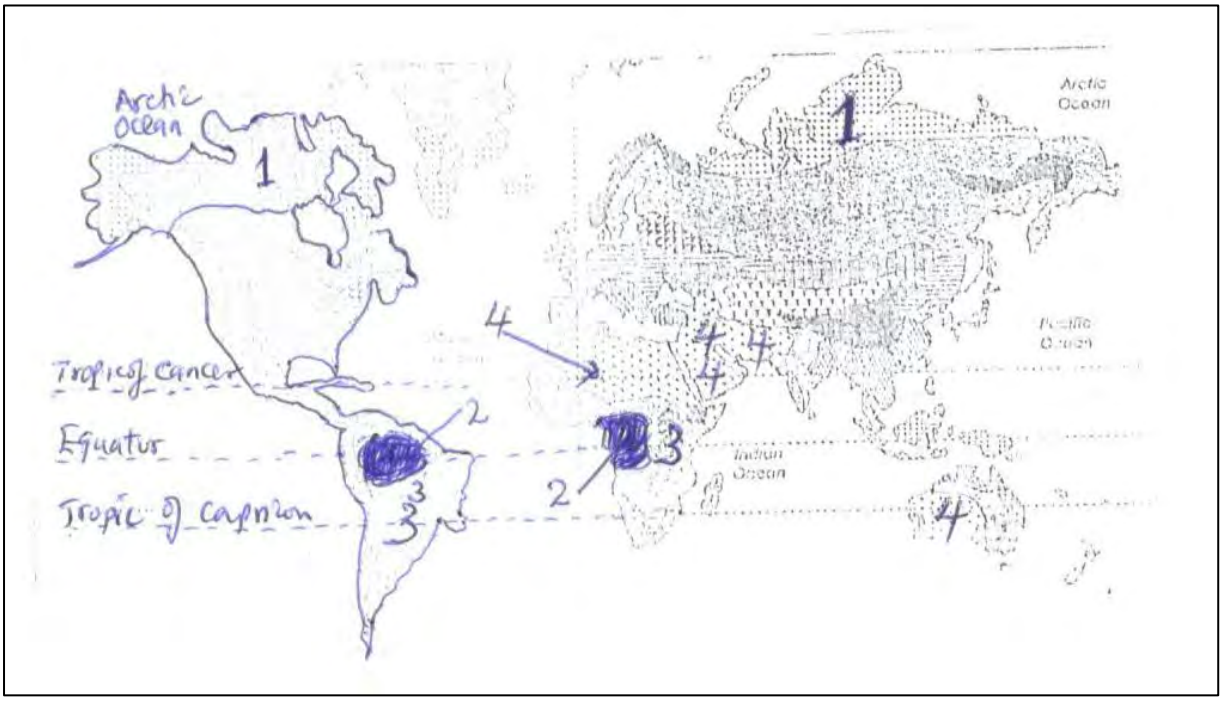
SECTION B
Answer question 6 and any other TWO questions from this section.

6. Study the map of Kijabe 1:50,000 (sheet 134/3) provided and answer the following questions.
(a) (i) What type of map is KIJABE map extract? **(1 marks)**
(ii) Give the six-figure grid reference of the cattle dip near Kenton. **(2 marks)**
(iii) Give the longitudinal extent of the area covered by the map **.** **(2marks)**
(b) (i) Calculate the area to the south of the power line. Give your answer in square kilometers **(2 marks)**
(ii) Describe settlement distribution in the area covered by the map. **(6 marks)**

(c) Explain **three** factors favoring cattle rearing in the area covered by the map. **(6 marks)**
(d) (i) Draw a square 10cm by 10 cm to represent the area enclosed by Eastings 30 and 40 and northings 90 and 00. **(1 marks)**
(ii) On it mark and label: **(3 marks)**
– A railway line.
– Bamboo forest.
– A borehole.
(iii) What is the new scale of the square. **(2marks)**

7. a) Define the term Vulcanicity? **(2mks)**
b) Distinguish between extrusive and intrusive vulcanicity **(4mks)**
c) Give any **three** resultant features due to intrusive vulcanicity **(3mks)**
d) Describe the continental drift theory **(6mks)**
e) i) State **two** human causes of earth movements **(2mks)**
ii) Explain any **four** **negative** significances of vulcanicity to human activities. **(8mks)**

8 (a) Define the term vegetation. **(1 mk)**
(b) Explain how the following factors influence the distribution of vegetation.
(i) Aspect **(2 mks)**
(ii) Relief **(4 mks)**
(c) The map below shows world vegetation zone



Name vegetation type marked 1, 2, 3 and 4. **(4 mks)**

(d) Explain **four** ways in which trees in coniferous forests are adopted to the climatic conditions. **(8 mks)**

(e) A form four Geography class is planning to carry out a field study in Kakamega forest.

(i) State how they would use the following tools during the study.

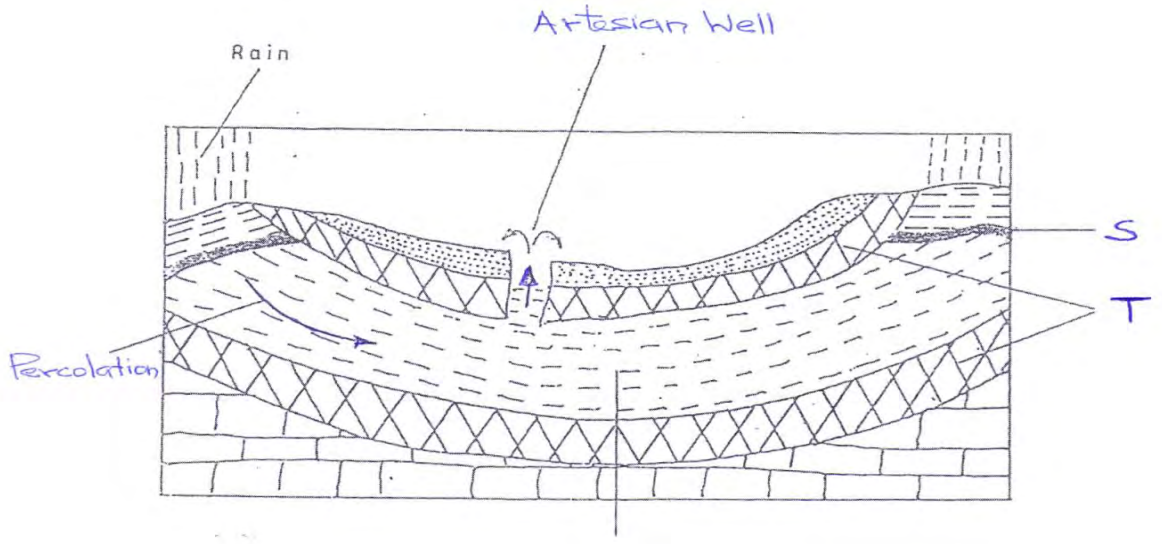
a. A tape recorder **(1 mk)**

b. A camera **(1 mk)**

(ii) Give **four** methods they would use to collect the data during the study. **(4 mks)**

9. a) State three factors necessary for the development of Karst scenery. **(3mks)**

b. The diagram below shows an Artesian Basin. Use it to answer the question (i) and (ii).



i) Name the parts marked S and T. **(2mks)**

ii) State three ideal conditions for the formation of an artesian well. **(3mks)**

iii) Explain how a Doline is formed. **(5mks)**

c) i) Give reasons why some lakes are fresh. **(3mks)**

ii) Describe how a tarn is formed. **(5mks)**

d) Explain two negative effects of lakes. **(4mks)**

10 . (a) Distinguish between valley glaciers and ice sheets **(2 mks)**

(b) Name **two** mountains in East Africa where glaciers are found. (**2marks)**

(c) Describe how each of the following glacial features are formed

(i) An arête **(4marks)**

(ii) Pyramidal peak **(4marks)**

(d) Explain **three** benefits of glaciated landscape to man. **(6marks)**

(e) You are required to carry out a field study on erosional features in glaciated lowland area

(i) Give **two** reasons why you would require a working schedule. (**2marks)**

(ii) Name **two** erosional features you are likely to observe during the field study **(2marks**)

(iii) Give **three** follow up activities you would undertake after the field study. **(3marks)**

KANGUNDO CLUSTER
312/2
GEOGRAPHY PAPER 2

1. **a)** List any **three** factors that influence agriculture (3mks)

b) State two factors that favour mechanization of wheat farming in Canada (2mks

2. a) State any **three** reasons why marine fisheries in Kenya underdeveloped (3mks)

b) Give **two** ways through which fish farming contributes to the economy of Kenya (2mks)

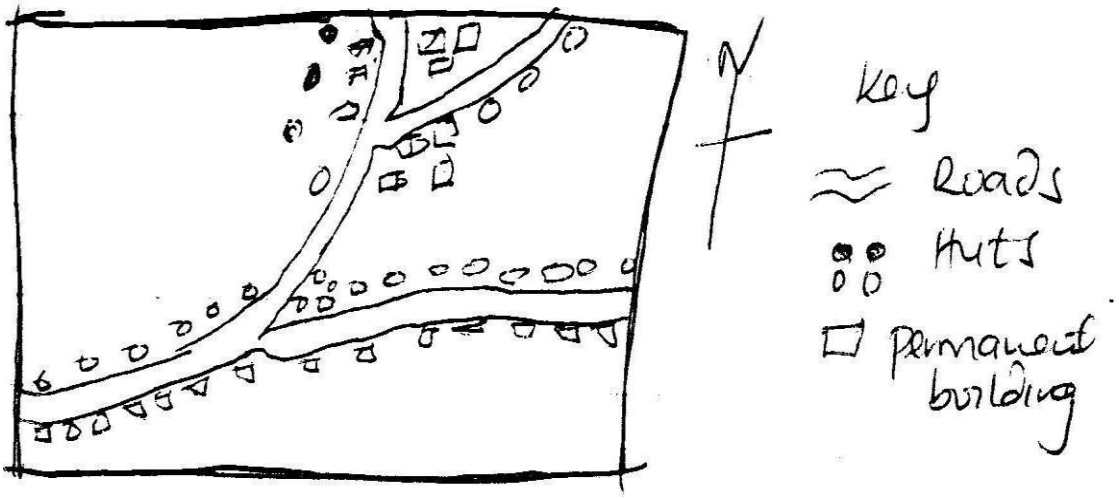
3 a) Name **two** conditions that are necessary for the formation of crude oil (2mks)

b) List **three** ways in which open cast mining affects the environment (3mks)

4 a) Apart from desertification, name two other environmental hazards experienced in Kenya (2mks)

b) Name any t**hree** ways that can be used to combat floods (3mks)

5 a) Study the sketch map below and answer the questions that follows



a) Identify **two** settlement pattern represented by the sketch map (2mks

b) **State three** causes of rural to rural migration (3mks

SECTION B

Answer question 6 and any other two questions from this section

6 The table below shows some of Kenya's imports and exports in 1987. Use it to answer question (a) and (b).

Imports in Tonnes		**Exports in Tonnes**	
Item	**Weight**	**Item**	**Weight**
Sugar	99,000	Coffee	316,000
Iron and steel	300,000	Tea	159,000
Fertilizer	84,000	Maize	259,000
Coal	105,000	Soda ash	150,000
Wheat	125,000	Cement	225,000
TOTAL	713,000		1,109,000

a) Using a radius of 4cm, draw a pie-chart to represent the data of import shown in the table above (8mks

ii) State t**hree** advantages of using pie-charts to represent statistical data (3mks

b) Explain why Kenya imports sugar and wheat yet she is a producer of the same commodities (6mks

c) Explain four factors that limit importation and exportation of goods into and out of Kenya (8mks

7 a) Name **three** types of industries located in the Ruhr region of Germany other than iron and steel (3mks

b) Explain any **four** factors which led to the growth of Iron and Steel industry in Ruhr region of Germany (8mks

c) Explain any f**our** ways in which Kenya has benefited by assembling motor vehicles locally (8mks

d) Describe t**hree** problems that are experienced in Kenya as a result of industrial development (6mks

8 a) Name any **four** sources of energy other than water (4mks

b) List **five** factors that favour location of hydroelectric power plant (5mks

c) Explain **four** ways in which Kenya has benefited from the development of the seven forks hydroelectric power scheme (8mks

d) Explain f**our** problems that Kenya faces as a result of over dependence on petroleum(8mks

9 a) State t**hree** physical conditions necessary for growing of sugarcane (3mks

b) Describe the commercial production of sugarcane from

i) Land preparation to harvesting

ii) Processing to the marketing of sugar (8mks

d) Geography students conducted a field study at Mumias sugar factory

i) Identify two methods they used to collect data (2mks

ii) Explain three problems they identified that are facing sugar cane farmers in Kenya (6mks

10 a) Distinguish between transport and communication (2mks

b) Name **three** products transported by pipeline (3mks

c) Explain why there are few railway lines among African countries (6mks

d) Explain **three** ways in which Kenya has benefited from her international airport (6mks

e) Explain **four** problems facing transport and communication in Africa (8mks

KANGUNDO CLUSTER
GEOGRAPHY PAPER 1
MARKING SCHEME

SECTION A

1. (a) What is a Stevenson screen? (2 marks)
It is a white wooden box in which meteorological instruments are kept at a weather station.

(b) Name two forms of precipitation that commonly occur in Kenya (2 marks)
- Rain
- Hail
- Dew
- Fog/mist (Any 2 X1 = 2marks)

2. **(a) State three characteristics of the crust (3 marks)**
- Rocks are generally brittle.
- Extends between 6 to 80km.
- Divided into two layers, continental crust/sial and sima/oceanic crust
- Sima contains silica, magnesium and iron
- Sial contains silica and aluminum
- Sial is lighter than sima/ has density of 2.65 to 2.70 g/cc
- Sima is heavier than sial/ has density of 2.7 to 3.0g/cc
- Sial rest on sima
- Sial has mainly basaltic rocks
- Sima is fairly flexible. (Any 4 X 1 = 4 marks)

(b) Give three reasons why the intensity of insolation is higher at equator than at Polar Regions. (3 marks)

- The sunrays are received at right angle hence spread over a small area within the equator
- The sun rays travelled a shorter distance with few obstacles hence less heat is lost within the equator.
- The sun is virtually overhead along the equator throughout the year.
(Any 2 X 1 =2 marks)

3. **(a) Identify two theories used to describe the origin of Fold Mountains. (2 marks)**
- Conventional Currents Theory
- Continental Drift Theory
- Plate Tectonics Theory
- Contraction Theory

(b) Give three effects of Fold Mountains on climate. (2 marks)
- The slopes of mountains facing the sun receive direct sunshine or are warmer than slopes facing away from the sun.
- Mountain slopes causes the development of local winds due to variation in pressure between the mountain and the valley.
- The windward slopes of mountains receive high rainfall due to orographic effect.
- Atmospheric pressure reduces with increasing altitude along mountain slope/increases with decreasing altitude.
- Temperature decreases with increasing altitude/increases with decreasing altitude
- Mountain tops experiences mist/fog or snow due to very low temperatures.
(Any 3 X 1 = 3 marks)

4.
(a) Name two types of earth movements that occur within the earth's crust. (2 marks)
- Horizontal/lateral/orogenic movement
- Vertical/epeirogenic movement

(b) Name three tectonic plates (3 marks)
- Eurasian plate
- Australian plate

- African plate
- North American plate
- South American plate
- Pacific plate
- Antarctic plate

5.

(a) Define faulting **(2 marks)**

Faulting refers to the breaking/fracturing of crustal rocks due to tectonic forces.

(b) State three effects of faulting on human environment **(3 marks)**

- Faulting may lead to destruction of properties in built up areas.
- Faulting may change the drainage pattern leading to disappearance of rivers into the fault causing shortage of water for domestic
- Faulting lead to loss of life when it occurs in built up places.
- Features formed promote tourism.
- Windward sides of Block Mountains promote forestry/crop growing.
- Escarpments make expensive to construct roads/railways.
- Faulting exposes minerals making easy to extract. (Any 3 X 1 = 3 marks)

SECTION B

Answer question 6 and any other TWO questions from this section.

6. (a) (i) What type of map is KIJABE map extract? **(1 marks)**

- A topographical map.

(ii) Give the six figure grid reference of the cattle dip near Kenton. (2 marks)

- 279014

(iii) Give the longitudinal extent of the map. **(2 marks)**

- From $36^0$30'E to $36^0$45'E

(b) (i) Calculate the area to the south of the power line. Give your answer in km². (2 marks)

Full squares: 16

Half squares: 28

Total: 16+14= 30km² (+- 0.5km²)

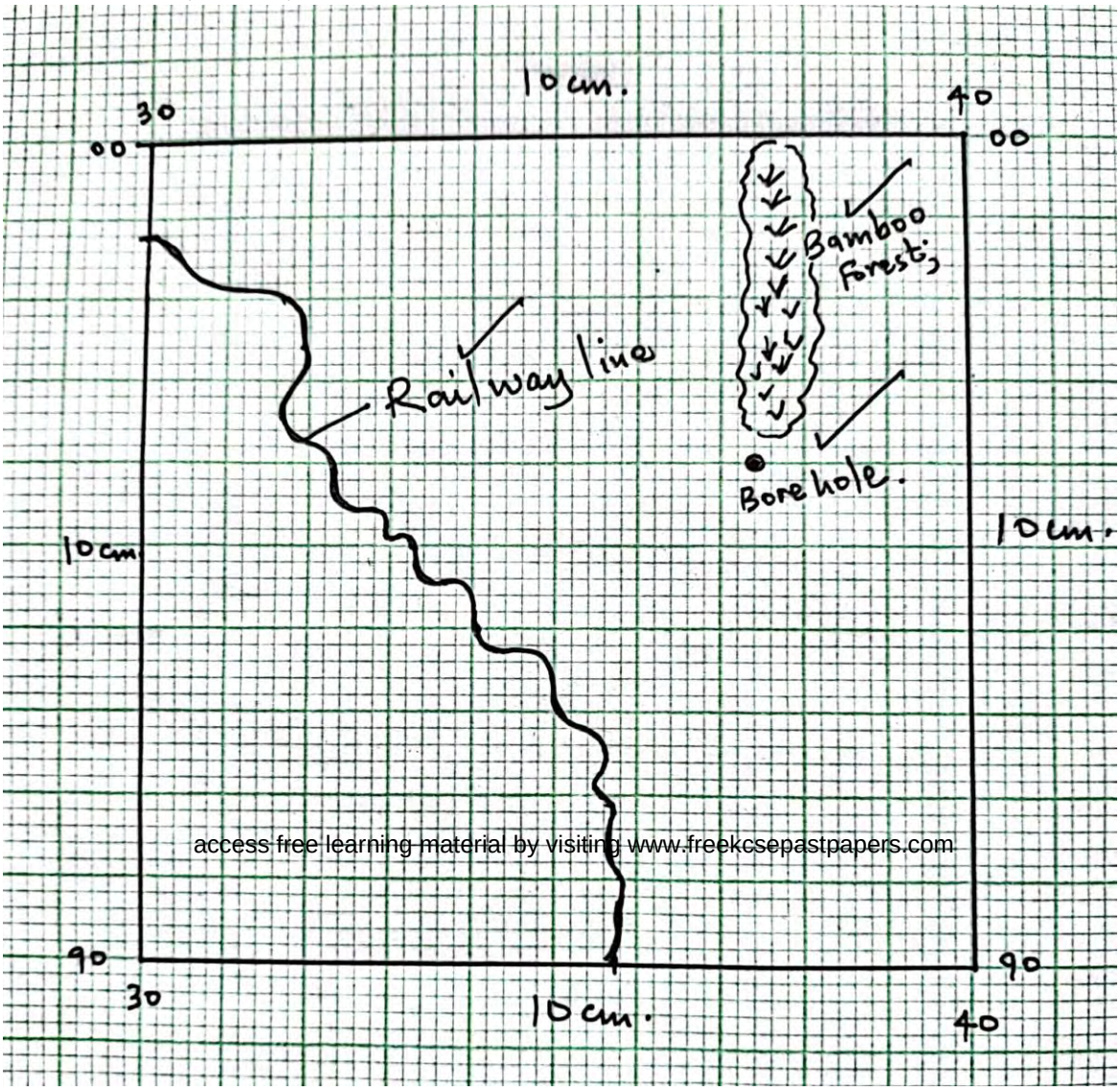
(ii) Describe settlement distribution in the area covered by the map. **(5 marks)**

- There are no settlement within the Ewaso Kedong valley
- There are nucleated settlement in the markets/shopping centres/villages
- Some areas with steep slopes /ridges /river valleys have fewer /no settlement
- There are fewer settlement within the forest
- Kinale/Kinari forest station has dense settlement
- There are no settlement within the plantations
- There are few settlements to the west of Naivasha-Narok road
- The area covered by the map is generally sparsely settled
- There are linear settlement along some roads in the area covered by the map

c) Explain three factors favoring cattle rearing in the area covered by the map. (6 marks)

- The presence of scrub and scattered trees show that there is natural pasture for cattle
- The presence of many rivers/sources of water show that there is adequate water for cattle
- The area has high altitude/above 1000m which provide cool conditions suitable for cattle rearing
- The many cattle dips for treatment show that there is access to veterinary services
- There are large tracts of land with few settlements ensuring extensive areas available for grazing
- Availability of transport as shown by roads/railway for movement of cattle/cattle products
- Dense settlement to provide market for cattle/cattle products

(d) (i) Draw a square 10cm by 10 cm to represent the area enclosed by Eastings 30 and 40 and northings 90 and 00. (2 marks)



(5 marks)

- A railway line.
- A bamboo forest.
- A borehole.
  (Reduction 2 marks, features 3 marks,).

Nb : No arrows pointing to the features from outside the sketch. features should strictly be labeled inside the sketch or otherwise use a key

iii) **new scale of the square**
1/50000 ÷ 2 = 1: 100,000
New scale of the reduced area is 1:100,000

7.

a) **Define Vulcanicity** **(2mks)**

- All various ways by which solid liquid and gaseous materials are forced into earth's crust and its surface.(Award any other relevant answer starting with the process.)

b) Distinguish extrusive and intrusive vulcanicity **(4mks)**

- Extrusive vulcanicity is the process where the materials actually break through the surface of the earth in a volcanic eruption while Intrusive vulcanicity is the process where the material does not have enough strength to break through the surface of the earth.

c) Three resultant features due to intrusive vulcanicity (3mks)

- Sill
- Dykes
- Laccoliths
- Batholiths
- Lopoliths
- Phacoliths

d) Continental drift theory (6mks)

- The world was one called Pangea.
- Pangea was surrounded by a large water body called Panthallassa
- Pangea broke into two namely the Godwanaland and Laurasia.
- Godwanaland and Laurasia were separated by a long water body called Tethys.
- Godwanaland drifted to the south and ruptured giving continents such as South America, Africa Australia among others.
- Laurasia drifted to the North and ruptured giving continents such as Eurasia, North America among others.

e)

i) two human causes of earth movements (2msk)

- Explosion especially in quarrying sites
- Movement by heavy machines such a railways
- Reserviours especially in water dammed areas.

ii) Four negative significance of volcanicity to human activities

- Volcanic eruptions can cause great loss of life and property.
- Volcanic Mountain creates rain shadow effect resulting to aridity.
- Some volcanic lava flows develop into poor soils which are not suitable for Agriculture
- Rugged nature and volcanic land scape make settlement and Agriculture difficult.
- Some volcanic landscapes creates barriers which obstruct transport and communication.

NB.Award double ticks for well explained points

4 * 2 marks (8 marks)

8 (a) Define the term vegetation. (1 mark)

Vegetation refers to collective plants cover growing in a particular area/is the plant cover that occurs naturally or widely on the earth surface.

(b) Explain how the following factors influence the distribution of vegetation.

i) Aspect (2 marks)

Slopes facing the sun have a variety of plants due to warm summers.

Slopes facing away from the sun have few plants due to cool conditions or low temperatures.

ii) Relief (4 marks)

Windward sides of mountains receive heavy rainfall leading to the growth of thick forests.

Mountain tops have no or little vegetation cover due to little rainfall and very low temperatures.

Gentle slopes have thick vegetation due to deep fertile soils.

(c) The map below shows world vegetation zone

(i) Name vegetation type marked 1, 2, 3 and 4. **(4 marks)**

1 - Tundra
2 - Equatonal forests
3 - Tropical grasslands
4 - Desert vegetation

(d) Explain four ways in which trees in coniferous forests are adopted to the climatic conditions. **(8 marks)**

- Needle - like leaves help to reduce loss of water.
- The leaves have a tough waxy skin to protect them from cold winter
- The trees have a conical shape and flexible branches to allow snow to slide easily and to maximize damage to trees.
- Most trees are evergreen to minimize sunlight during the short growing season.
- The tree trunks are flexible to enable them sway without breaking during strong winds.
- The trees have thick barks with a lot of resin which protect them from frost. (4 X 2 = 8 marks)

(e) A form four Geography class is planning to carry out a field study in Kakamega forest.
State how they would use the following tools during the study.

i) A tape recorder **(1 mark)**

Used for recording conversations /interview In the field.

ii) A camera **(1 mark)**

Taking photographs of the forest/recording the observations.

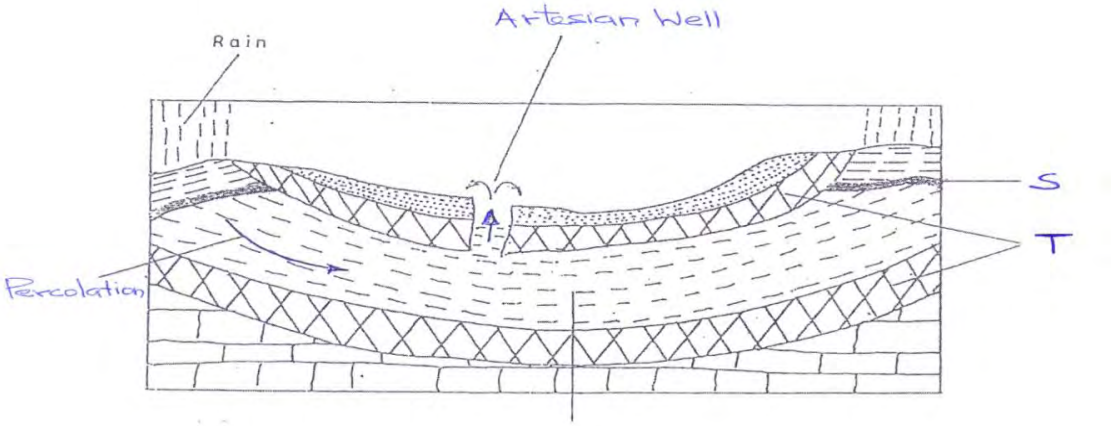
c) Give four methods they would use to collect the data during the study. **(4 marks)**

- Observing
- Oral interviewing.
- Collecting samples taking photographs
- Digging
- Smelling and feeling
- Reading from books
- Taking photographs (Any 3 X 1 = 3 marks)

9. (a) State three factors necessary for the development of Karst scenery. (3 marks)

- Presence of hard and well jointed rocks to allow permeability.
- There surface rock should be thick layers of limestone/ dolomite or chalk.
- The climate should be hot and humid with abundant/ moderate rainfall to facilitate solution.
- The water table should be deep to allow formation of the features. **(Any 3x1=3mks)**

(b) The diagram below shows an Artesian Basin. Use it to answer the question (i) and (ii).



(i) Name the parts marked S and T. (2 marks)

S- Water table

T- Impermeable rock

(ii) State three necessary conditions for the formation of an artesian well. (3marks)

- The aquifer must be made of the same permeable materials.
- Aquifer must be sandwiched between impermeable rocks.
- Aquifer must outcrop in the region of water intake.
- The basin should dip towards a region where land surface is lower than the exposed end/ form a broad syncline/basin.
- The mouth of the well must be lower than the intake area. (Any 3x1=3mks)

(iii) Explain how a doline is formed. (5 marks)

- Rain water mixes with Carbon IV oxide in the atmosphere to form weak carbonic acid.
- The rain water containing the acid reacts with Calcium carbonate in the limestone rock to form Calcium bi-carbonate which is soluble.
- As the solution percolates into the rock though the joints, the rock is eroded by solution.
- The joints deepen and widen forming small hollows called swallow holes.
- Continued solution widens the hollows so the blocks of rock between the hollows are dissolved completely.

*The swallow holes join/coalesce forming a large rounded / elliptical depression called a doline.

(6 ticks, steps be clear, *the last point must be there to score max.4mks)

(c) (i) Give reasons why some lakes are fresh. (3 marks)

- Some are located in areas of high rainfall which supply fresh water and dilute the salts keeping the lakes fresh.
- Some have surface outlets which drain away excess salts from the lakes.
- Some have subterranean outlets which drain off salts from the lakes.
- Some have regular inflow of fresh water from rivers which dilutes the salts in the lakes.
- Some are located in cool areas/areas of low temperatures hence low evaporation rates.**(Any 3 x 1 =3mks)**

(ii) Describe how a tarn is formed. (5 marks)

- Snow accumulates in shallow pre-existing hollow/depression on the mountain side.
- The snow gets compacted into ice
- Alternating freezing and thawing deepen the hollow.
- The accumulated ice erodes the hollow by abrasion and plucking making it deep and wide
- Eventually a deep steep-sided depression called a cirque is formed.
- Melt water and rain water collect in the depression to form corrie lake/ tarn.

(d) Explain two negative effects of lakes. (4 marks)

- Excessive rainfall can cause a lake to expand causing its water to spill over flooding of the shores and the surrounding areas.
- The shallow waters of the fresh water lakes provide conducive environment for breeding of pests that causes diseases.
- Lakes can be an obstacle to land transport like roads and railways increasing the distance to be followed.
- Man-made lakes may lead to displacement of people and division of communities.
- Some lakes are habitats for wild animals like hippos which are dangerous to human life and destroy crops.
- Some lakes have saline water that is unsuitable for irrigation, domestic and industrial use.

(Any 2 explained points x 2=4marks)

10.

(a) Distinguish between valley glaciers and ice sheets

- Valley glaciers are formed on highlands above the snow line while ice sheets are found in lowlands in the high latitude regions/valley glaciers are confined in valleys while ice sheets cover extensive landscapes (2 mks)

(b) Name three mountains in East Africa where glaciers are found.

- Mt. Kenya
- Mt. Kilimanjaro
- Mt. Ruwenzoris Any 3 x 1 = 3 marks

(c) How each of the following glacial features are formed.

(i) An arête

- Initially, ice collects in shallow hollows on the mountain sides.
- The hollows are enlarged by the plucking action of ice to form cirques / corries.
- More ice accumulates in the hollow leading to further erosion.
- The head walls/ back walls sidewall of the cirques recede until a knife – edged rock called arête separates them.

4 x 1 = 4 marks

(ii) Pyramidal peak

- Ice collects in several hollows on the mountain sides.
- Plucking action of ice enlarges the hollows so that more ice collects in them.
- Nivation eats into the back wall of the hollows.
- Eventually the hollows are separated by arêtes which converge at the mountain top forming a pyramidal peak.

Any 4 x 1 = 4 marks

d) Benefits of glaciated landscape to man.

- Glacial erosion exposes minerals which become easy to exploit.
- Fiord coastline provide good fishing ground because they are deep and sheltered.
- Glacial lakes provide natural water-ways e.g. great lakes of North America
- Lakes provides water for domestics / industrial use.
- Glaciated uplands provide suitable grazing lands as they form fine benches on which summer pastures grow e.g. in Switzerland.
- Glaciated landscape has features that attract tourists
- Glaciated lands provides grounds for sporting
- Waterfalls formed by rivers which flow through hanging valleys, provide sites for generating hydro-electricity.
- Alluvial fans and outwash plains are goods sites for agriculture.
- U-shaped valleys for channels for development of route ways. Any 3 x 2 = 6 marks

e) i) Give two reasons why you would require a working schedule

- It enables the planned activities to be carried out systematically
- It allows for proper use of available time
- It enables the assessment of the progress of the fieldwork
- It enables the estimation of a time required for the study.

ii) Name three erosional features you are likely to observe during the field study

- Depressions
- Crag And Tail
- Ice Eroded Plain
- Roche Mountonee 3 x 1 = 3mks

iii) Give three follow up activities you would undertake after the field study

- Sketching the features
- Note making / writing field reports
- Answering questions / quiz
- Discussing the findings
- Displaying photographs
- Analyzing data collected
- Reading more about the topic
- Drawing conclusion 3 x 1 = 3mks

KANGUNDO CLUSTER
GEOGRAPHY PAPER 2

MARKING SCHEME

1. a**) Factors that influence Agriculture**

- Physical factors –Climate /Topography/Soil
- Biotic factors - pests/predators/useful insects
- Human factors - Social - religion/education
- - Economic - capital/market **1x3** **(3mks**

b**) Factors that favour mechanization of wheat farming in Canada**

The undulating topography of the parries

- The wheat is grown mainly through large scale ie Extensive farms

2x1 **(2mks**

2. a) Reasons why marine fisheries in Kenya are underdeveloped

- Inadequate capital
- Inadequate market for fish
- Narrow continental shelf
- Water is too warm for fish breeding
- Illegal fishing
- Poor transport connections to the fisheries
- Low demand for fish
- Competition from developed countries
- Inadequate skills/technology

Any 3 x 1 **(3mks**

b) **Ways through which fish farming contribute to the economy of Kenya** .

- It creates job opportunities
- Some fish from the ponds are exported to earn the country foreign exchange
- It leads to development of fish related industries such as fish processing, canning
- Fertilizer manufacture, boat making etc
- It contributes immensely to the supply of animal protein
- It occupies less space compared to other activities such as mining and livestock keeping

Any 2 x 1 **(2mks**

3 a**) Conditions necessary for the formation of crude oil**

- Presence of organic remains/fossils over a long period of time
- Presence of porous rocks and non-porous rock underneath the e deposits
- Presence of pressure to compress the organic remains

b) **Ways in which open cast mining affects the environment**

- Open cast mines/pits may be filled with water creating deep pools which may cause accidents as well as health hazards
- It causes erosion/degradation of soil

- Formation of sink holes
- Loss of biodiversity
- Contamination of ground water by chemicals from the mining process
- Pollution of air from dust particles and gases
- The Open pits intervene with the natural beauty of landscape-(creates ugly landscape)
- Weakens rock structure which may lead to mass wasting
- Causes land dereliction. **Any 3 x 1** **(3mks)**

4 a) Environmental hazards experienced in Kenya apart from desertification

- Oil spills
- Fires
- Floods
- Lighting
- Windstorms
- Pollution
- Toxic gases
- Water spoofs
- Selmic disturbances **Any 2 x 1** **(2mks**

b) Three ways to combat floods

- Building dams
- Land use zoning
- Building dykes
- Building of artificial levees
- Affrorestation
- Diverting river channels in floods prone areas
- Avoid settling in floods prone areas
- Dredging river channels

Any 3 x 1 **(3ms**

5 a) **Settlement patterns represented by the map**

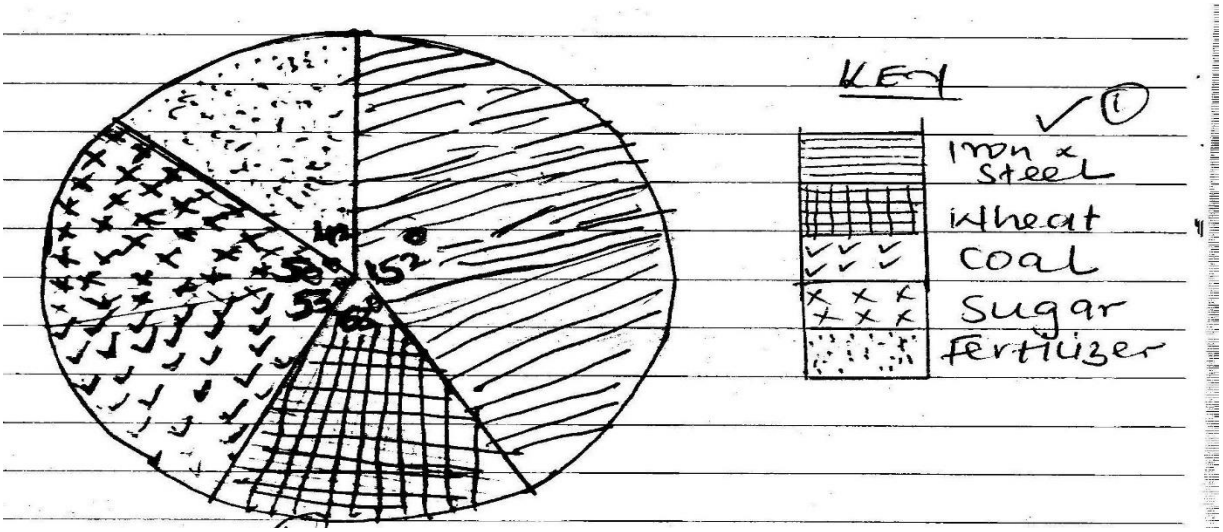
- Linear settlement
- Cluster/Nucleated settlement **(2mks**

b) Causes of rural to rural migrations

- Pressure on lands
- Better employment opportunities
- Warfare
- Calamities
- Government policies **Any 3x 1** **(3mks**

SECTION B

6A)A PIE CHART SHOWING KENYA'S IMPORT IN 1987 √



Correct pie chart segments√ (4mks
Calculations √ (2mks
Title √ (1mk
Key √ (1mk

Total (8mks

A) Clearly show working

Sugar $\frac{99000}{713000}$ x 360 = $49.99^0 \approx 50^0$

Iron and steel $\frac{300,000}{713000}$ x 360 = $151.47^0 \approx 152^0$

Fertilizer $\frac{84000}{713000}$ x 360 = $42.41^0 \approx 42^0$

Coal $\frac{105000}{713000}$ x 360 = $53.12^0 \approx 53^0$

wheat $\frac{125000}{713000}$ x 360 = $63.11^0 \approx 63^0$

II) Advantages of using pie charts to represents statistical data

- Can be used to present a wide range of statistical data
- Easy to read and interpret
- It Cleary shows comparisons of different quantities
- It gives clear impression of individual components **Any 3 x 1** **(3mks**

b) **Why Keya imports sugar and wheat yet she is a producer of the same commodities**

- The country's production is lower than the demand(Not self-sufficient)
- The cost of production in Kenya is high compared to cost of importing
- Hoarding of the commodities creates artificial shortages
- Crop failure due to drught leads to shortages necessitating importation to supplement
- Locally produced wheat/sugar.
- Mismanagement of the industries lead to their collapse and hence need to import **Any 3 x 2** **(6mks**

c) Factors that influence the importation and exportation of goods into and out of Kenya

Inadequate capital

- Inadequate finances have contributed to the limited expansion and development of trade
- In Kenya

High charges

- Some traders are discouraged from importing some goods because of high import
- Duties and other taxes levied on imported goods

Trade barriers

- The government has imposed restrictions on the goods to be imported or exported eg the export of maize or wheat is not allowed since the country does not produce enough so as to have surplus for export similarly, trader who import vehicles into Kenya are restricted to importing vehicles not older than 8 years
- Smuggling /black market
- This is the importation of goods into the country without following the right procedures. This affects trade because such goods are not presented at the Kenya revenue Authority(KRA) for inspections and certified for use in the Kenya such a trade devices the country Revenue for development since the goods are not subjected to taxation and also cause unhealthy competition at the market with goods imported through the right channels
- Low purchasing power

Poverty among the people of Kenya makes it difficult for them to afford most of the goods. This has also discouraged the importation of some items into the country since they don't sell easily

Any 4 x 2 (8mks

(Factor √)

(explanation √)

7 a) **other industries located in the Ruhr region of Germany other than Iron and steel**

- Chemical and fertilizer
- Textiles
- Oil refining
- Electronics
- Cutlery
- Food processing

- Service industries Any 3 x 1 (3mks

b) **Factors which led to the growth of iron and steel industry in the Ruhr region of Germany**

- Presence of raw materials eg coal iron and limestone
- Cheap water transport provided by navigable or Rhine, its tributaries and canals eg Lipper, Dortmund and Elms
- Well established road and railway network easily transportation
- River Rhine provides water needed for generation of H.E.P industrial and domestic use.
- Availability of skilled labour
- High and advanced technology in Germany
- Existence of old and rich companies and families who are willing to pool resources and provide the needed capital
- Availability of various sources of power eg coal oil, H.E.P
- Flat topography of the Ruhr region suitable for sitting and contracting industries
- Central geographical location of the Ruhr region in Europe makes it easily accessible from all parts of Europe through water , railway, roads and air making importation and exportation of goods easy

Any 4 x 2 (8mks

c) **Four ways in which Kenya has benefitted by assembling motor vehicles locally**

- Earning from foreign exchange through sale - exportation of locally manufactured Vehicles
- Kenya saves foreign exchange since money which could be used in importing
- Vehicles is used to develop other sectors of economy
- Creation of employment opportunities since many people have been employed In the industry
- Has led to growth and development of other related industries eg iron and steel , oil etc.
- Enhancement of both internal and external trade as manufactured vehicles are sold both locally and internationally/regionally
- Source of revenue to the government from taxation **Any 4x 2 (8mks**

d) Problems that are experienced in Kenya as a result of industrial development

- Industries produce wastes which lead to pollution of air, soil and water
- Industrialization encourage rural-urban migration resulting to high population in Urban areas stretching available services.
- Emphasis on industrialization may lead to neglect of Agriculture which can result to food shortage.
- Industrialization lead to displacement of people so as to create space/land for setting up industries.
- Industries result to formation of acid rain which is harmful to plants and animals
- Industries lead to urbanization which bring new values hence erosion of tradition and culture.
- Industrialization results to unemployment, especially in capital intensive industries where human labour is replaced with machines
- Cheaper and better quality goods from outside cannot be acquired because of protecting the local industries

Any 3 x 2 (6mks

8 a) **Source of energy other than water**

- Wind
- Sun
- Uranium
- Biomass
- Crude oil/petroleum
- Coal **Any 4 x 1 (4mks**

b) Five factors, that favour location of Hydroelectric power plants

- Availability of large volume of water which does not fluctuate
- Availability of water falls along the river which provide an ideal site for construction
- Of H.E.P power stations
- High rainfall in upstream areas to provide constant supply of water
- Availability of basement rock to allow firm foundation for construction of the stations
- Availability of technical skills and machines to set up and operate the stations
- Narrow valley/gorge to allow water from a head develop high pressure
- Presence of ready market
- Availability of capital **Any 5 x 1 (5mks**

c) Four ways in which Kenya has benefited from the development of the seven forks power scheme

- The projects produce electricity. Which is used for Kenyas industrial development and domestic use
- The scheme control floods along River Tana
- The water in the reservoirs in used for irrigation
- The dams are used as transport.
- Fishing is done in the reservoirs
- The seve forks act as tourist attraction in Kenya .
- Creation of employment in the H.E.P stations
- Provision of electricity has led to development of urban centers
- Water in the reservoirs is pumped for use in urban centers **Any 4x 2 (8mks**

d) Problems that Kenya face as a result of over dependence on petroleum

- It has caused a rise in the cost of living of the people
- Leads to an increase in prices of goods
- Affects balance of trade since earnings from export will be lower that imports
- Results into inflation since government passes the costs to consumers
- Lowers GDP since there will be more expenditure than investment
- Increased production cost in other industries
- Increased transport cost
- Lowered crop production due to increased cost of inputs like fertilizers **Any 4x 2 (8mks**

9 a) Physical conditions necessary for growing of sugarcane

- Fairly level/gently sloping land
- Deep /well drained soils
- Dry sunny period for ripening and harvesting
- Hot climate (21^0- 27^0c) through out the year
- High rainfall (1200-1500mm) **Any 3 x 1 (3mks**

b) Commercial production of sugarcane from

i) Land preparation to harvesting

- Land is cleared, ploughed and harrowed
- Cutting from young cane plant (12 – 15 months) are planted
- The plants are weeded regularly
- At 18 months harvesting is done by hand using sharp pangas
- The harvested cane is loaded on a truck and transported to the factory
- Immediately to preserve the quality of the cane **Any 4 x1 (4mks**

ii) **Processing to marketing of sugar**

- At the factory the canes are mechanically cut with rotating knives called shredders
- The cut cane is then washed with sprayed water
- The cane is then crushed between rollers to obtain raw juice
- The juice is then filtered to remove insoluble matter
- The juice is then boiled in evaporation with lime and allowed to crystalize to form raw or brown mixture of molasses and sucrose crystals
- The brown sugar is then refined to give brown and white sugar of different grades
- The pure sugar is packaged ready for sale **Any 4 x 1 (4mks**

(any 8 correct points (8mks

c) i) methods of collecting data

- Observing
- Administering questionnaires
- Interviewing **(any 2 x 1 (2mks**

ii) **Problems facing sugarcane farmers in Kenya**

- High cost of farm inputs which greatly reduces the farmers profit margins
- Poorly managed sugar factories and mismanagement of Co-operatives leading to delayed and low payments to farmers which lower their morale
- Diseases eg ratoon stunting, mosaic yellow wilt- leaf spot and smut attack sugar-cane lowering farmers yield and income.
- Labour shortage during harvesting
- Poorly developed feeder roads leading to late delivery of the harvesting crop to the factory
- Pests such white scales attack sugar-cane leading to low yields hence income
- Burning of the cane by arsonists or accidental fire outbreaks make farmers incur heavy loses
- Flooding of local market with cheap imported sugar leads to low market for the local sugar

10 a) difference between transport and communication

- Transport is the physical movement of people and goods from one place to another

While

- Communication is the transmission/relaying and receipt to information from one person to another or from a group to another through a medium **(2mks**

B) Three products transported by pipelines

- Water- cereals
- Oil
- Gas **3x1 (3mks**

c) **Why there a few railways lines among African countries**

- Railway lines are expensive to construct
- It's expensive to buy and maintain trains
- Railway stations require large pieces of land for their construction which may not
- Be available since the land is better used for settlement and agriculture
- Poor management leading to many railway lines and trains not being serviced
- Railway line construction is dependent on the land terrain since rail line can only be constructed on flat terrain but not hilly/rugged terrain.
- It's difficult to connect a railway line of one country with another because of different gauge since most of them were constructed during colonial period

Any 3x2 (6mks

d) **Ways in which Kenya has benefited from her international airports**

- Employment opportunities thus helping solve problems of unemployment
- Helped generate revenue through taxation of goods and passengers at the airport
- It has promoted international awareness/understanding by enabling Kenya interact with people from other parts of the world
- Promoted tourism by providing direct lines with the tourists country of origin
- Promoted horticultural export by providing efficient means of transport to foreign market
- Promoted international trade by enabling business people to travel to and from Kenya easily

Any 3x2 (6mks

e) **Problems facing transport and communication in Africa**

Difficult terrain

This makes it difficult to develop transport and communication facilities eg the rift valley the rugged scarps, etc

Harsh environment

i) Such as the deserts of sahara kalahan and Namib are characterized by mobile sand dunes which discourage construction of roads and airstrips, such

ii) Sparse population in such areas makes it uneconomical to put up facilities

Any 1x2 (2mks

Thick tropical rain forest eg in DRC and congo make it very expensive to construct transport and communication facilities

Non-Navigable rivers- Most rivers in Africa are not navigable due to

Fluctuation of discharge etc **(2mks**

Inadequate communication facilities

Many countries lack modern telecommunication equipment like satellite and internet facilities **(2mks**

Civil wars

Many countries have been affected by recurrent civil wars which have resulted in massive destruction of facilities in Burundi and Rwanda etc **(2mks (8mks**

BUURI STANDARDS ASSESSMENT
GEOGRAPHY
312/1

SECTION A
Answer all questions

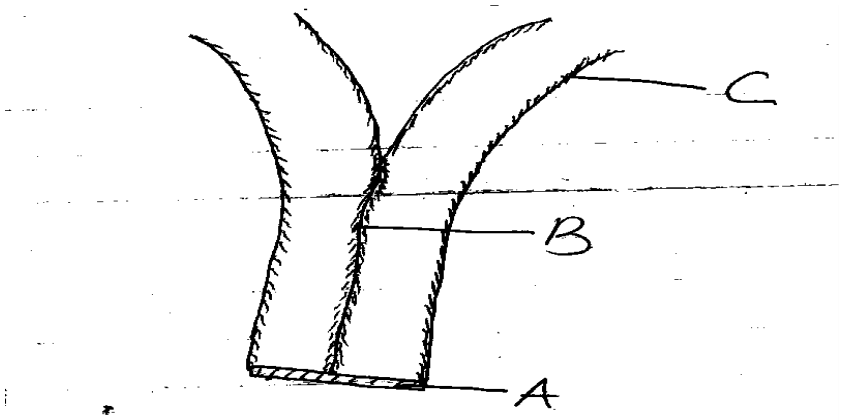
1. (a) Give two forces that are responsible for the shape of the earth (2mks)
   (b) State three characteristics of the inner core (3mks)
2. (a) Differentiate between epicentre and seismic focus (2mks)
   (b) Give three human causes of earthquakes (3mks)
3. (a) State two conditions that influence the process of solifluction (2mks)
   (b) Give three negative effects of mass wasting on physical environment (3mks)
4. (a) Differentiate between zero lapse rate and negative lapse rate (2mks)
   (b) Give three factors influencing climate (3mks)
5. (a) What is soil? (2mks)
   (b) Name three types of soil according to texture (3mks)

SECTION B
Answer question 6 and any other two questions from this section

6. Study the map provided (Kijabe 1:50,000) and answer the following questions
   (a) (i) What type is Kijabe map? (1mk)
   (ii) Convert representative from scale on map to a statement scale (2mks)
   (iii) Give the longitudinal extent of the area covered by the map (2mks)
   (b) (i) What is the approximate height of the highest point on the area covered by the map (2mks)
   (ii) Calculate the area covered by the thicket in Km^2 on the map (2mks)
   (c) (i) Giving evidence from the map identify three social services provided in the area covered by the map (6mks)
   (ii) Describe the relief of the area covered by the map (5mks)

   (iii) Draw a square of 10cm by 10cm to represent the area bounded by the Eastings 24 and 31 and northings 92 and 99 in the square you have drawn, mark and label the following
      – Railway line (1mk)
      – Power line (1mk)
      – All weather road bound surface (1mk)
      – Dry weather road (1mk)
7. (a) (i) Define faulting (2mks)
   (ii) Identify three types of faults (3mks)
   (b) Apart from compressional process, explain two other processes that may cause faulting (4mks)
   (c) With the aid of well labelled diagrams, describe how compressional forces result to the formation of Great Rift Valley (8mks)
   (d) Apart from the Rift valley name two other relief features that were formed by compressional forces. (2mks)
   (e) Explain three significance of faulting to human activities (6mks)
8. (a) Differentiate between ice age and ice sheet (2mks)
   (b) (i) Explain two factors that influence glacial deposition (4mks)

(ii) Name the moraine marked A, B and C in the figure below (3mks)



(c) (i) Describe how a hanging valley is formed (4mks)
(ii) Explain three significance of upland glaciated features to human activities (6mks)
(d) You are required to carry out field study on a glaciated highland areas
(i) Name two features you are likely to identify. (2mks)
(ii) State two reasons why you would require a route map (2mks)
(iii) State two follow up activities you would undertake after the field study (2mks)

9. (a) (i) Name two types of desert surfaces (2mks)
(ii) Give two reasons why wind action is effective in the hot desert (2mks)
(iii) Explain two processes of wind erosion in the desert (2mks)
(b) (i) Apart from rock pedestal, name two other erosional features formed by wind in the desert (2mks)
(ii) With aid of well labelled diagrams, describe the formation of rock pedestal (6mks)

(c) (i) State three factors that influence the transportation of materials in the desert by wind. (3mks)
(ii) Explain three negative effects of desert landforms (6mks)

10. (a) (i) Differentiate between rocks and minerals (2mks)
(ii) State three characteristics of minerals (3mks)
(b) (i) Give three classifications of organically formed sedimentary rocks (3mks)
(ii) The table below shows change of original rocks to metamorphic rocks. Fill the table (3mks)

Original Rock	Metarmorphic rock
Granite	
Limestone	
	Graphite

(c) Explain two types of igneous rocks and in each give an example (6mks)
(d) Explain four significance of rocks (8mks)

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GEOGRAPHY
312/2

SECTION A
Answer all questions in this section

1. (a) Give two primary sources of population data (2mks)
   (b) State three ways in which the population of Kenya differs from that of Sweden (3mks)
2. (a) Name three negative effects of open cast mining to the environment (3mks)
   (b) Name two methods of placer mining (2mks)
3. (a) List two factors that influence trade (2mks)
   (b) State three significance of trade (3mks)
4. (a) Apart from windstorms, name two other environmental hazards associated with climatic condition (2mks)
   (b) Give three effects of air pollution in major urban centers (3mks)
5. (a) Define the term energy (2mks)
   (b) Outline three factors that favours the location of a hydro-electric power station (3mks)

SECTION B
Answer question 6 and any other two questions from this section

6. (a) The table below shows horticultural crop production in Kenya in the year 2014

Crop	Quantity in tonnes
Flowers	42,500
Oranges	22,600
Tomatoes	20,300
Carrots	15,400

   (i) Draw a divided rectangle 15cm long to represent horticultural crop production in Kenya in the year 2014, using the above data (9mks)
   (ii) Calculate the range of the above data (2mks)
   (iii) What is the percentage of the horticultural crop with the highest tonnage? (2mks)
(b) State two advantages of using divided rectangles to represent geographical data (2mks)
(c) (i) What is the difference between horticulture and market gardening (2mks)
   (ii) Explain four problems facing horticulture farming in Kenya (8mks)
7. (a) (i) Differentiate between transport and communication (2mks)
   (ii) State three reasons why road network is more widespread than railway network in East Africa (3mks)
   (b) (i) Outline three benefits derived from the construction of Nairobi-Thika super highway (3mks)
   (ii) Name five great lakes along St Lawrence seaway (5mks)
   (c) Explain how the following factors hinder transport and communication in Africa (4mks)
   (i) Terrain
   (ii) Shortage of skilled labour
   (d) Explain four benefits of transport in the economic development of Africa (8mks)
8. (a) (i) What is forestry? (2mks)
   (ii) State three characteristics of planted forests (3mks)
   (b) (i) Name two soft wood trees which grow in Canada (2mks)
   (ii) Explain three ways in which coniferous forests are adapted to the cold climate (6mks)
   (iii) Give four problems facing forestry in Kenya (4mks)
   (c) State three measures taken by the Kenyan government to conserve forests (3mks)
   (d) Compare forestry in Kenya and Canada under the following sub-headings
      (i) Transportation (2mks)
      (ii) Market (2mks)
      (iii) Tree species (2mks)
9. (a) (i) Identify two processes used to reclaim swamps in Kenya (2mks)
   (ii) Give three irrigation methods used in Kenya (3mks)

(b) Explain three human factors that favour irrigation farming in the Mwea Irrigation scheme (6mks)

(c) Explain how the following problems affect irrigation farming in Kenya
   (i) Presence of weeds in the farm (2mks)
   (ii) Low volume of water during the dry season (2mks)
   (iii) Expensive farm inputs (2mks)

(d) Explain four ways in which irrigation farming is of significance to the economy of Kenya (8mks)

10. (a) (i) What is industrialization ? (2mks)
   (ii) Explain how the following factors influence the location and development of industries
   Raw materials (2mks)
   Water (2mks)

(b) (i) Name two agricultural non-food manufacturing industries in Kenya (2mks)
   (ii) State four characteristics of Jua Kali industries in Kenya (4mks)
   (iii) Give three problems facing Jua Kali industries in Kenya (3mks)

(c) State four ways in which industrialization is significance in Kenya (4mks)

(d) Explain three factors which influenced the location of iron and steel industry in the Ruhr region of Germany in the 19th Century (6mks)

BUURI STANDARDS ASSESSMENT
GEOGRAPHY
312/1

MARKING SCHEME
SECTION A
Answer all questions

1. (a) Give two forces that are responsible for the shape of the earth (2mks)
- Centripetal forces
- Centrifugal forces
- Gravitational forces

(b) State three characteristics of the inner core (3mks)
- The rocks are in solid state
- The dominant mineral is iron
- It has a radius of 1380kms
- The average density of rocks is 17gm/cc
- The temperatures ranges from 4000 – 4500^0c

2. (a) Differentiate between epicentre and seismic focus (2mks)
- Epicentre is a point on the earth's surface which is vertically above the seismic focus while seismic focus is a point of origin in the earth from where the shock waves originate.

(b) Give three human causes of earthquakes (3mks)
- Testing of nuclear weapons underground
- Movement of trains cause mid tremours
- Use of explosives during quarrying
- Construction of large reservoirs

3. (a) State two conditions that influence the process of solifluction (2mks)
- The presence of gentle slope
- The occurrence of alternating warm and cold season
- Presence of permanent layer/frozen ground/bedrock
- Unconsolidated saturated weathered materials/debris

(b) Give three negative effects of mass wasting on physical environment (3mks)
- Destruction of vegetation
- Blockage of rivers/destruction of flow of rivers
- Exposure of land to agents of soil erosion
- Leads to formation of scars on the landscape

4.
(a) Differentiate between zero lapse rate and negative lapse rate (2mks)
- Zero lapse rate - no change in temperature with increase in height above sea level.
- Negative lapse rate - temperatures increase with increase in height above sea level.

(b) Give three factors influencing climate (3mks)
- Latitude
- Aspect
- Altitude
- Ocean currents
- Configuration of the coastline
- Distance from the sea

5. (a) What is soil? (2mks)

– Soil is the upper layer of the earth on which plants grow

(b) Name three types of soil according to texture (3mks)

– Loamy
– Clay
– Silt
– Sandy
– Gravel

SECTION B

Answer question 6 and any other two questions from this section

6. Study the map provided (Kijabe 1:50,000) and answer the following questions

(a) (i) What type is Kijabe map? (1mk)

Topographical map

(ii) Convert representative from scale on map to a statement scale (2mks)

$\frac{50,000}{100,000} = 0.5km$

1cm represents 0.5km

(iii) Give the longitudinal extent of the area covered by the map (2mks)

$36^0 30^1 E - 36^0 45^1$ East

(b) (i) What is the approximate height of the highest point on the area covered by the map (2mks)

2660 - 2670m

(ii) Calculate the area covered by the thickest in Km^2 on the map (2mks)

Full squares 2 x $1km^2 = 2Km^2$

Incomplete squares $\frac{17}{2} = 8.5 \times 1km^2 = 8.5km^2$

Total area $2 + 8.5km^2$ ($10 - 11Km^2$)

(c) (i) Giving evidence from the map identify three social services provided in the area covered by the map (6mks)

Social services	Evidence
– Education	- Schools
– Medical/Health services	- Hospitals
– Religious services	- Church

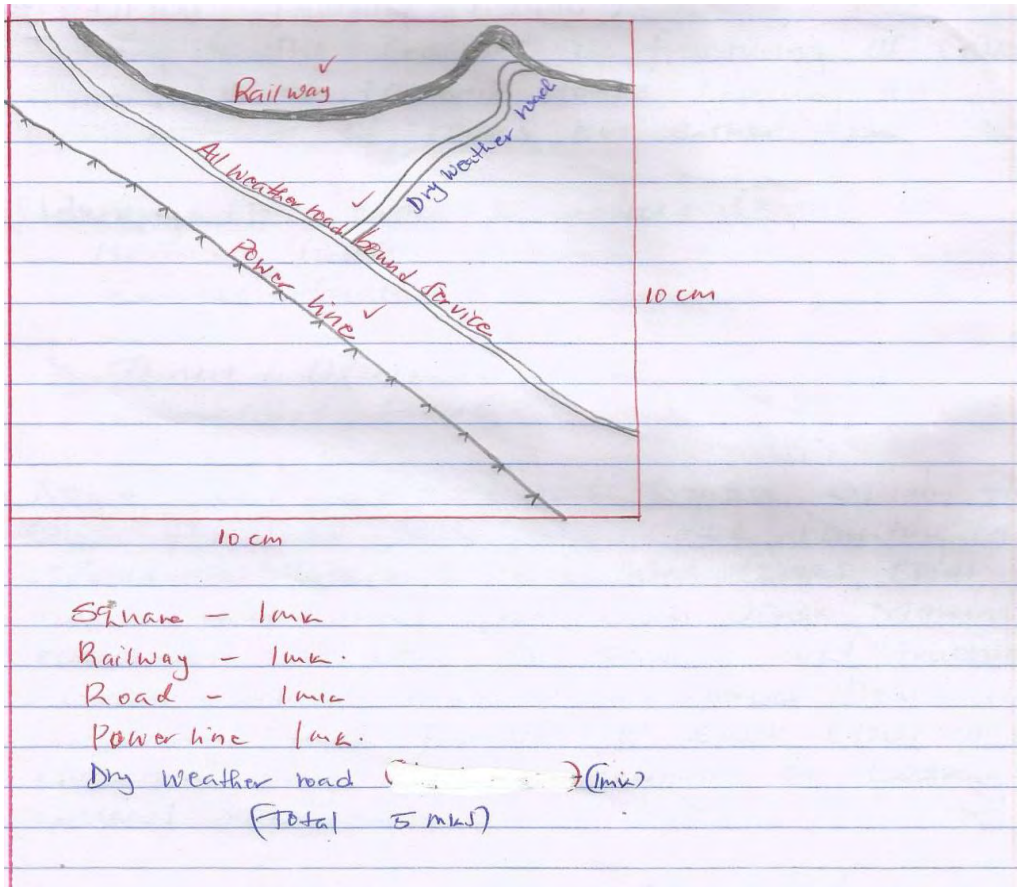
NB: Social service can score a mark on its own but not evidence on its own

(ii) Describe the relief of the area covered by the map (5mks)

– There is a hill (Kijabe hill)
– There are numerous river valleys
– There is steep slopes
– There is a gentle slope
– The area slopes from Northern to Southern, North West to South East
– The Lowest area on the map is to the South Western part of the map

(iii) Draw a square of 10cm by 10cm to represent the area bounded by the Eastings 24 and 31 and northings 92 and 99 in the square you have drawn, mark and label the following

-Railway line (1mk)
- Power line (1mk)
- All weather road bound surface (1mk)
- Dry weather road (1mk)



7.

(a) (i) Define faulting (2mks)

– Faulting is the cracking or fracturing of crustal rocks due to tectonic forces leading to displacement of rocks on either side.

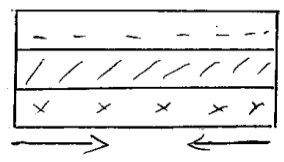
(ii) Identify three types of faults (3mks)

– Normal faults
– Reverse faults
– Shear/tear fault
– Thrust/overthrust fault
– Anticlinal faults

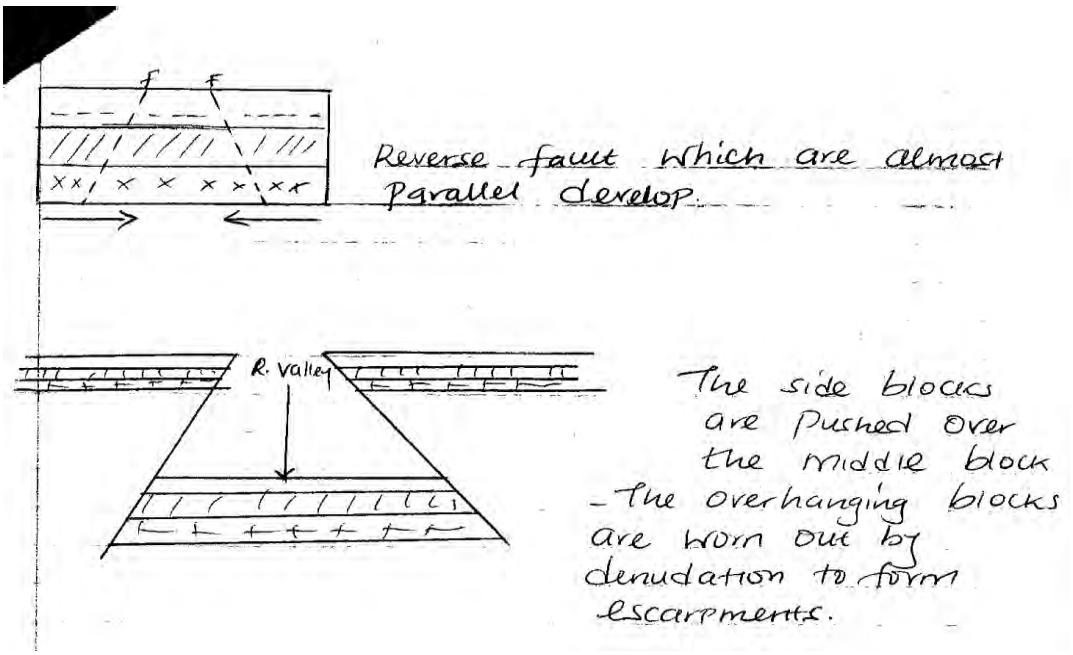
(b) Apart from compressional process, explain two other processes that may cause faulting (4mks)

– Tensional process - These are forces that act horizontally away from each other making the rocks of the crust to stretch and fracture.
– Shear process - These are forces that act horinzontal and parallel to each other in opposite directions. They cause shearing or tearing of crustal rocks

(c) With the aid of well labelled diagram, describe how compressional forces result to the formation of Great Rift Valley (8mks)



*Rocks are subjected to compressional forces.



(d) Apart from the Rift valley name two other relief features that were formed by compressional forces. (2mks)

- Fault scarp/escarpment
- Fault steps
- Fault blocks
- Tilt blocks
- Block mountain/horst

(e) Explain three significance of faulting to human activities (6mks)

- Leads to formation of waterfalls that can be exploited to generate H.E.P
- Features resulting from faulting e.g River valley are a tourist attraction which earns a country foreign exchange.
- Rift Valey lakes provide water for industrial and domestic use.
- The highlands e.g block mountains modify the climate of the area making it suitable for agriculture.
- Along the faults are found mineral deposits which can be exploited for industrial development

8. (a) Differentiate between ice age and ice sheet (2mks)

- Ice age refer to a geological period in history when ice sheets covered large parts of the continent while ice sheet is the large and continuous mass of ice which covers vast areas of a lowland.

(b) (i) Explain two factors that influence glacial deposition (4mks)

- Rising temperature which lead to melting of ice thereby causing ice to deposit its load.
- Change of gradient which reduce the velocity of glacial movement leading to deposition.
- Alternating of warm and cold periods leading to seasonal melting of ice hence allowing deposition of materials
- Obstruction of glaciers, leads to pressure at the base of glacier causing melting of ice and deposition of material.

(ii) Name the moraine marked A, B and C in the figure below (3mks)

- A - Terminal Moraine
- B - Medial Moraine
- C - Lateral Moraine

(c) (i) Describe how a hanging valley is formed (4mks)

- Ice occupies the main valley and tributary valleys.
- The valleys get eroded by the ice through abrasion and plucking
- Main valley is eroded more because it contains more ice than the tributary valleys.

- When ice eventually retreats by melting the tributary valley is left at a higher level than the main valley. It appears to hand above it and so its called hanging valley

(ii) Explain three significance of upland glaciated features to human activities (6mks)

- Warm glaciated valley are suitable for livestock farming
- Glacial upland areas have magnificent features e.g cirques which encourage tourism and recreation.
- Waterfalls which form at hanging valleys are exploited for generation of hydro-electric power (HEP)
- Some tarns are suitable areas for trout fishing.
- Some U-shaped valleys form natural route ways and are also suitable for settlement and agriculture.
- Some fiords fore deep,well sheltered natural harbours and good fishing grounds.
- Glaciated mountains discourage human settlement hence growth of forest and therefore lumbering is practiced.

(d) You are required to carry out field study on a glaciated highland areas

(i) Name two features you are likely to identify. (2mks)

- Hunging valleys
- U-shaped glacial trough
- Cirque/corrie
- Arete
- Pyramidal peak
- Rock basin
- Fiords

(ii) State two reasons why you would require a route map (2mks)

- To identify the direction to follow
- To help, prepare a working schedule
- To identify location of features for the study
- To help estimate the distance to be covered
- To help estimate the time the field study is likely to take

(iii) State two follow up activities you would undertake after the field study (2mks)

- Displaying photographs
- Writing
- Discussing with the rest of the class
- Assessing information collected against hypothesis
- Drawing diagrams
- Asking and answering questions
- Reading more on the topics

9. (a) (i) Name two types of desert surfaces (2mks)

- Sandy/Erg
- Hamada/rock surface
- Pet/Angular pebbles, gravel, boulder or stony desert

(ii) Give two reasons why wind action is effective in the hot desert (2mks)

- Presence of loose unconsolidated dry masses of mud, sand and gravel.
- Occurrence of strong tropical storms
- Absence of vegetation leading to high wind velocity due to little frictional force.

(iii) Explain two processes of wind erosion in the desert (2mks)

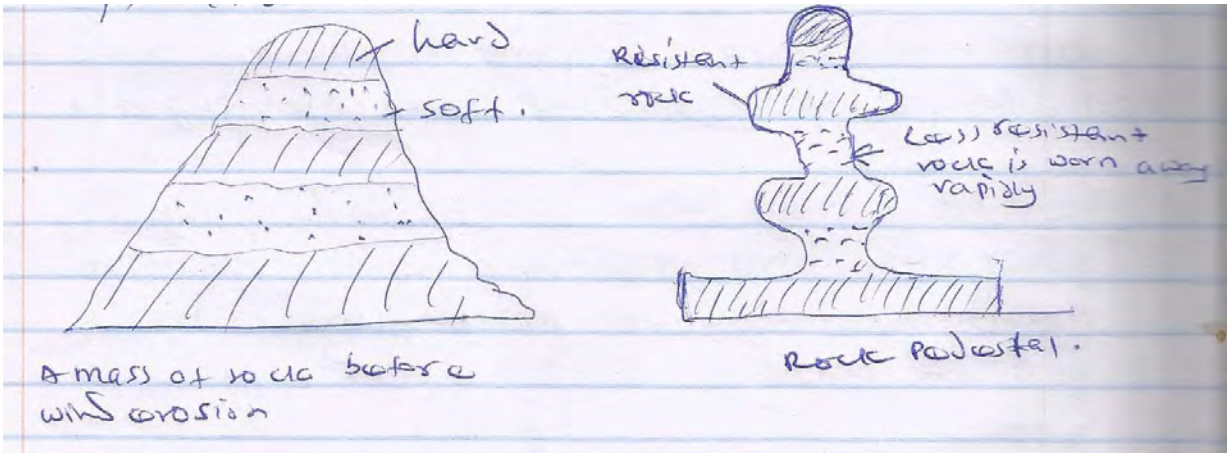
- Abrasion - This is the process through which materials carried by the wind e.g sand are used as tools of erosion to grind and polish the desert surfaces.
- Attrition - This is the process through which sand particles which are carried by air collide with each other and reduce in size progressively.
- Deflation - This is the process through which wind blows away and rolls on the ground unconsolidated materials hence lowering the land surface.

(b) (i) Apart from rock pedestal, name two other erosional features formed by wind in the desert (2mks)

- Zeugens
- Yardangs
- Mushroom blocks
- Deflation hollows

(ii) With aid of well labelled diagrams, describe the formation of rock pedestal (6mks)

- A rock outcrop composed of horinzontal alternating layers of hard and soft rock stick above the general surface.
- The rock is attracted by weathering and wind abrasion
- The softer rocks are eroded faster than the hard layers
- The lower part is eroded more because wind abrasion is more effective closer to the ground.
- Hence the lower part is reduced to a thin stem. This new feature is called a rock pedestal.



(c) (i) State three factors that influence the transportation of materials in the desert by wind. (3mks)

- Strength of winds whereby strong winds in desert areas are capable of transporting heavy and more material due to high velocity.
- Nature of the load e.g light, loose/unconsolidated materials are carried and easily transported by wind over long distances.
- Sudden changes in weather conditions e.g sudden rain showers in deserts wash down air borne materials that were being transported leading to deposition.
- Presence of obstacles on the path of wind may reduce the velocity of wind, making it difficult to transport sand.

(ii) Explain three negative effects of desert landforms (6mks)

- Sand dunes migration may destroy rich agricultural land and threaten human and animal life.
- Features like wadis make construction of transport lines difficult and expensive.
- Sand dunes make transport difficult as they form barriers to transport line.

10. (a) (i) Differentiate between rocks and minerals (2mks)

- A rock is a substance that is aggregate of mineral particle while a mineral is an inorganic substance occurring naturally at or beneath the earth surface.

(ii) State three characteristics of minerals (3mks)

- Minerals have distinct shape, colour
- Minerals have different degree of hardness
- Minerals can be opaque, transluscent or transparent
- Minerals have different textures
- Minerals differ in streak. This is the colour that a mineral leaves when it is rubbed against a hard surface.
- Minerals have lustre - This refers to the surface appearance of a mineral as it reflects light.

(b) (i) Give three classifications of organically formed sedimentary rocks (3mks)

- Calcareous rocks

- Ferruginous rocks
- Siliceous rocks
- Carbonaceous rocks

(ii) The table below shows change of original rocks to metamorphic rocks. Fill the table

Original Rock	Metarmorphic rock
Granite	Gneiss
Limestone	Marble
Coal	Graphite

(c) Explain two types of igneous rocks and in each give an example (6mks)

- Intrusive igneous rocks
  Those are rocks formed when magma cool and solidifies beneath the earth surface eg granite, gabbro, peridotite.
- Extrusive igneous rocks
  Those are rocks which are formed when magma reaches the earth surface cools and solidifies e.g pumice, tuff, obsidian and basalt.

(d) Explain four significance of rocks (8mks)

- Rocks upon weathering, form, fertile soils which support agriculture
- Some rocks store underground water which can be harnessed and used for domestic and industrial purposes.
- Some rocks form beautiful sceneries which attracts tourists who bring foreign exchange.
- Some rocks are used in building industry e.g limestone rock is processed to produce scenes that is used in various construction.
- Some rocks are used as fuel e.g coal
- Some rocks are used for scrubbing e.g pumice

BUURI STANDARDS ASSESSMENT
312/2
GEOGRAPHY PAPER

MARKING SCHEME
SECTION A

1. (a) Give two primary sources of population data (2mks)

- National Census
- Sample survey
- Registration of birth/death /marriages

(b) State three ways in which the population of Kenya differs from that of Sweden (3mks)

- The population of Kenya has a large number of young people below 20yrs of age while Sweden has an ageing population.
- Kenyan population has a lower life expectancy while Sweden has a higher life expectancy.
- Population birth rate is high in Kenya while in Sweden its low.
- The fertility rate in Kenya is high while in Sweden is low
- The population growth rate is high in Kenya while in Sweden its low.

2. (a) Name three negative effects of open cast mining to the environment (3mks)
- The land is left with gaping quarries which are ugly causing land degradation.
- Agricultural land is wasted
- Dust produced pollute the environment causing respiratory diseases.
- Land for settlement is reduced.
- Stagnant water is open pits form breeding grounds for disease causing organisms.

(b) Name two methods of placer mining (2mks)
- Panning mining
- Dredging mining

3. (a) List two factors that influence trade (2mks)
- Demand and supply
- Trade restrictions such as quota system
- Difference in endowment of natural resources.
- Aids to trade such as banking and insurance
- Functional transport and communication infrastructure

(b) State three significance of trade (3mks)
- Source of revenue to the government
- Source of employment to many Kenyans
- Leads to development of industries
- Has led to development and improvement of transport systems

4. (a) Apart from windstorms, name two other environmental hazards associated with climatic condition (2mks)
- Floods
- Drought/desertification

- Land slides
- Lightening

(b) Give three effects of air pollution in major urban centers (3mks)
- When sulphur dioxide combines with water vapour in the atmosphere they form acidic rain which corrodes buildings
- Some gases emitted by factories contain poisonous substances which lead to poor health which may lead to death.
- Too much smoke in the atmosphere reduces visibility which may cause aeroplane accidents.
- High concentration of carbon dioxide in the atmosphere increases the temperature of a plane leading to the green house affect hence altering the climate of urban centers.

5. (a) Define the term energy (2mks)
- Energy is the power required to carry out an activity e.g to run a machine.

(b) Outline three factors that favours the location of a hydro-electric power station (3mks)
- Steep gradient to provide fast flowing water with massive hydraulic force to drive turbines.
- Constant supply of a large volume of water to ensure continuous generation of power.
- Hard basement rock to provide a firm foundation for the construction of a dam.
- Basement rock should be non-porous or impervious to prevent seepage.
- Presence of deep valley – save cost on dam construction
- Market availability for power
- Availability of capital for construction of HEP projects and for maintenance.

SECTION B

Answer question 6 and any other two questions from this section

6. (a) The table below shows horticultural crop production in Kenya in the year 2014

Crop	Quantity in tonnes
Flowers	42,000
Oranges	22,600
Tomatoes	20,300
Carrots	15,400

(i) Draw a divided rectangle 15cm long to represent horticultural crop production in Kenya in the year 2014, using the above data (9mks)

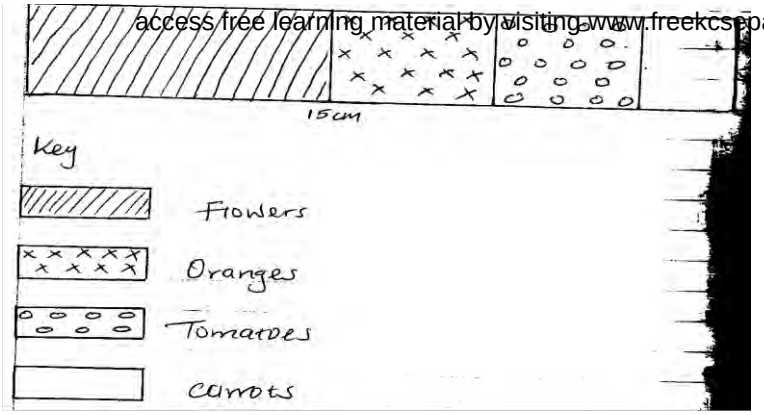
Flowers $\frac{42,500 \times 15}{100,800} = 6.32$ cm

Oranges $\frac{22,600 \times 15}{100,800} = 3.4$ cm

Tomatoes $\frac{20,300 \times 15}{100,800} = 3.02$ cm

Carrots $\frac{15,400 \times 15}{100,800} = 2.3$ cm

A Divided rectangle showing horticultural Crop Production in tonnes in 2014.



(ii) Calculate the range of the above data (2mks)

42,500 – 15 400 = 27,100 tonnes

(iii) What is the percentage of the horticultural crop with the highest tonnage? (2mks)

$\frac{42,500 \times 100}{100,800} \times 100$

= 42.163%

(b) State two advantages of using divided rectangles to represent geographical data (2mks)

- They are easy to draw
- They are easy to read and interpret

(c) (i) What is the difference between horticulture and market gardening (2mks)

- Horticulture refers to the intensive cultivation of vegetables, fruits and flowers for sale while
- Market gardening is the intensive cultivation of vegetables and fruits for sale

(ii) Explain four problems facing horticulture farming in Kenya (8mks)

- Most roads are impassable during rainy season causing delays making produce go to waste.
- Stiff competition in the international market leading to low prices that discourage farmers.

- Limited refrigeration facilities that lead to deterioration of the quality products.
- Attack of horticultural crops by pests and diseases lowering quality and quantity.
- Less capital to purchase all farm inputs causing low production.

7. (a) (i) Differentiate between transport and communication (2mks)

- Transport is the movement of goods and people from one place to another
  While
- Communication is the transmission of ideas or information from one person to another.

(ii) State three reasons why road network is more widespread that railway network in East Africa (3mks)

- Road network is cheaper to construct and maintain.
- Roads are flexible and provide door to door services
- Roads can be used by a wide range of transport agents/they are more versatile.
- Roads are faster to use.
- There is greater demand for road transport than railway transport.
- Roads can be constructed on a varied terrain.

(b) (i) Outline three benefits derived from the construction of Nairobi-Thika super highway (3mks)

- Has reduced severe traffic congestion/delays/saves time.
- Reduced frequent road accidents
- Increase employment opportunities for drivers/conductors/loaders as more vehicles ply the highway.

(ii) Name five great lakes along Stilawrence seaway (5mks)

- L. Ontario
- L. Superior
- L. Erio
- L. Hurron
- L. Michigan

(c) Explain how the following factors hinder transport and communication in Africa (4mks)

(i) Terrain

- The African region has rugged terrain with numerous steep slopes, escarpments, rift valley and mountains. This has rendered the establishment of transport difficult and very expensive.
- Heavy rains along steep slopes can wash away the rails/trains and locomotives cannot climb steep slopes.

(ii) Shortage of skilled labour

- There is shortage of skilled labour leading to poorly constructed roads that wear out very fast communication systems that cannot adapt to changing needs.
- The countries rely on expartriates to provide technical assistance in construction of lines of transport which is very expensive.

(d) Explain four benefits of transport in the economic development of Africa (8mks)

- Increased movement of goods and people which leads to greater trade and exchange of ideas.
- Creation of employment opportunities which raises the standards of living of the people
- Promotion of tourism which generates foreign exchange which is used to develop other sectors of the economy
- Promotes industrialization as raw materials can be transported to the processing areas and finished products to the markets cheaply.
- Has enhanced mobility of labour reducing labour shortages
- Generates revenue to the government through taxation/income to their owners.
- Promotion of international understanding as people from different countries are now in close contact and are appreciating other peoples culture
- Transport opens up remote areas for exploitation of natural resources such as minerals.

8. (a) (i) What is forestry? (2mks)

- Is the science of developing and managing forests including cultivating them.

(ii) State three characteristics of planted forests (3mks)

- The forests consists of similar tree species
- The trees are planted in rows
- The trees take a short period to mature
- There is little or no undergrowth

(b) (i) Name two soft wood trees which grow in Canada (2mks)

- Douglas fir
- Pine
- Spruce
- Cedar
- Cypress

(ii) Explain three ways in which coniferous forests are adapted to the cold climate (6mks)

- The trees are conical in shape to prevent accumulation of show during winter.
- The trees have thick barks with a lot of resin which protects them from frost.
- The trees have shallow roots to enable them to fully utilize the moisture in top soil.
- The trees have needle like leaves/narrow to reduce transportation during summer.

(iii) Give four problems facing forestry in Kenya (4mks)

- Clearing of forests to give room/land for expansion of agriculture and settlements.
- Large acreage of forests are destroyed by fire started by Poachers, lumberjacks etc.
- Forests are attacked by pests eg aphids, which destroy large areas of forests.
- Over exploitation of forests due to high demand for timber products.
- Some forests have been turned into game reserves while other parts of the forests have been converted into public utility facilities e.g Agricultural show grounds.
- Wild animals cause damage to forest plants.

(c) State three measures taken by the Kenyan government to conserve forests (3mks)

- Afforestation - This is the planting of trees in areas where forests have been cleared.
- Creation of forest reserve to prevent soil erosion and protect water catchment areas.
- Setting up Nyayo tea zones to act as buffer belt.
- Agro-forestry - This is intercropping of various crops with trees.
- Community is being encouraged to participate in tree planting.

- Legistlation - Setting up laws to help in forest conservation

(d) Compare forestry in Kenya and Canada under the following sub-headings

Transportation (2mks)

In Kenya logs are transported by tractors and lorries while in Canada they are transported by floating them on water and tractors.

Market (2mks)

Most of the wood products in Canada are exported while in Kenya they are sold locally.

Tree species (2mks)

In Kenya both hardwood and softwood trees are grown while in Canada only softwood trees are grown

9. (a)

(i) Identify two processes used to reclaim swamps in Kenya (2mks)

- Digging ditches/trenches directing the swamp water downslope.
- Laying pipes in the swamp to direct water out of the area
- Regulating and controlling the water that feeds the swamp by building dykes.

(ii) Give three irrigation methods used in Kenya (3mks)

- Overhead irrigation
- Canal or furrow irrigation
- Drip irrigation
- Bucket irrigation
- Lifting water with containers from a river.

(b) Explain three human factors that favour irrigation farming in the Mwea Irrigation scheme (6mks)

- Availability of cheap/free labour from detainees.
- Ready market from densely populated surroundings
- Low population density in Mwea plains ensures that there is room for expansion of scheme without displacing people.

(c) Explain how the following problems affect irrigation farming in Kenya

a. Presence of weeds in the farm (2mks)
Presence of weeds in the farm competes for nutrients with the crop under cultivation hence lowering yields.

b. Low volume of water during the dry season (2mks)
Low volume of water during dry season reduces amount of water required for irrigation.

c. Expensive farm inputs (2mks)
Expensive farm inputs discourages the farmers as it lowers their income/returns

(d) Explain four ways in which irrigation farming is of significance to the economy of Kenya (8mks)

- It encourages development of infrastructure such as roads and electricity.
- Has attracted settlements such as urban centres near and within the schemes hence emergence of towns.
- Has increased crop production in the country hence creating food security.
- It earns the county foreign exchange as some of the farm produce are exported.
- It has led to development of processing factories such as rice mills and fruit processing factories thus diversifying the economy.

10.

(a) (i) What is industrialization ? (2mks)

- Is the process of which a country establishes industries.

(ii) Explain how the following factors influence the location and development of industries

Raw materials (2mks)

- Raw materials required must be in steady supply to ensure continuous supply of goods. Industries that deals with raw materials that are bulky/perishable are located near the source of raw materials.

Water (2mks)

- Some industries especially those that use agro based materials require a lot of water for processing hence are located near sources of water e.g coffee, processing industries.

(b) (i) Name two agricultural non-food manufacturing industries in Kenya (2mks)

- Textile industries
- Sisal processing
- Leather tanning industries
- Tobacco processing industries
- Pyrethrum processing industries
- Saw milling/paper making industries
- Foot wear making industries

(ii) State four characteristics of Jua Kali industries in Kenya (4mks)

- They are operated by individuals/small groups
- They require low capital investments
- They use simple tools/equipment
- They use local/recycled raw materials
- They use basic/simple skills in craft
- They are mostly operated in open/sheds
- They are pursued as part time or full time occupation

(iii) Give three problems facing Jua Kali industries in Kenya (3mks)

- Difficulty in getting raw materials
- Inadequate capital for expansion'
- Competition from other well established industrial competition from imported goods.
- Inadequate marketing skills/strategies of the product
- Lack of proper sheds, hence goods destroyed by weather elements
- High cost of power/electricity
- Exploitation by middlemen
- Low demand for products due to negative public image

(c) State four ways in which industrialization is significance in Kenya (4mks)

- Export of manufactured products earns Kenya foreign exchange.
- Creation of employment opportunities by manufacturing industries
- Has led to improvement of transport and communication networks eg roads
- Industries have stimulated establishment of social amenities e.g schools, hospitals
- Has improved balance of trade between Kenya and her partners
- Has helped diversify economy which is mainly dependent on agriculture
- Selling of her products to other countries has helped to foster international relations with other countries in America, Europe, Asia and Africa.

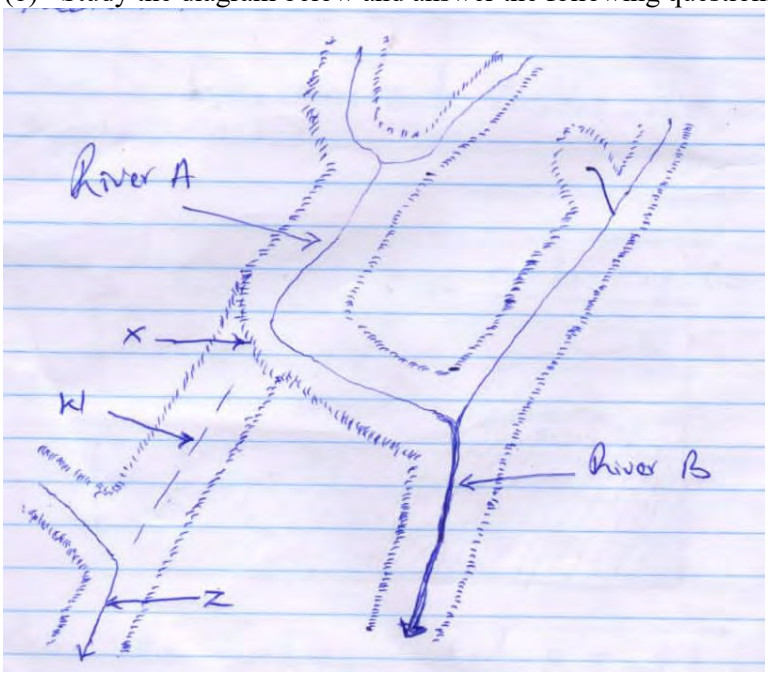
(d) Explain three factors which influenced the location of iron and steel industry in the Ruhr region of Germany in the 19th Century (6mks)

- Availability of raw materials e.g coal iron.
- Availability of water from River Rhine, Ruhr etc for cooling machines in industries.
- The region is served by navigable rivers hence proving cheap transport for bulky raw materials and finished products
- Coal from Ruhr region provided power required in industries
- Availability of labour from rich companies and families e.g Ruhr Kuhle which was used for establishment of industries.
- Dense and affluent population in central and western Europe provided ready market for iron and steel.

IGAMBA NG'OMBE
GEOGRAPHY PAPER 1
MARKING SCHEME

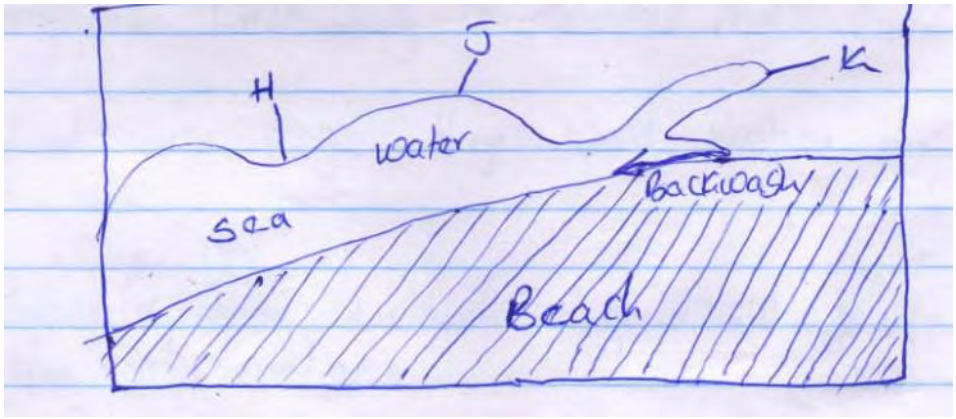
SECTION A:
INSTRUCTIONS: Answer all the questions in this section

1. (a) What is environment (2 mks)
   (b) State any three reason why it is important to study Geography. (3 mks)
2. (a) Give three forces responsible for the shape of the earth (3 mks)
   (b) Given that time at Robot, Morocco 5^0W is 8:00a.m. Calculate the longitude at Mogadishu where time is 11:00a.m. (3 mks)
3. (a) Differentiate between weather and climate. (2 mks)
   (b) Give three processes in which atmosphere is heated. (3 mks)
4. (a) What is mass wasting? (2 mks)
   (b) State two economic benefits of the weathering process. (2 mks)
5. (i) Name two types of tectonic plate boundaries. (2 mks)
   (ii) List three mountain ranges formed as a result of tectonic movement in the world. (3 mks)
6. Study the map of Kijabe (1:50,000) provided and answer the following questions.
   (a) (i) What is the approximate height of the top of Kijabe hills? (1 mks)
   (ii) Measure the length of Nairobi-Naivasha railway line from landline (grid reference 257987) to the level crossing near Kijabe station (grid reference 308984) Give your answer in kilometres. (2 mks)
   (iii) Give the latitudinal extent of the area covered by the map. (2 mks)
   (b) Describe the drainage of the area covered by the map. (4 mks)
   (c) Explain how relief has influenced the distribution of settlement in the area covered by the map. (4 mks)
   (d) Citing evidence from the map, state four social activities carried out in the area covered by the map. (4 mks)
   (e) Suppose you were a student in the school at Kinari (Kinale) and you plan to carry out a field study of Wakagwe forest.
   (i) Design a working programme (schedule) you would use during the day of the study. (3 mks)
   (ii) Give three reasons why it would be necessary to sample part of the forest for the study. (3 mks)
   (iii) State two ways in which your finding would be useful to the local community. (2 mks)
7. (a) (i) Differentiate between watershed and catchment area. (2 mks)
   (ii) Explain three ways in which a river transport its load. (6 mks)
   (b) Study the diagram below and answer the following questions.



(i) Name the features marked X, W and Z. (3 mks)
(ii) Explain the process of river capture. (3 mks)
(c) Give three characteristics of a river in its youthful stage. (3 mks)
(d) Explain four economic importance of a river to human activities. (8 mks)

8. (a) (i) Give two types of ocean water movement. (2 mks)
(ii) State three factors that influence speed of water movement in oceans. (3 mks)
(b) (i) Apart from hydraulic action, name two other processes of wave erosion. (2 mks)
(ii) Describe how waves erode coastline through hydraulic action. (5 mks)
(c) The diagram below shows a breaking sea wave.



i) Name the features marked H, J, and K. (3 mks)
ii) Explain two factors which influence wave deposition. (4 mks)
(d) Students are planning to carry out a field study on coastal landforms in Kenya.

(i) State four reasons why it is important to carry out a pre-visit of the area. (4 mks)
(ii) One of the ways they would use to collect is through direct observation. Give two disadvantages of direct observation in the study of such an area. (2 mks)

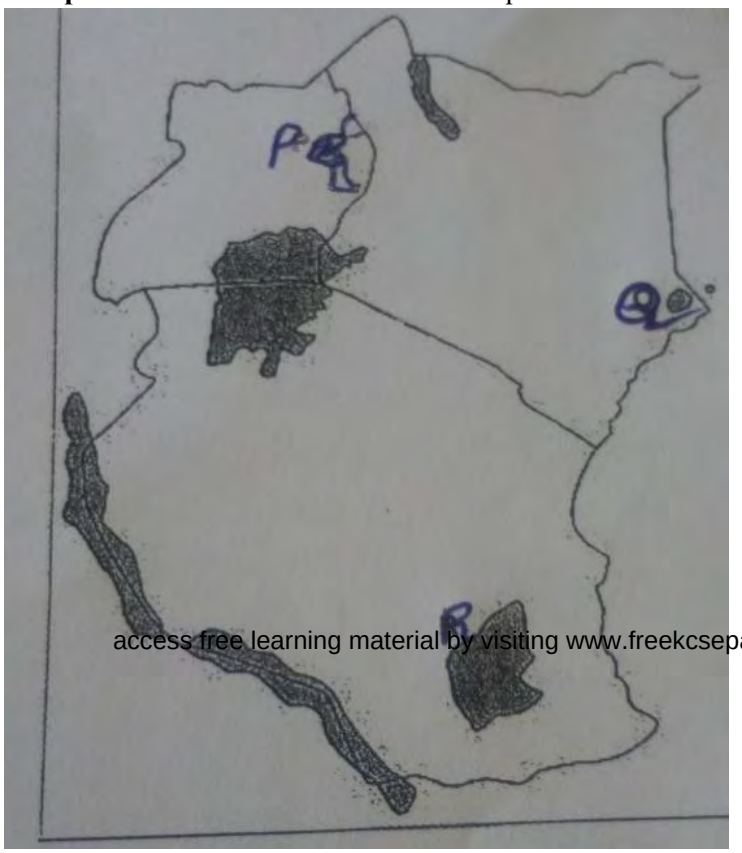
9. (a) (i) Define the term soil (2 mks)
(ii) Name three component of soil. (3 mks)
(b) (i) State and explain three factors that influence soil formation. (6 mks)
(ii) Outline three ways by which humus contributes to the quality of soil. (3 mks)
(c) Geography students from your school intends to carry out field study of eroded arear near the school.
i) List two ways they would prepare for the study. (2 mks)
ii) Identify two methods they would use to record the observations. (2 mks)
iii) State three recommendations they would give to control soil erosion in the area. (3 mks)
(d) Draw and label parts of a soil catena. (4 mks)

10. (a) (i) Name three types of desert surfaces. (3 mks)
(ii) Explain any three factors that make wind an effective agent of erosion in desert areas. (6 mks)
(b) Using a well labelled diagram, describe how a mushroom block is formed (4 mks)
(c) State four factors that influence wind transportation. (4 mks)
(d) (i) Describe how the following processes of wind transport occur over desert surfaces.
i) Saltation (2 mks)
ii) Surface creep (2 mks)
iii) State four significance of desert features. (4 mks)

IGAMBA NG'OMBE
GEOGRAPHY PAPER 2
DECEMBER 2021

SECTION A:

1. (a) What is mining? (2 mks)
   (b) Name three main mining methods. (3 mks)
2. (a) Name two tourist attractive found in Kenya. (2 mks)
   (b) Use the map of east Africa below to answer the questions.



   (i) Name the game reserves marked P, Q and R. (3 mks)
3. Identify five ways that are sued to control floods in Kenya. (5 mks)
4. (a) Apart from purse seining name two methods used in deep sea fishing. (2 mks)
   (b) Describe purse seining as a method of fishing. (4 mks)
5. (a) Differentiate between manufacturing and tertiary industries. (2 mks)
   (b) State two reasons why paper milling industries are located near rivers. (2 mks)

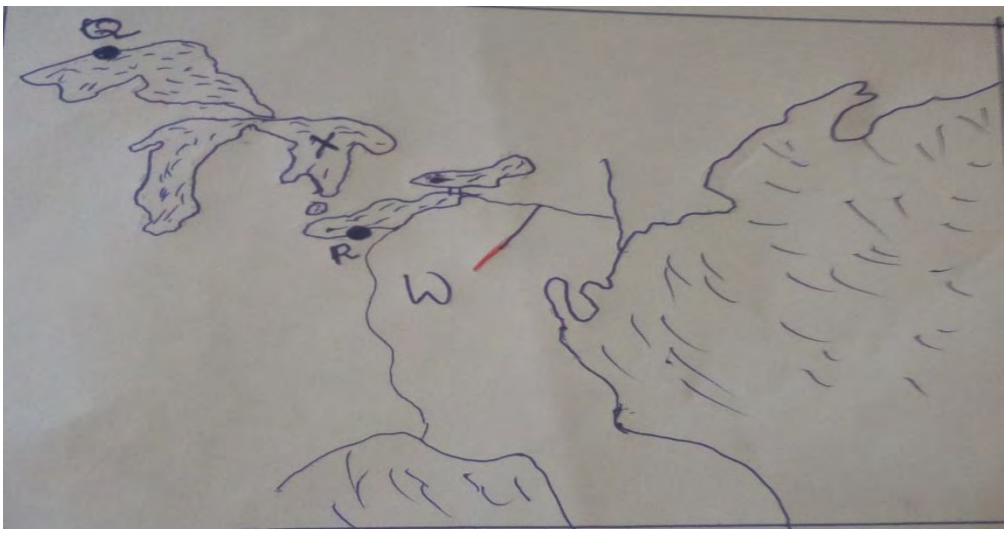
SECTION B

6. The table below shows the amount in Kenyan export crop from 2009 – 2011

Crop/year	2009	2010	2011
Tea	34,120	39,120	45,200
Coffee	50,000	55,040	65,500
Sugarcane	120,480	96,480	100,400
Horticulture	80,090	70,840	75,900

(a) Draw a divided rectangle 15cm long to represent;
  (i) The information from the table above. (8 mks)
  (ii) State two advantages of using a divided rectangle to represent the data. (2 mks)
(b) (i) State four physical conditions required for growing cocoa. (4 mks)
  (ii) Describe the stages involved in processing of cocoa from harvesting to marketing. (8 mks)
(c) Give three economic problems experienced in cocoa farming in Ghana. (3 mks)

7. Below is a sketch map showing part of the great lakes and St. Lawrence sea way. Use it to answer question (a)



(a) Name;
  i) The part marked Q and R (2 mks)
  ii) The canal marked W. (1 mk)
  iii) The lakes marked X (1 mk)
(b) Explain four benefits of the great lakes and St. Lawrence sea way to the economies of USA and Canada. (8 mks)
(c) (i) Name two international airports in Kenya. (2 mks)
  (ii) Give three advantages of air transport. (3 mks)
  (iii) Explain four efforts that the Kenya government has taken to improve air transport. (8 mks)

8. (a) Name three sources of renewable energy. (3 mks)
(b) (i) Explain three physical factors that influence the establishment of hydro-electric power dams. (6 mks)
  (ii) Name three main hydro-electric power stations along the river tana. (3 mks)
(c) (i) What is energy crisis? (2 mks)
  (ii) Explain three ways in which energy crisis affect the economy of Kenya. (6 mks)
(d) Some students carried out a field study on the sources of energy.
  (i) Give two methods that they used to collect the information on sources of energy. (2 mks)
  (ii) Give follow-up activities that they carried out after the field study. (2 mks)

9. (a) Give three causes of mortality in Kenya. (3 mks)
  (ii) State two ways in which the spread of Covid 19 in Kenya may slow down economic development. (2 mks)
(b) Explain how the following factors have led to population increase in Kenya (4 mks)
  (i) Cultural
  (ii) Migration
(c) Explain four problems which results from a high population in Kenya. (8 mks)
(d) Explain four physical factors that influence population in East Africa. (8 mks)

10. (a) Define the term environment management. (2 mks)

(b) (i) Name two areas in Kenya that are prone to lightening. (2 mks)
(ii) State four problems caused by lightening. (4 mks)
(iii) Explain three ways in which the menace of pest can be controlled in kenya. (6 mks)

(c) Explain three measures that the government of Kenya has taken to conserve the environment. (6 mks)

(d) Your class intends to carry out a field study in the limestone mining areas.
(i) Identify two types of pollution that may observe. (2 mks)
(ii) What problems are likely to encounter during the study. (3 mks)

IGAMBA NG'OMBE
GEOGRAPHY PAPER 1
MARKING SCHEME

NOVEMBER/DECEMBER 2021

SECTION A:

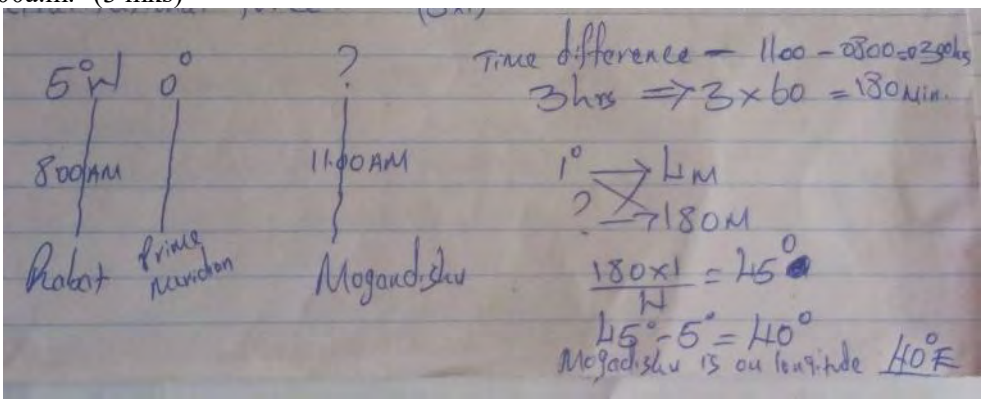
1. (a) What is environment (2 mks)
External conditions surrounding an organism/all external conditions which influencing behavior and survival of living things. **1x2=2 mks**

(b) State any three reason why it is important to study Geography. (3 mks)
- Enables learners to explain the origin of the earth and solar system.
- Helps learners to develop skills of observing, reading, analyzing and interpreting maps, photographs, charts, diagrams etc

- Enables learners to understand and appreciate different environment influences on different people's way of life.
- It encourages international awareness, interaction and cooperation through maps.
- Teaches learners how to manage time properly by drawing a time schedule and adhering to it.
- Creates awareness on environmental conservation and proper use of available resources
- It's a career subject because it creates a foundation for various specialized fields such as engineering, surveying, remote sensing, geography teacher etc. **Any 3x1=3 mks**

2. (a) Give three forces responsible for the shape of the earth (3 mks)
a) Centripetal force
b) Centrifugal force
c) Gravitational force

(b) Given that time at Robot, Morocco 5^0W is 8:00a.m. Calculate the longitude at Mogadishu where time is 11:00a.m. (3 mks)



3. (a) Differentiate between weather and climate. (2 mks)
Weather is atmospheric conditions of a given place at a specific time while climate is the average weather conditions of a place observed over a long period of time 30-55 years.

2x1=2 mks

(b) Give three processes in which atmosphere is heated. (3 mks)

a) Radiation
b) Convection
c) Conduction **3x1=3mks**

4.

(a) What is mass wasting? (2 mks)

Mass wasting is the displacement or movement of weathered materials downslope under the influence of gravity.

(b) State two economic benefits of the weathering process. (2 mks)

- Leads to formation of fertile soils suitable for agricultural activities.
- Leads to breakage of rocks casing quarrying processes for industrial and construction purposes
- Leads to formation of beautiful sceneries which attracts tourists who bringing foreign exchange.
- Exposes valuable minerals easing their exploitation **Any 2x1=2mks**
-

5. (i) Name two types of tectonic plate boundaries. (2 mks)

- Extensional boundary/divergent/constructive
- Compressional boundary/convergent/destructive
- Conservative boundary/transform

(ii) List three mountain ranges formed as a result of tectonic movement in the world. (3 mks)

- Atlas in North Africa
- Cape ranges of South Africa
- Himalaya of Asia
- Alps of Europe
- Rockies of North America
- Andes of South America

6. Study the map of Kijabe (1:50,000) provided and answer the following questions.

(a) (i) What is the approximate height of the top of Kijabe hills? (1 mks)
Between 2660 and 2680 above sea level

(ii) Measure the length of Nairobi-Naivasha railway line from landline (grid reference 257987) to the level crossing near Kijabe station (grid reference 308984) Give your answer in kilometres. (2 mks)
5.6km +- 0.1

(iii) Give the latitudinal extent of the area covered by the map. (2 mks)
36'30˙E to 36˙45'E

(b) Describe the drainage of the area covered by the map. (4 mks)

- The main drainage feature are rivers and are many, most of the rivers are permanent rivers originating from Kijabe hill are short and disappear underground,
- rivers on Kijabe hills from parallel and radial drainage.
- Most rivers form dendritic pattern.
- Main rivers are upper fowase kedong and bathi which flow southward while river gatamaiya and its tributaries flow south-eastwards.
- Most rivers are in their youthful stage.

(c) Explain how relief has influenced the distribution of settlement in the area covered by the map. (4 mks)

Most of the settlement are found at the foot of the escarpment because the land is gently sloping hence can support agriculture/crop farming. The escarpment has no settlement because the land is steep. Kijabe hill has a few settlement on the eastern side because the land is gently sloping/the western side of the hill has no settlement as the land is steep. The land immediate to the east of the escarpment has many settlement because it is plateau/gently sloping.

(d) Citing evidence from the map, state four social activities carried out in the area covered by the map. (4 mks)

Activity		Evidence
a) Administration	-	Police Post at 309
b) Education	-	Schools

c) Health Services - Dispensary/hospitals
d) Religious Services - Church at 3990

(e) Suppose you were a student in the school at Kinari (Kinale) and you plan to carry out a field study of Wakagwe forest.

(i) Design a working programme (schedule) you would use during the day of the study. (3 mks)

Time	Activity
8.10 a.m.	Assemble equipment
8.30a.m.	Depart for the area of study
9.30a.m.	Arrive at the area of study
9.35a.m.	Repor to the forest authorities
9.45-1.00p.m	Lunch
1.00p.m.-3.00p.m	Embark on data collection
3.00p.m	Report back to the forest authorities
3.20p.m.	Report back to school

(ii) Give three reasons why it would be necessary to sample part of the forest for the study. (3 mks)

- Save on time
- Save on energy
- Reduce on expenses

(ii) State two ways in which your finding would be useful to the local community. (2 mks)

- They will be able to identify the tree species that the suitable for the area
- They will be able to work out solutions to heh problems affecting the forest
- The community will use the report to identify the importance of conserving forests
- People will be able to adopt appropriate methods of utilizing the forest

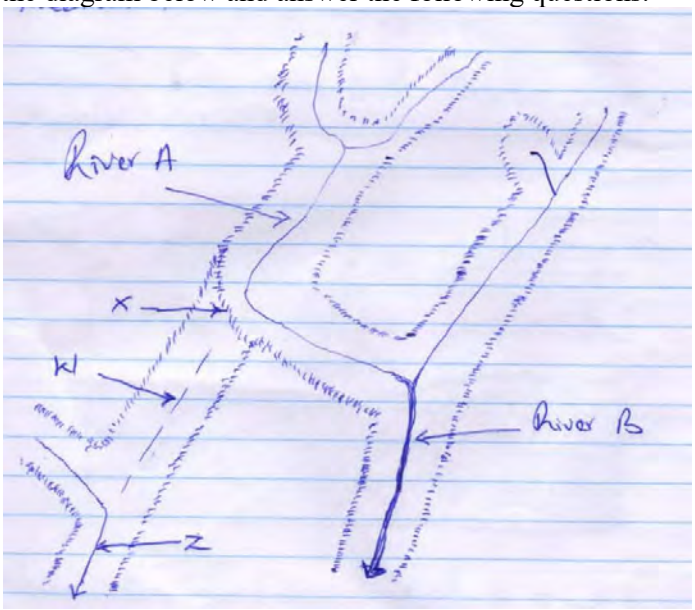
7. (a) (i) Differentiate between watershed and catchment area. (2 mks)

Water shed is a ridge line/boundary separating drainage/river system/basin while catchment area is an area/land from which a river/reservation drains its water/sources of a river/rivers.

(ii) Explain three ways in which a river transport its load. (6 mks)

- Suspension – Light materials are carried with the water turbulence
- Siltation – Particles are carried in a series of hops and jumps
- Traction – Large boulders are dragged along the river bed by pushing power of water assisted by gravity
- Solution – some rock minerals are dissolved and carried in solution form.

(b) Study the diagram below and answer the following questions.



(i) Name the features marked X, W and Z. (3 mks)

a) X – elbow of capture

b) W – wind gap
c) Z – misfit

(ii) Explain the process of river capture. (3 mks)
- There must be also rivers flowing parallel to each other and sharing a water shed, once is more powerful
- A tributary of the powerful river extend. Its long profile through headward erosion.
- They actively eroding river, gradually erodes away the ridge that separates the two rivers.
- The powerful rivers reaches the sources of the weaker river diverting its water into its channel

(c) Give three characteristics of a river in its youthful stage. (3 mks)
- It has narrow V shape valley
- Present of water falls, rapids, and cataract
- Erosion is predominant
- River gradient is steep
- Vertical erosion dominant
- River volume is low
- Presence of gorges, inter locking spars, pothole, pludge pools

(d) Explain four economic importance of a river to human activities. (8 mks)
- Rivers provide water for irrigation, domestic and industrial use.
- Rivers provide route – ways/navigable rivers are used for transportation
- River banks and on beds, sand is corrected for building and construction
- River and its features have beautiful sceneries attracting tourist
- Rivers provide fishing ground providing protein food
- Rivers with water falls and rapids provided site for generation of HEP for domestic and industrial use
- Some rivers provide port facilities especially in the rias and estuaries. E.g. port on matandi on Congo River.
- Some alluvial sediments along the river may contain valuable minerals like gold and diamond.
- During flooding river deposit alluvium on the flood plain and deltas, hence fertile soil for agriculture.
- In youthful stage, rivers cut deep valley in the mountains creating mountain passes used for road and railway construction.
- Some rivers form natural boundaries between division, provinces, county and countries.

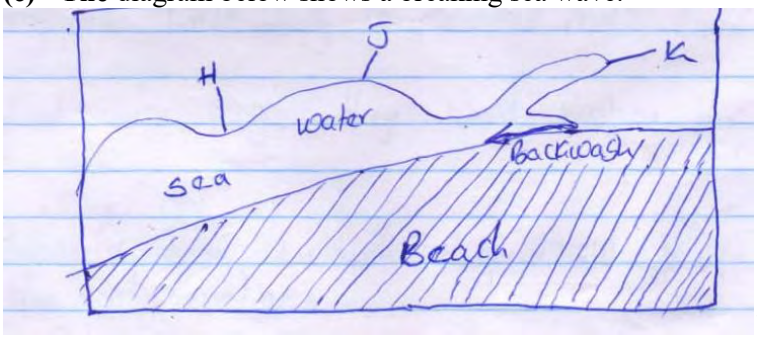
8. (a) (i) Give two types of ocean water movement. (2 mks)
- Horizontal movement
- Vertical movement

(ii) State three factors that influence speed of water movement in oceans. (3 mks)
- Temperature of the ocean water
- Strength of wind
- Shape of the land masses
- Earth's rotation

(b) (i) Apart from hydraulic action, name two other processes of wave erosion. (2 mks)
- Corrosion
- Attrition
- Solution

(ii) Describe how waves erode coastline through hydraulic action. (5 mks)
- Water thrown against a cliff face may compress air in cracks and crevices.
- When waves retreat, pressure is released and air eventually cracks enlarges shattering the rocks. This form of hydraulic action is referred to as compressed air action. **OR**
- The breaking wave may found the ground/cliff with a great force.
- The force weakens the cliff creating cracks. Repeated rounding causes the cracks to enlarge.
- Later the rocks breaks down. This form of hydraulic action is known as direct wave force.

(c) The diagram below shows a breaking sea wave.



i. Name the features marked H, J, and K. (3 mks)
- Trough
- Crest
- Swash

ii. Explain two factors which influence wave deposition. (4 mks)
- Energy of the breaking wave – when the waves energy to transport becomes weak, it deposits the load
- Depth of the water – deposition occurs in shallow waters where waves break, lose energy and drop the materials.
- Gradient of the share – a gentle shore reduces the speed of the backwash, causing the deposition of materials from the shore
- Nature of materials – waves deposits heavier materials first, while lighter materials are deposited further and closer to land.
- Configuration of the coastline – deposition occurs where coastline does change direction inland.

(d) Students are planning to carry out a field study on coastal landforms in Kenya.

(i) State four reasons why it is important to carry out a pre-visit of the area. (4 mks)

- To introduce yourselves to the authorities and respondents in the area.
- To identify methods and tools to use in collecting information during the study
- To determine suitability of the place for study
- To identify possible problems to encounter during the study
- To estimate the cost of study and plan accordingly
- To know how to prepare a working schedule

(ii) One of the ways they would use to collect is through direct observation. Give two disadvantages of direct observation in the study of such an area. (2 mks)
- It is unsuitable for visually impaired students
- The learner may be biased hence may record observations incorrectly
- It is difficult to use when the weather is bad
- It is impossible to use when collecting data on past activities
- It is expensive as one has more from one place to another collecting data.

9. (a) (i) Define the term soil (2 mks)

Soil is an accumulation of rock particles, minerals, organic matter, water and air found on the surface of the earth. It is the superficial layer of loose unconsolidated rock material overlaying the crust rock and on which plants grow.

(ii) Name three component of soil. (3 mks)
- Soil air/gases
- Soil water/moisture
- Soil organic matter minerals
- Soil inorganic matter/minerals

(b) (i) State and explain three factors that influence soil formation. (6 mks)
- Climate – rainfall provide water which make it possible for rocks to decay/disintegrate to form soil.

High temperature increase the rate of weathering/ accelerate the rate of bacterial activities which generate some of the organic matter in the soil. Water, ice and wind erode transport to deposit soil particle in other area leading to the formation of new soil.

- Topography – valley bottom/gentle slopes encourage the formation of deep and fertile soil due to deposition accumulation of materials. Steep slopes encourages erosion of the top layer of soil thus slowing down formation of soil/have thin soil. flat plains/flood plains are saturated with water therefore slows down forming process. Slope influences arrangement/sequence of soil/steep slopes are more exposed to the sun/rain which influence weathering of parent rock/soil forms.
- Living organisms – bacteria fixes nitrogen into most nodules of plants. Roots of plants modify the soil by adding more porosity. They also improve on the soil depth and aeration. Vegetation influences the fertility of soils. Places with dense vegetative cover are ideal information of fertile humus laden soil. Human activities grazing, cultivation use fertilizers and construction may lead to change in the nature of soil in the affected areas. For instance, overgrazing may loosen the soil particles and subsequently the soil gets eroded.
- Topography – soil on the top hilly areas are heavily reached. Soils are deep and fertile in place and valley bottom because of deposition of materials. Time where soil has taken longer time, the soil are generally deep and well developed``````

(ii) Outline three ways by which humus contributes to the quality of soil. (3 mks)

- Help soil to retain moisture
- Aerates the soil
- It improves essential minerals to the soil
- It improves the soil texture/structure

(c) Geography students from your school intends to carry out field study of eroded area near the school.

i) List two ways they would prepare for the study. (2 mks)

- Seeking permission
- Conduct a reconnaissance
- Adjust objectives and hypotheses
- Choose methods of data collection
- Assemble necessary tool
- Prepare a working schedule
- Divide students into groups

ii) Identify two methods they would use to record the observations. (2 mks)

- Field sketching
- Taking photographs
- Tallying
- Tape recording
- Note taking
- Labeling sample
- Filling in questionnaires

iii) State three recommendations they would give to control soil erosion in the area. (3 mks)

- Construction of check dams
- Afforestation or re-afforestation
- Filling in guillies
- Construction of drainage trenches
- Practicing appropriate methods of farming and planting cover crops, mulching or terracing or contour ploughing, crop rotation, strip cropping.

(d) Draw and label parts of a soil catena. (4 mks)

10. (a) (i) Name three types of desert surfaces. (3 mks)

- Sandy desert
- Stony desert
- Rocky desert

(ii) Explain any three factors that make wind an effective agent of erosion in desert areas. (6 mks)

- Presence of large quantities of loose unconsolidated rock materials which provide tools for scouring/scratching other surfaces.
- Absence of vegetation cover on the surface which enable the wind to move at high velocity
- Some desert surfaces lie in region where strong tropical. Storms blow hence winds are in high velocity.

(b) Using a well labelled diagram, describe how a mushroom block is formed (4 mks)

- A mass of rock of homogenous resistance is found in the path of strong winds in desert landscape.
- The wind laden with sand particles act on the mass of rock through a brassion.
- There is greater concentration of rock particles in the lower part of mowing wind, hence the base is eroded faster than the top.
- The upper part of the rock is gradually published and smoothened forming a rounded top.
- Periodic change in which direction lead to erosion on all side of the rock.
- A rounded mass of rock with a broad top but narrow base resembling a mushroom is formed called a mushroom block.

(c) State four factors that influence wind transportation. (4 mks)

- Strong winds transport heavy materials
- Presence of obstacles reduce the speed of wind
- Presence of light dry and unconsolidated
- Presence of vegetation which hinder transportation of materials.

(d) (i) Describe how the following processes of wind transport occur over desert surfaces.

i) Saltation (2 mks)

Course grained sand particles are transported through a series of bouncing or jumping along the surface.

ii) Surface creep (2 mks)

Large/heavy materials are rolled and pushed forward by wind along the surface

(ii) State four significance of desert features. (4 mks)

- Wind deflation hollow/oasis are sources of water for domestic use/agriculture

- Desert landscapes are idea for military training/nuclear testing
- Sand dunes hinder transport activities
- Loess in wetter lands can be used for agriculture
- Features like rock pedestals, yardangs and zeugens at
- tracts tourists.

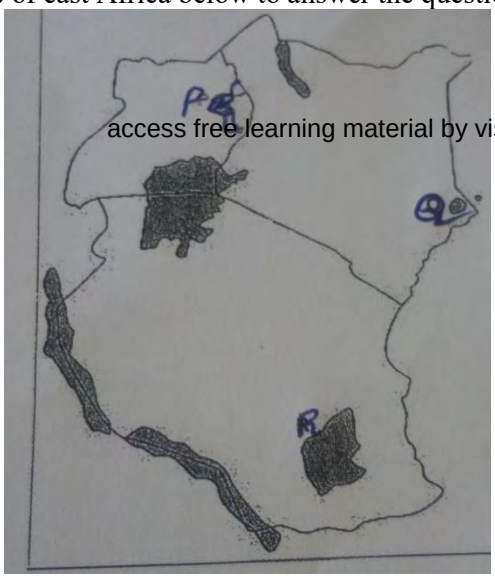
IGAMBA NG'OMBE
GEOGRAPHY PAPER 2
MARKING SCHEME

SECTION A:

1. (a) What is mining? (2 mks)
   Mining is the extraction of minerals occurring on/below the earth's surface **1x2 = mks**
   (b) Name three main mining methods. (3 mks)
- Surface/opencast mining
- Alluvial mining
- Submarine mining
- Underground mining **3x1=3 mks**

2. (a) Name two tourist attractive found in Kenya. (2 mks)
- Rift valley
- Lakes – L. Nakuru, Baringo, Naivasha, Elementaita
- Mining sites – Kariandusi
- People culture
- Nakuru National Park
- Hotsprings/geysers/fumaroles/geothermal
- Menengai crater
- Water falls – thomson falls. **2x1 = 2 mks**

(b) Use the map of east Africa below to answer the questions.



(i) Name the game reserves marked P, Q and R. (3 mks)
- P – Bolsora game reserve
- Q – Boni game reserve
- R – Selous game reserve **3x1=3 mks**

3. Identify five ways that are used to control floods in Kenya. (5 mks)
- Constructing channels/ditches/furrows to drain off the water
- Constructing dykes/levees along river banks
- Dredging/widening of river channels
- Building of dams across rivers
- Re-directing/draining/straightening rivers
- Planting trees in the catchment areas. **5x1=5mks**

4. (a) Apart from purse seining name two methods used in deep sea fishing. (2 mks)
- Trawling

- Drifting
- Line fishing **2x1=2mks**

(b) Describe purse seining as a method of fishing. (4 mks)

a) Purse seining as a method of fishing as well as a large net. The net has floats on tops and weights at the bottom to keep it in a vertical position while in water. The net has as string along its bottom edge. The fishermen begin by locating a sheal/area rich in fish. The small boat drags the net to enclose the area that has fish. The string at the bottom of the net is pulled to close the net at the bottom and trap the fish. The net is pulled out of the water and fish hauled into the large boat.

5. (a) Differentiate between manufacturing and tertiary industries. (2 mks)

Manufacturing industries change raw materials into finished products/commodity ready for use while tertiary industries provide services facilities for use by other industries/consumers.

1x2=2 mks

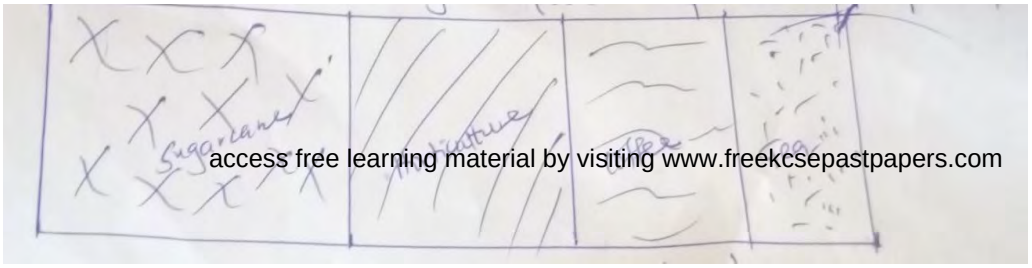
(b) State two reasons why paper milling industries are located near rivers. (2 mks)

- Industries need large amount of water for cleaning
- Industries use water for cooling machines.
- The industries dispose of their waste material through water.
- Water provide cheap means of transport
- Some industries use water to debark the logs. **2x1=2 mks**

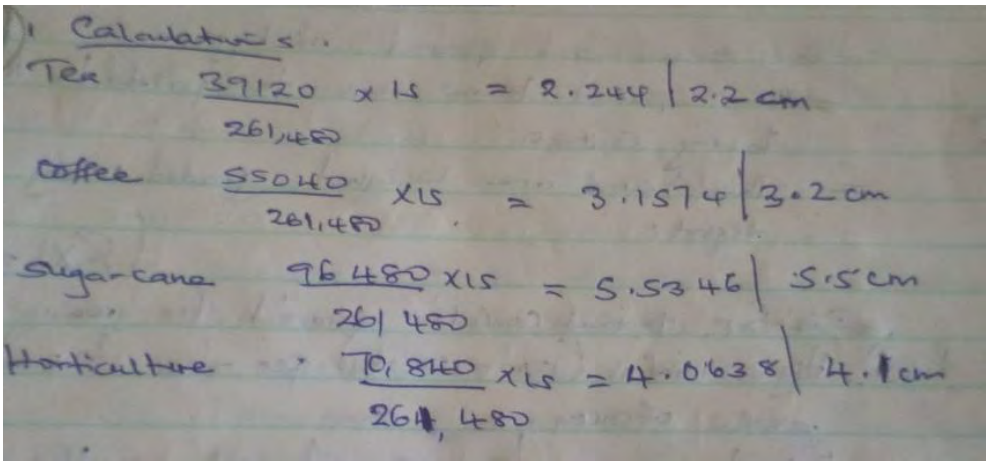
SECTION B

6. The table below shows the amount in Kenyan export crop from 2009 – 2011

(a) (i) Draw a divided rectangle 15cm long to represent the information from the table above. (8 mks)



Title 1mk
Calculations 2mks
Rectangle 1mk
Each part 1mk
Total 8mks



(ii) State two advantages of using a divided rectangle to represent the data. (2 mks)

- Gives clear visual impression
- Allows for comparison
- Easy to read/interpret
- Can be used to represent a wide range of data

- Easy to construct.

(b)

(i) State four physical conditions required for growing cocoa. (4 mks)

- High rainfall (1300-1500mm) per year to enhance growth of cocoa.
- High temperature/24-30^{0}C to enhance growth of cocoa
- Deep soil for proper anchorage
- Well drained soil for for high production.
- High humidity/70-80% to enhance availability of moisture in the soil.
- Indulating/low land (0-70m a.s.l)
- Sunshine for ripening for cocoa pods
- Shade for strong sun rays for the seedlings
- Shelter from strong sun rays for the seedlings
- Shelter from strong winds from protective.

(ii) Describe the stages involved in processing of cocoa from harvesting to marketing. (8 mks)

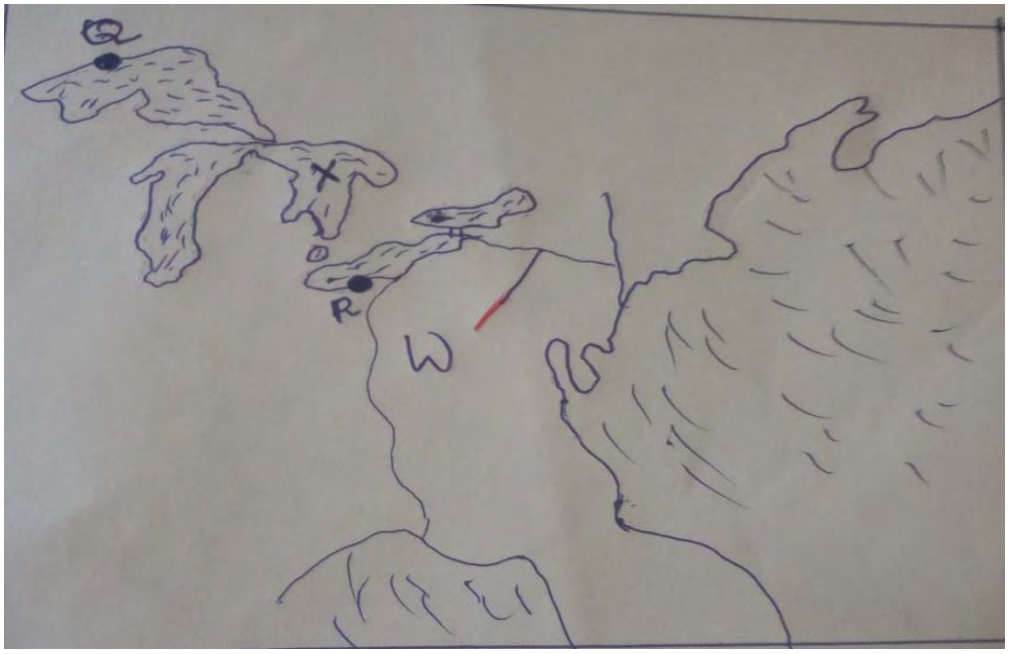
- Pods are cut using a sharp knife
- The pods are collected and pilled at a central place
- The pods are split open using a sharp knife
- The beans are scooped by rod
- The cocoa bean are heated on a mats and covered with banana leaves to ferment for 5-6 days as the pulp drains away.
- The beans are spread on tables covered by mats to dry in hot
- The beans are turned frequently until they turn brown.
- The beans are packed in bags
- The packed beans are transported to the buying centres.
- The beans are weighed, graded ready for export. **8x1=8 mks**

(c) Give three economic problems experienced in cocoa farming in Ghana. (3 mks)

- Fluctuation of prices in the world market

- High production costs
- Competition from other beverages
- Inadequate labour during harvesting.

7. **Below is** a sketch map showing part of the great lakes and St. Lawrence sea way. Use it to answer question (a)



(a) Name;

i) The part marked Q and R(2 mks)
Q – Port Arthur R-Cleveland

ii) The canal marked W. (1 mk)
New York State Barge Canal

iii) The lakes marked X (1 mk)
Lake Huron

(b) Explain four benefits of the great lakes and St. Lawrence sea way to the economies of USA and Canada. (8 mks)

- They have encouraged trade/agriculture in both countries by providing cheap means of transport
- They have created employment opportunities in the transport industry thus raising the standards of living of the people in the area
- The country earn revenue from both charges levied on ship that use the routes.
- They are tourist attractions hence earn the country foreign exchange.
- They have led to the growth of ports/towns along the route which are focal points for various economic activities
- Easy movement of raw materials/finished goods products facilities the growth of industries/trade.
- The reservoirs along the route provide hydroelectric power for domestic/industrial use.

(c) (i) Name two international airports in Kenya. (2 mks)

- Jomo Kenyatta airport – Nairobi
- Moi international airport – Mombasa
- Eldoret international airport

(ii) Give three advantages of air transport. (3 mks)

- Faster than roads
- More efficient transporting perishable goods/valuable/high value goods.
- More comfortable than road transport
- Experiences less traffic congestion than roads
- Fewer accidents than road transport
- Planes can be used for activities like spraying farms.
- Helicopters can land in remote areas unlike roads.

(iii) Explain four efforts that the Kenya government has taken to improve air transport. (8 mks)

- Expansion of the international airport to handle more goods and passengers.
- Liberalization of the air transport industry allowing different airlines to venture in the industry such as air Kenya and safari link. This has improved service delivery as it encourage competition.
- By supporting Kenya airways to buy new air craft with large carrying capacity e.g. Boeing 777 – 300ER, Embraer E-1901
- The government has increased surveillance to improve security along the roads leading to airports and other parts of the country.
- By upgrading and maintaining the roads leading to international airports.
- The government has increased surveillance to improve security along the roads leading to airports and other parts of the country.

8. (a) Name three sources of renewable energy. (3 mks)

- Wind
- Sun
- Water
- Tider/waves
- Geothermal steam
- Bio mass
- Wood/trees **3x1=3mks**

(b) (i) Explain three physical factors that influence the establishment of hydro-electric power dams. (6 mks)

- Presence of hard basement rock which provides a foundation for a dam
- Large volume of water/constant supply of water to enable production of electricity.

- Presence of narrow gauge behind the dam which minimizes the cost of construction of the dam.
- Presence of steep rivers/water falls/rapid to provide sufficient hydraulic force to turn the turbines.
- The presence of impervious rock to prevent seepage. **3x2=6mks**

(ii) Name three main hydro-electric power stations along the river tana. (3 mks)

- Masinga
- Kamburu
- Gitani
- Kindaruma
- Kiambere **3x1=3mks**

(c) (i) What is energy crisis? (2 mks)

Energy crisis refers to a situation where he prices of fossils fuels rise uncontrollably as s result of short supply relative to demand.

(ii) Explain three ways in which energy crisis affect the economy of Kenya. (6 mks)

- The increase in the prices of crude oil make Kenya to spend of a lot of foreign exchange in importation. This lowers the foreign reserve bringing about ufavourable balance of trade which slows down the rate of economic growth.
- Increase in oil prices triggers increase in the price of commodities leading to low standards/ high cost production slowing down industrial growth.
- Oil crisis leads to scarcity of byproducts of oil leading to shortage of raw materials for certain industries.
- Increases in oil leads to increase in process of farm inputs which in turn leads to reduced agricultural production/leads to food crisis.
- Increase in fuel prices lead to increase in transport costs which trigger price increase in almost alt sectors of the economy.

(d) Some students carried out a field study on the sources of energy.

(i) Give two methods that they used to collect the information on sources of energy. (2 mks)

- Interview
- Observation
- Taking photographs
- Administering questionnaires.

(ii) Give follow-up activities that they carried out after the field study. (2 mks)

- Discussing the findings
- Drawing sketches
- Displaying photographs/sketches
- Writing a report
- Analysis data **3x1=3mks**

9. (a) Give three causes of mortality in Kenya. (3 mks)

- Natural calamities
- Conflicts/wars
- Diseases/epidemics
- Low nutritional standards
- Road carriage **3x1=3mks**

(ii) State two ways in which the spread of Covid 19 in Kenya may slow down economic development. (2 mks)

- The sickness may lead to absenteeism from work/reduced productivity
- Money spent in treating the sick could be used for other economic activities.
- Death resulting from the disease lead to loss of economically productive population
- Care takers at family level use more time caring for the sick/high dependency ratio. **2x1=2mks**

(b) Explain how the following factors have led to population increase in Kenya (4 mks)

(i) Cultural

- Sex preference in Kenya families has influenced population growth in Kenya. The birth of a son is highly regarded couples that have only given birth to girls continue getting more children in the hope of eventually getting a boy leading to increase in population in Kenya.
- Naming of relatives from mans and woman's side among some communities result to large families.
- Polygamy. Marring many wives as sign of high esteem lead to increase in number of children result to increase in population in Kenya.
- Early marriage in some communities in Kenya gives the woman high chances of giving birth to many children resulting to an increase in population.

Max 2x1=2mks

(ii) Migration

Large numbers of refugees from Somalia and southern Sudan has flocked into the country due to civil wars. Their growth as well as births has led to increase in Kenyans population.

(c) Explain four problems which results from a high population in Kenya. (8 mks)

- The large number of youthful population create a high dependence ratio which cause slow economic growth.
- The high demand food caused by the high population growth rate has led to food shortage resulting to population being under nourished/prone to diseases.
- The government is unable to provide adequate social amenities leading to overcrowding/strain on the few amenities.
- A high population growth rate creates problems of land fragmentation as land is subdivided among family members. This leads to an increase in squatters, landlessness and deforestation.
- Opportunities available for employment are unable to increase at eh same rate as population. This leads to a situation where there are many unemployed skilled people resulting to rise in crimes.
- The high population in town has made transport inadequate and expensive resulting to congestions at community points.
- More land is likely to be used in the production of food crops at the expense of cash crops hence resulting the country's foreign exchange.

4x2=8mks

(d) Explain four physical factors that influence population in East Africa. (8 mks)

- The cool and wet/hot and wet are suitable for farming hence are densely populated. Hot dry areas are unsuitable for agriculture hence have space population.
- Mountains/hilly areas have low temperatures/rugged and this discourage/agricultural activities hence they are sparsely populated/gentle sloping areas are suitable for settlement/agriculture hence are densely populated.
- Areas with fertile soils are suitable for agriculture thus attracting dense population/for agriculture hence sparsely populated.
- Presence of pest/diseases – areas infected with pest/diseases carrying vectors discourage settlement since the condition are unhealthy hence are sparsely populated.
- Low lying areas that are prone to periodic flooding/water logging have sparse population because they are unsuitable for agriculture/settlement.
- Forested areas are gazette areas hence discourage settlement hence sparsely populated. **4x2=8mks**

10. (a) Define the term environment management. (2 mks)

- Environment management is the effective planning and control of processes and activities that would cause deterioration of environment so as to achieve effective utilization.

(b) (i) Name two areas in Kenya that are prone to lightening. (2 mks)

- Kisii
- Kamamega
- Kisumu
- Nyamira
- Homabay
- Migori
- Vihiga
- Busia
- Bungomba

- Tansnzoia
- Uasin gishu
- Bomet
- Elgeyo marakwet

(ii) State four problems caused by lightening. (4 mks)

- Lightening being an electrical discharge can cause loss of human and animal life
- Lightening destroys property such as buildings, cars and trees when it strikes
- Lightening frequently starts fire, which in turn destroys the property around as well as forest fires.
- Lightening interferes with electric power causing power failure
- They interfere with aviation activities as they may strike airplanes.
- It has interrupted communication

(iii) Explain three ways in which the menace of pest can be controlled in Kenya. (6 mks)

- Weeding regulary/use of herbicides destroys the habitat for pests. This reduces the number as well as the rate of destruction of crops.
- Use of chemicals such as insecticides and fungicides help to reduce the number of pest.
- Developing plant species that rare resistant to pest and diseases.
- Using crop rotation farming reduces particular pest as it interferes with life cycles of the pest
- Draining of stagnant water to destroy breeding grounds for pest's habitat.
- Sterilization. It entrails making male pest unable to fertilize so as to control the total population of pest.
- Traps can be used to catch the pest and thereafter they are killed, hence reducing their number.
- Pest such as mosquitoes may be controlled y people sleeping under treated nets such nets kills' mosquitoes on contacts.
- Education on proper use of chemicals to control pests/diseases

(c) Explain three measures that the government of Kenya has taken to conserve the environment. (6 mks)

- The government has made and is enforcing laws governing environment management and conservation.

- The government has set up ministries and parastatals bodies to deal with various aspects of the environment e.g. ministry of environment and natural resources.
- The government has encouraged the private developers to rehabilitate the derelict land e.g. by planting trees.
- Clan up activities I urban area/contracting garbage collection
- Afforestation and reforestation in Kenya there is a national tree planting day in every year.
- Research on various aspects of conserving the environment in institution like KARI/ICIPE
- Kenyan government through her representatives such as chief at community level advice the public to conserve the environment by planting trees/digging terraces and reduce the number of livestock.
- Encouraging use of modern energy saving technology e.g. eco jiko.

(d) Your class intends to carry out a field study in the limestone mining areas.

(i) Identify two types of pollution that may observe. (2 mks)

- Noise/.sound pollution
- Land/soil pollution
- Water pollution

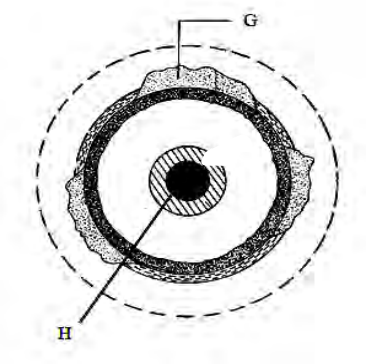
(ii) What problems are likely to encounter during the study. (3 mks)

- Transportation problem such as breaking of vehicles hence interfering with working schedule.
- Sudden rainfall which can slow down the field study.
- Too much noise which can affect communication between resource person and the students.
- Dishonest or uncooperative respondent leading to inaccurate data to be collected.
- Difficult terrain with heaps and deep pits to walk through
- Dusty conditions/toxic gasses hence interfering with data collection.

GATUNDU SOUTH SUB - COUNTY FORM FOUR JOINT EVALUATION TEST 2021
312/1
GEOGRAPHY PAPER 1

SECTION A
Answer all the questions in this section.

1. (a) What is physical Environment? (2 marks)
(b) The diagram below shows the internal structure of the earth.



(i) Name the parts marked: G and H (2 marks)
(ii) Name the dominant mineral in the mantle……. (1 mark)

2. (a) Define the term Aridity. (2marks)
(b) State **three** reasons why wind is the most effective agent of erosion in arid areas. (3 marks)

3. (a) How does topography influence weathering? (2 marks)
(b) Give **three** effects of weathering. (3 marks)

4. (a) Define the term hydrological cycle. (2 marks)
(b) Name **three** importance of water vapour in the atmosphere. (3marks)

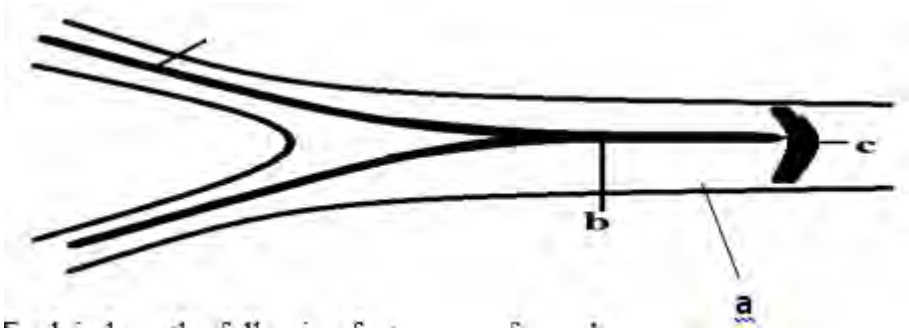
5. (a) Name **two** types of faults associated with formation of the rift valley. (2 marks)
(b) State **three** effects of faulting on drainage of an area. (3 marks)

SECTION B
Answer question 6 and any other two questions in this section.

6. .Study the map of Kijabe 1:50,000[sheet 134/3] provided to answer the following questions.
a) (i) Identify the map series number. (2 marks)
(ii) Name **two** types of scales used in the map. (2 marks)
(iii) Give the vertical interval used in the map. (2 marks)
(iv) Give one natural and one manmade feature at grid square 2598. (2 marks)
b) Calculate the area of the forest crossed by matathia river to the south of the area shown by the map .Give your answer in square kilometers. (3marks)
c) (i) Citing evidence from the map state **three** economic activities carried out in the area covered by the map (6 marks)
(ii) Measure the length of Nairobi- Naivasha railway line from the landhis (grid reference 257987) to the level crossing near Kijabe station at grid reference 304988.Give your answer in kilometers. (2 marks)
d) Describe the drainage of the area covered by the map. (6 marks)

7. a) What is meant by the following terms
i) Glacier (2 marks)
ii) Avalanche (2 marks)
iii) Ice bergs (2 marks)
b) (i) Mention **three** ways in which ice moves. (3 marks)

(ii) The diagram below shows types of moraines in a valley glacier. Name the types of moraines marked a, b and c (3 marks)

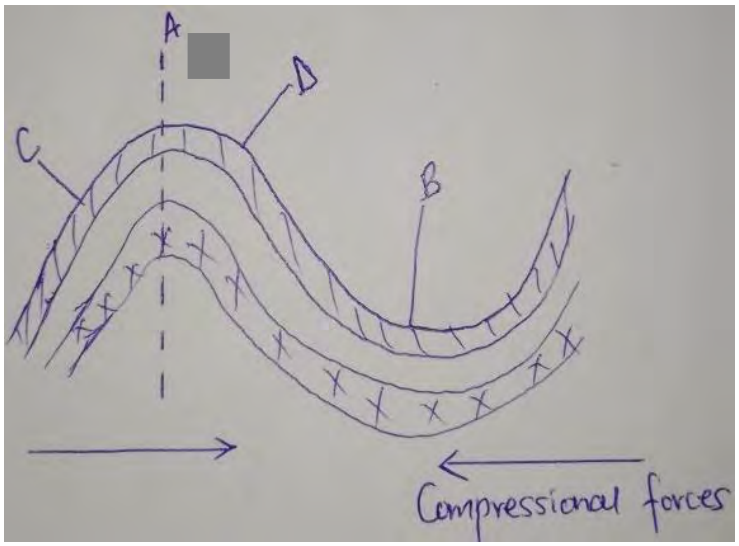


c) Fxplain how the following features are formed:
   (i) corrie lakes (4 marks)
   (ii) Ice eroded plains. (4 marks)

d) Students from Eyasi high school near mt Kenya conducted a field work on glaciated parts of mt Kenya.
   (i) Mention **two** methods they used to collect data. (2 marks)
   (ii) Mention **three** problems they were likely to encounter in the field. (3 marks)

8. a) (i) what is folding . (2 marks)

(ii) The diagram below represents a fold



Name the parts marked A, B and C (3 marks)
   (iii) Identify the type of fold shown in (ii) above. (1 mark)

b) (i) Briefly explain formation of Fold Mountains by contraction theory. (4 marks)
   (ii) Mention **two** fold mountain building periods or orogenies. (2 marks)

c) (i) Apart from the fold shown in a (ii) above, Name **three** other types of folds. (3 marks)
   (ii) Explain how an anticlinorium synclinorium complex is formed. (4 marks)

d) Explain any **three** significance of folding. (6 marks)

9. The table below represents rainfall and temperature of station Y. Use it to answer the questions (a) and (b)

Station Y

Months	J	F	M	A	M	J	J	A	S	O	N	D
Temperature °C	30	31	31	31	30	29	28	29	29	29	29	30
Rainfall (mm)	250	250	325	300	213	25	25	25	100	275	380	200

(a) (i) Calculate the mean annual range of temperature of the station. (1 mark)
(ii) Calculate the annual rainfall total for station **Y**. (2 marks)
(iii) Calculate the average rainfall for station **Y**. (2 marks)
(b) Describe the climatic characteristics of station **Y**. (5 marks)
(c) i) Define the term weather forecasting. (2 marks)
ii) Explain any **four** challenges facing weather forecasting in Kenya. (8 marks)
(d) Explain how humidity is measured using a hygrometer(wet bulb and dry bulb thermometer) (5 marks)

10. (a) i) What is an artesian well? (2 marks)
ii) Explain **three** conditions which are ideal for the formation of an artesian well. (6 marks)
(b) Using a suitable diagram, describe how a stalactite is formed. (5 marks)
(c) Explain **three** ways in which limestone landscapes influence human activities. (6 marks)
(d) Form four students of your school undertook field study on a karst landscape.
i) State **two** reasons why they need a route map. (2 marks)
ii) Give **two** reasons why they need to pre-visit the area. (2 marks)
iii) Give **two** follow – up activities you may have engaged in. (2 marks)

GATUNDU SUB COUNTY EVALUATION EXAMINATION
312/2
GEOGRAPHY PAPER 2

SECTION A

1. a) Define a photograph. 2mks
b) Name **three** classifications of ground photographs 3mks
2. a) What is land reclamation. 2mks
b) Name three methods of land reclamation in Kenya. 3mks
3. a) What is renewable source of energy 2mks
b) Name **three** main hydroelectric power stations along river Tana. 3mks
4 a) Define the term wildlife. 2mks
b) Name the three types of game parks in Kenya. 3mks
5 a) Name two exotic breeds of commercial beef reared in Kenya. (2mks)
b) Outline three similarities of commercial beef cattle farming in Kenya and Argentina. 3mks

SECTION B

6 a) The table below shows sugar production in five major zone in Kenya

Factory	Production in '000' tonnes
Sony	50
Nzoia	100
Chemilil	200
Muhoroni	250
mumias	400

a) By choosing a suitable scale represents the above information using a divided rectangle 6mks
b) State **two** advantages of using divided rectangles in data presentation. 2mks
c) State **three** physical conditions that favour sugar cane farming in western Kenya 3mks
d) Describe the cultivation of sugar from land preparation stage to harvesting. 6mks

e) Explain **four** problems facing sugar cane farming in kenya. 8mks

7. a i) In which county is perkerra scheme . 1mk
   ii) Explain **four** factors that favored the establishment of perkerra irrigation scheme. 8mks
   b i) Give **three** main crops grown in the scheme. 3mks
   ii) State **four** importance of the scheme. 4mks
   c) You intend to carry a study in perkerra irrigation scheme.
   i) Prepare a working scheme for such study. 3mks
   ii) Give **three** follow up activities you are likely to engage in. 3mks
   iii) Identify **three** problems faced by the farmers in pekerra irrigation scheme. 3mks

8 a) . What are marine fisheries. 2mks
   b) Explain **three** problems facing marine fishing in Kenya. 6 mks
   c i) List **three** types of fishing. 3mks
   ii) Describe the trawling method of fishing. 5mks
   d) Mention **three** fishing grounds found in the Atlantic ocean. 3mks
   e) Explain **three** physical factors that favour fishing in japan 6mks

9. a) Name the main types of natural forests in the world. 3mks
   b) Explain the significance of the forests and forest products in Kenya. 10mks
   c) What has Kenya government done to conserve and manage forest. 5mks
   d. i) State **five** factors influencing the distribution of natural forests. 5mks
   ii) Define forest management . 2mks

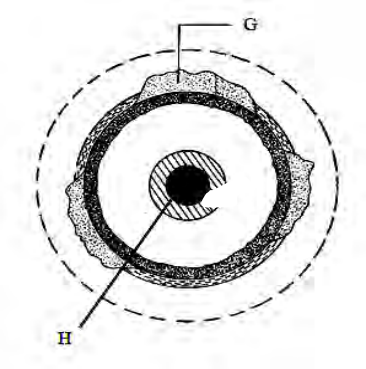
10 a. i) Identify **two** types of open cast mining. 2mks
   ii) Describe the stages involved in deep-shaft mining. 6mks
   b) State **three** negative effects of mining on the environment. 3mks
   c) Give **two** reasons why Kenya imports her oil in crude form. 2mks
   d) Explain **four** ways in which mining contribute to the economy of Kenya. 8mks
   e) Explain how the following factors influence exploitation of minerals
   i) Technology. 2mks
   ii) Quality of the ore. 2mks

GATUNDU SOUTH SUB - COUNTY FORM FOUR JOINT EVALUATION TEST 2021
312/1
GEOGRAPHY PAPER 1
MARKING SCHEME

SECTION A
Answer all the questions in this section.

1. (a) What is physical Environment? (2 marks)
These are natural features which were not created by human beings e.g. vegetation and landforms but influences his activities

(b) The diagram below shows the internal structure of the earth.



(i) Name the parts marked: (2 marks)
G…… Continental crust/sial and **H**…… Inner core

(ii) Name the dominant mineral in the mantle… Olivine/ ferromagnesian silicate .(1 mark)

2. (a) Define the term Aridity. (2marks)
Refers to the state of land being deficient in moisture leading to scanty vegetation or lack of vegetation.

(b) State **three** reasons why wind is the most effective agent of erosion in arid areas. (3 marks)

- Absence of moisture makes the soil particles loose and easily carried by the wind.
- The absence of barrier / vegetation encourage wind to carry a lot of soil.
- Winds in the deserts are very strong.

3. (a) How does topography influence weathering? (2 marks)

- In steep slopes weathering process is faster because weathered material are washed away quickly exposing rock surface to more agents of weathering, on gentle slopes and flat areas weathering process is slow because weathered material remain in the same area covering the rock beneath

(b) Give **three** effects of weathering. (3 marks)

- Weathering leads to the formation of soil important to man for agriculture.
- Weathered rocks offer beautiful sceneries for tourist attractions.
- Weathering breaks rocks making mining easier.
- Weathering also produces minerals such as bauxite.
- Weathering reduces sizes of rocks providing suitable materials for construction e.g. rock blocks and sand.
- Weathered crust of the earth is important to engineering, for it is necessary to establish how deep it is and remove so as to construct buildings on firm foundation.

4. (a) Define the term hydrological cycle. (2 marks)
Hydrological cycle is the endless exchange of water between the sea/ocean, the atmosphere and the land.

(b) Name **three** importance of water vapour in the atmosphere. (3marks)

- It determines the amount of precipitation that a given area is likely to receive.

- Water vapour is important in absorbing radiation hence regulates the heat loss from the earth.
- The amount of water vapour determines the amount of energy stored in the atmosphere for the development of storms.
- Resonsible for formation of clouds.
- The amount of water vapour in a given volume of air indicates the atmospheres potential capacity to hold moisture:

5. (a) Name **two** types of faults associated with formation of the rift valley. (2 marks)
Normal fault, reverse fault and anticlinal fault

(b) State **three** effects of faulting on drainage of an area. (3 marks)

- Down warping due to faulting may lead to formation of depressions which may be filled by water to form lakes.
- Fault lines due to fracturing of crustal rocks may change the course of river making the river to start flowing a long the fault line forming faulting guided drainage pattern.
- Fault scarps forming across rivers course may lead to formation of waterfalls.
- Faulting may lead to formation of lines of weakness in earth's crust which becomes passages for hot water from the underground to the earth's surface to form hot springs and geysers.

SECTION B

Answer question 6 and any other two questions in this section.

6. Study the map of Kijabe 1:50,000[sheet 134/3] provided to answer the following questions.

a) (i) Identify the map series number. (2 marks)
Y731 (DOS 423)

(ii) Name **two** types of scales used in the map. (2 marks)
Ratio scale
Linear scale

(iii) Give the vertical interval used in the map. (2 marks)
20 meters

(iv) Give one natural and one manmade feature at grid square 2398. (2 marks)

Natural - River
Manmade - railway, Main track (motorable)

b) Calculate the area of the forest crossed by matathia river to the south of the area shown by the map .Give your answer in square kilometers. (3marks)
full squares=3, half squares=14
14/2 + 3= 10
10 km^2

c) (i) Citing evidence from the map state **three** economic activities carried out in the area covered by the map (6 marks)

Economic activity	**evidence**
mining	Murram pit at 3190
Dairy farming/milk processing/livestock	Dairy at 3092,cattle dip
Transportation	Road, railwayline
Lumbering	sawmill
trade	Market,shops
Manufacturing	Carbacid plant

Any 3 activities supported by appropriate evidence *2

(ii) Measure the length of Nairobi- Naivasha railway line from the landhis (grid reference 257987) to the level crossing near Kijabe station at grid reference 308984.Give your answer in kilometers. (2 marks)
5.6 km (5.5km-5.7km)

d) Describe the drainage of the area covered by the map. (6 marks)

- the main drainage feature in the map is rivers
- There are many permanent rivers e.g. Bathi and moedi
- Main rivers are R.Bath,Moedi and Mununga.
- Most rivers generally flow from north to south.
- There is a disappearing river at grid square 2494.
- Rivers flowing from kiljabe hill have radial and parallel drainage patterns

7. a) What is meant by the following terms

i) Glacier (2 marks)

A mass of ice of limited width moving outward from an area of accumulation

ii) Avalanche (2 marks)

A mass of ice that falls heavily and rapidly through gravity

iii) Ice bergs (2 marks)

Permanent floating ice in large water bodies

b) (i) Mention **three** ways in which ice moves. (3 marks)

-Freeze –thaw action, -Basal slip -Extrusion flow

(ii) The diagram below shows types of moraines in a valley glacier. Name the types of moraines marked a, b and c . (3 marks)

a-Lateral moraines b- Medial moraines c-terminal moraine

c) Fxplain how the following features are formed:

(i) corrie lakes (4 marks)

- Snow accumulates in a shallow pre existing depression on the mountain side to form a gracier
- Ice exerts pressure on the cracks and hollow beneath and the hollow is depend by plucking.
- Sides and back wall are steepened by plucking
- Plucked debris erode and deepen the floor through abrassion.
- The glacier in the cirque may melt forming a lake which is called a tarn/cirque

(ii) Ice eroded plains. (4 marks)

- As Ice moves across the land, ground moraines erode the rocks of the existing landforms by abrasion and plucking.
- Hills are reduced to low smoothed hillocks
- Where rocks are softer they are eroded more to form depressions or basins.
- Relatively resistant rocks formed bare rocks surfaces which display scratches called striations.
- The extensive and almost level lowland which was previously under an ice sheet is referred to as an ice eroded plain

d) Students from Eyasi high school near mt Kenya conducted a field work on glaciated parts of mt Kenya.

(i) Mention **two** methods they used to collect data. (2 marks)

Observing, Administering Questionnaire, interviewing, sampling, content analysis,

(ii) Mention **three** problems they were likely to encounter in the field. (3 marks)

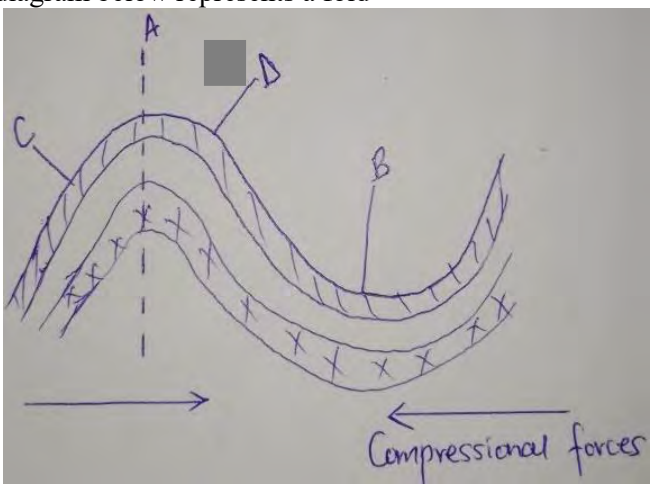
- Inaccessibility due to ruggedness of the landscape
- Cold to high altitude
- Accidents due to falling on the steep slopes
- Attack by wild animals in the mountain

8.

a) (i) what is folding . (2 marks)

- Bending of the rocks of the earth's crust due to earth movements
- Crustal distortion that causes rocks to bend upwards and downwards

(ii) The diagram below represents a fold



Name the parts marked A, B and C (3 marks)
A- Axis B-Down fold/syncline/trough C-Limb

(iii) Identify the type of fold shown in (ii) above. Simple symmetrical fold (1 mark)

b) (i) Briefly explain formation of Fold Mountains by contraction theory. (4 marks)

- During the formation of the earth the surface rocks cooled and contracted faster than those of the interior.
- The interior cooled at a slower rate and surface rocks started wrinkling to fit on the cooling and contracting rocks of the interior.
- The differences in the rate of cooling and contraction made the earth's surface to develop big wrinkles.
- The wrinkles became the Fold Mountains.

(ii) Mention **two** fold mountain building periods or orogenies (2 marks)

Charnian, Caledonian, Hercynian, Alpine

c) (i) Apart from the fold shown in a (ii) above, Name **three** other types of folds. (3 marks

-Assymmetric fold -Overfold -Nappe/overcrust folds
-Isoclinal fold -Anticlinorium and synclinorium complex

(ii) Explain how an anticlinorium synclinorium complex is formed. (4 marks)

- Weak compression force causes minor folds to form on the surface.
- This landscape is later subjected to much greater compression forces which cause the already folded land to fold into bigger folds.
- The new upfolds are called anticlinorium
- The new down folds are called synclinorium.

d) Explain any **three** significance of folding. (6 marks)

- Fold Mountain ranges are associated with heavy rainfall hence form catchment area for rivers which also provide water for H.E.P
- Fold Mountain regions associated with growth of forest which provide timber for building
- In fold mountains Anabatic and katabatic winds are associated with temperature inversion which causes destruction of vineyards and grapes.
- Crustal weakness created by folding trigger volcanic activity.
- Leads to ease in exploitation of minerals by exposing them to the surface.
- Folding forms scenes that attract tourists hence foreign exchange.
- Fold mountain causes barriers to transport and communication making construction difficult and reduces visibility to aircrafts.
- Fold mountains acted as protective barriers during wars in the olden days.
- Topography of some mountainous areas discourages settlements due to ruggedness.

9. The table below represents rainfall and temperature of station Y. Use it to answer the questions (a) and (b)

Station Y

Months	J	F	M	A	M	J	J	A	S	O	N	D
Temperature °C	30	31	31	31	30	29	28	29	29	29	29	30
Rainfall (mm)	250	250	325	300	213	25	25	25	100	275	380	200

(a) (i) Calculate the mean annual range of temperature of the station. (1 mark)

$31^0 - 28^0 = 3^0C$

(ii) Calculate the annual rainfall total for station **Y**. (2 marks)

Sum total = 250 + 250 + 325 + 300 + 213 + 25 + 25 + 100 + 275 + 380 + 200

= 2368mm.

(iii) Calculate the average rainfall for station **Y**. (2 marks)

2368/12 = 197.33mm

(b) Describe the climatic characteristics of station **Y**. (5 marks)

- Experiences high temperatures throughout the year.
- Highest temperatures are experienced in the months of February, March and April.
- Lowest temperatures in the months of July.
- The station receives high rainfall in the month of November.
- The station has two rainy seasons between the month of January and May and September to December.
- Low rainfall is received in the months of June, July and August.

(c) i) Define the term weather forecasting. (2 marks)

This is prediction of the future atmospheric conditions over a short period for a specific place

ii) Explain any **four** challenges facing weather forecasting in Kenya. (8 marks)

- Inadequate skilled personnel in the meteorological field
- Defective and obsolete equipment which may give inaccurate data
- Inadequate meteorological stations making it difficult to collect data from different parts of the country.
- Insufficient funds to purchase weather forecasting equipment and pay the weather forecasting personnel
- Uncertainty in the global weather patterns which leads to flooding, prolonged drought and changes in wind patterns which makes it difficult to obtain accurate data on the weather.

(d) Explain how humidity is measured using a hygrometer(wet bulb and dry bulb thermometer) (5 marks)

- Set up the wet bulb and dry bulb thermometers (hygrometer).✓
- After 24 hrs read the temperature of the dry and wet bulb thermometers✓
- Record the temperature of the dry and wet bulb thermometers. ✓
- Get the difference in temperature readings of the wet and dry bulb thermometers✓
- Then; use the conversion scale to determine the humidity and interpretation of the temperature difference.✓

(Sequence in measurement is important for award of points)

10. (a)

i) What is an artesian well? (2 marks)

Artesian well is a type of a well which is sunk into the aquifer and water is forced upward by hydrostatic pressure and the mouth of the well is sunk below the water table.

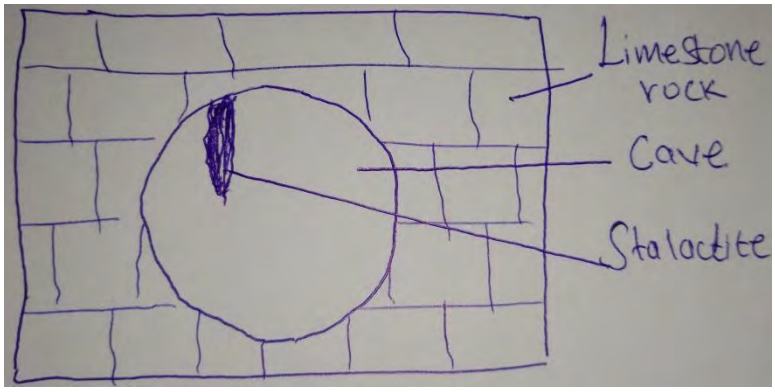
ii) Explain **three** conditions which are ideal for the formation of an artesian well. (6 marks)

- The aquifer must be sandwiched between impermeable rocks so that it can retain water.
- Aquifer must outcrop in a region with a rich source of water e.g. rainy area or beneath a lake.
- The aquifer must dip from a region of water intake and the rock layers must form abroad syncline or basin.
- The mouth of the well must be lower than the intake area this allows the water to be forced to the surface by pressure with no need of pumping it.

(b) Using a suitable diagram, describe how a stalactite is formed. (5 marks)

- Carbon dioxide in the atmosphere combines with rain water to form weak carbonic acid. The acidic rain falls on the surface of the land and reacts with limestone (calcium carbonate) turning it into calcium hydrogen carbonate solution.

- The solution of calcium hydrogen carbonate seeps through the joints into the roof of the cave.
- Due to high temperatures in the cave, water evaporates from calcium hydrogen carbonate leading to formation of a precipitate of calcium carbonate deposit from the roof of the cave
- Accumulation of the calcium carbonate precipitate forms a projection from the roof hanging downwards. This is called a stalactite



Text 4mks, diagram 1mk

(c) Explain **three** ways in which limestone landscapes influence human activities. (6 marks)

- Surface and underground features in karst scenery can attract tourists thereby earning foreign exchange.
- Limestone Landscapes are usually rugged with rocky surfaces, thin soils poor vegetation and inadequate surface water, all of which discourage settlement.
- Limestone is also a raw material for cement manufacturing; therefore it supports the construction and manufacturing industries.
- Limestone rocks are used in building and construction.
- Limestone is used as a flux in the iron and steel industry during smelting of iron ore limestone combines with the impurities allowing separation iron content.

(d) Form four students of your school undertook field study on a karst landscape.

i) State **two** reasons why they need a route map. (2 marks)

- To help in identifying the direction to follow.
- To help to prepare a work schedule.
- To identify the location of features for study.
- To estimate the distance to be covered.
- To estimate the time the field work is supposed to take.

ii) Give **two** reasons why they need to pre-visit the area. (2 marks)

- To estimate the time needed to do the study.
- To estimate the cost of the study.
- To enable them foresee the possible problems to be encountered while in the field.
- To decide on the tools and materials to carry
- To obtain permission from relevant authorities.

iii) Give **two** follow – up activities you may have engaged in. (2 marks)

- Writing a report on karst scenery
- Draw and display charts and sketch maps
- Analyzing and displaying photographs on karst scenery
- Having class discussion on karst scenery

GATUNDU SOUTH SUB - COUNTY FORM FOUR JOINT EVALUATION TEST 2021
GEOGRAPHY P2

MARKING SCHEME

1. a) Define a photograph.2mks
– Its an image or a picture of an object recorded by a camera on a light sensitive film or paper

b) Name three classification of ground photograph. 3mks
– Ground general view
– Ground close up (particular view)
– Ground obliques

2. a) What is land reclamation 2mks
It is the practice by which less useful land is converted into more useful land.

b) Name three methods of land reclamation in Kenya. 3mks
– Drainage of swamps
– Irrigation of dry lands
– Planting of drought resistant crops
– Afforestation
– Control of tse tse flies.
– Filling of quarries

3. a) What is renewable source of energy. 2mks
A renewable energy source is that source that can be regenerated /replenished.

b) Name three main hydroelectric power stations along river Tana. 3mks
– Masinga Kiandarua
– Kamburu Kiambere
– Gitaru Tana

4 a) What is wildlife 2mks
Refers to undomesticated animals and plants in their natural habitat.

b) Name the three types of game parks in Kenya.
National parks
National reserves.
Wildlife sanctuaries.

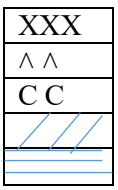
5 a) Name two exotic breeds of commercial beef cattle reared in kenya 2mks
Aberdeen angus
Hereford
Shorthorn
Sahiwal

b) Outline three similarities of commercial beef cattle farming in Kenya and Argentina
– In both countries cattle are reared in areas of natural grazing pasture.
– Cross breeding of beef cattle is common in both.
– In both beef cattle products are meant for local and foreign market.
– Cattle breeds are similar in both countries.

6 a)The table below shows sugar production in five major zone in Kenya

XXXX	^ ^	CC	
XXXX	^ ^	CC	
XXXX	^ ^	CC	
XXXX	^ ^	CC	

Each bar correctly drawn 1 mk x5
Key 1mk
MUMIAS
MUHORONI
CHEMELIL
NZOIA
SONY



a) By choosing a suitable scale represent the above information on a divided rectangle. 6mks

b) State two advantages of using divided rectangles in data presentation. 2mks
– Represented quantities can easily be compared

- Highest and lowest production can easily be seen

c) State three physical conditions that favour sugar cane farming in western Kenya. 3mks

- Rainfall of sugar cane requires rainfall of which is distributed throughout the year
- The region experiences hot climate of temperatures ranging between 21^0c and 27^0c
- The region has dry and sunny weather ideal for sugar accumulation
- There is the presence well drained souls ideal for sugar growth
- The land is gently sloping it being a lower area suitable for mechanization

d) Describe the cultivation of sugar from land preparation stage to harvesting.6mks

- Land is ploughed using machines
- Furrows are made in the field
- Sugar cane cuttings are dripped in insectcides before planting
- Nitrogenous fertilizers is applied in the field severally
- The sugar cane cuttings (setts) are buried /planted in furrows
- Weeding is done severally/spraying of herbicides
- Crop matures at about 18-24 months and cane is manually harvested using machetes and pangas
- Sugar cane is piled in heaps and loaded into tractors to factories

e) Explain four problems facing sugar cane farming in Kenya. 8mks

- Fire outbreaks in sugar cane areas destroys the cane
- Pests like termites attack the setts and diseases like smut stagnate growth of cane
- Delay in harvesting the cane lowers quality and tonnage of harvest farmers earning less
- Delayed payment lowers the morale of farmers lowering production
- High cost of farm inputs leads to low income for farmers discouraging them
- Stiff competition from imported sugar leads to factories not paying on time

7. a

i) In which county is perkerra scheme .1mk

Baringo

ii) Explain four factors that favoured the establishment of perkerra irrigation scheme. 8mks

- Presence of river perkerra to supply abundant water throughout the year
- Gently sloping land allows water to flow by gravity /easy mechanization
- Availability of of fertile loamy soils ideal for growing onions
- Availability of extensive land suitable for setting irrigation scheme
- Semi-arid conditions of the area that necessitated irrigation
- Sparse population reducing the cost of resettling the people
- Availability of labour from the large population of the deferiness that needed to be engaged.

B i) Give three main crops grown in the scheme.3mks

- Onions
- Watermelons
- Chilies
- Pawpaw
- Cotton

ii) State four importance of the scheme. 4mks

- Creation of employment/job opportunities
- Provided land for landless
- Has led to development of good road network
- Development of social amenities
- Earn the country foreign exchange
- Improved food security in the country
- Makes use of any arrears
- Has led to industrialization
- Source of income to the farmer

c) You intend to carry a study in perkerra irrigation scheme.

i) Prepare a working scheme for such study.3mks

Time	**Activity**
8.00a.m -8.30 a.m	Departure
10.30 a.m	Arrival and reporting to the authorities
10.30am -12.30 p.m	Data collection
12.30 p.m -1.30 p.m	Lunch break
1.30 p.m -3.pm	Data collection
3.00 p.m	Departure to school
5.00p.m Arrival in school	

ii) Give three follow up activities you are likely to engage in. 3mks

- writing reports
- holding discussions
- data analysis
- displaying photographs taken
- reading more on the topic
- assessing the information collected against the hypothesis
- consulting geography teachers
- sketching the features
- drawing the conclusions

iii) Identify three problems faced by the farmers in pekerra irrigation scheme.3mks

- land tenure issue since farmers are yet to be issued title deeds
- livestock human conflicts between tugen and jemps
- obstruction upstream and drought leads to fluctuating water supply or frequent draughts .ially growing of maize has led to abandonment of other crops such as onions ,pawpaw etc
- crops attacked by pests and diseases lowers yield
- delayed payment discouraged farmers

- stiff competition from crops grown in the countries
- inadequate caplital
- impassible roads during rainy /wet season
- diversification espe

8 **a) . What are marine fisheries. 2mks**

Marine fisheries are fishing grounds found in oceans and seas

b) Explain three problems facing marine in Kenya. 6 mks

- Inadequate market due tolower purchasing power of the surrounding community
- Poor transport network to the interior of the country and inavailibility of agricultural products in some coastal areas which reduces the rate of fish consumption.
- Inadequate capital which causes fishermen unable to afford expensive equipment used in deep sea fishing which restrict them to fish near the shore hence the low catch
- Stiff competition from industrialized countries ainly japan and korea which have modern fishing equipment and be able to tap fish in the deep sea
- Lack of refrigeration facilities to enable them transport fish to distant markets.
- Unpopularity of fishing as an economic activity due to fish prices being high which discourages people from eating it regularly.
- Strong sea tides that are a great menace to localfishermen who use small boats which are motorized which forces them to go fishing when the sea is calm making them to catch only a limited stock .

c i) List three types of fishing. 3mks

- Pelagic fishing
- Demersal fishing
- Inshore fishing
- fresh water fishing

ii) Describe the trawling method of fishing. 5mks

- Bag shaped net is attached to a trwler/ship and cast into deep waters
- The upper part is kept open by floats amd lower part kept down by weights

- The net is dragged by the trawler along the sea bed
- The net is hauled in the trawler and the fish is emptied on board

d) Mention three fishing grounds found in the Atlantic ocean. 3mks

- N.W A tlantic fishing grounds
- N.E Atlantic fishing ground
- S.Atlantic fishing grounds

e) Explain three physical factors that favour fishing in japan)what are the problems facing fishing in marine fishing in Kenya . 5mks

- Rugged mountains landscape which is favourable for agriculture makes fishing an alternative economic activity.
- Extensive shallow continental shelf that hosts a lot of fish
- Convergence off warm kuroshiwo and cold Oyashiwo currents provide suitable habitat for plankton that fish feed on.
- Natural intended coasts provide good breeding ground for fish.

9.

a) Name the main types of natural forests in the world. 3mks

- Tropical hardwood forests
- Temperate hardwood forests
- Coniferous forests

b) Explain the significance of the forests and forest products in Kenya. 10mks

- Preservation and conservation of environment
- Act ass water catchment areas
- Regulation of climate /create a micro climate
- Provide habitat for wildlife
- It's a source of income
- Act as a raw material for industriese.g paper industry
- Ist a source of employment e.gforest guards,officers

- It promotes tourism
- It provides charcoal
- Provides fodder for animals
- Forest provides nuts ,fruits and dyes,ropes nets,honey
- It's a hiding ground for military
- It's an educational and research centre.
- Provides wood and poles for building and construction
- It's a source of tree leaves which are fed to silkworm

c) What has Kenya government done to conserve and manage forest. 5mks

- Carrying out public campaigns on the value of forests through the mass media
- Carrying out research on suitability of soils and effects of pests and diseases
- It has established traing institutions dealing with forestry e.g KEFRI ,londiani -forest training college
- It has encouraged rotational felling of trees
- Infrastructural facilities like road and mills have been provided by the government
- The government has introduced alternative sources of energy (fuel e.g solar energy,biogas to reduce overdependence on wood fuel
- It has enacted laws to govern the management of forests
- It has employed forests guards and officials to curb destruction of forests
- N.G.G s like Green Belt Movement and UNEP provide seedlings for forests
- It has created forests reserves
- It has encouraged agro-forestry
- Extensive afforestation programme is underway (any point 5x1 -5mks

d. i) State five factors influencing the distribution of natural forests.5mks

- Climate
- Stltitude

- Soils
- Human activities
- aspect and slope (5x1 -5mks

ii) Define forest management . 2mks
- Refers to the effective planning and control of forests and forests resources

10 a. i) Identify two types of open cast mining. 2mks
- Stripping
- Hill slope mining

ii) Describe the stages involved in deep-shaft mining. 6mks
- vertical shaft is sunk to reach the minerals,seas or beds
- horizontal tunnels are dug fro the shaft to reach the mineral bearing rock.
- Ropes are erected to support the the roof of the tunnels
- The blasted with explosive or dug using mechanical shovels and big axes
- Ore is transported on light rail tracks or conveyor belts to the bases of the shaft
- The ore is then loaded onto alift or cage for onto the surface

b) State three negative effects of mining on the environment. 3mks
- Pits left on the land are ugly/land /land dereliction/landslide scars
- Dust produced during mining pollute the atmosphere/water
- Blasting leads to instability of the basement rocks
- Ponds created collect water which is habitat for disease causing vectors and pests
- Loss of biodiversity
- Leads to soil ersion
- Disruption/lowering of water table

c) Give two reasons why Kenya imports her oil in crude form. 2mks
- It is cheaper than when is refined
- Kenya exports her refined petroleum products
- After crude oil is refined there are many by-products
- Waste from refineries is used for roads tarmacking

d) Explain four ways in which mining contribute to the economy of Kenya. 8mks
- **i**t provides raw materials for manufacturing /industry
- Iining stimulates development of transport opening up remote mineral rich areas
- The mining industry generates employment opportunities which raises the standards of living for the employees
- Mining promotes agriculture by providing markets
- Mining facilities provision of social amenities e.g school,hospitals
- Mining encoursged development of skills /technology which can be applied in other sectors of the economy
- It leads to setting up of other related industries
- Source of income selling the mineral which raises the standards of living (4x2-8mks

e) Explain how the following factors influence exploitation of minerals

i) Technology. 2mks
- Availability of technical skills and relevant modern machines are important for specialized mining operations (1x2 mks

ii) **Quality of the ore.** 2mks
High quality ores are economical to extract as they yield a large amount of metal
lower quality ores are rarely extracted for their metal content is very low (.1x2 mks

ACK DIOCECE OF NAMBALE
312/1
GEOGRAPHY
PAPER 1

SECTION A:

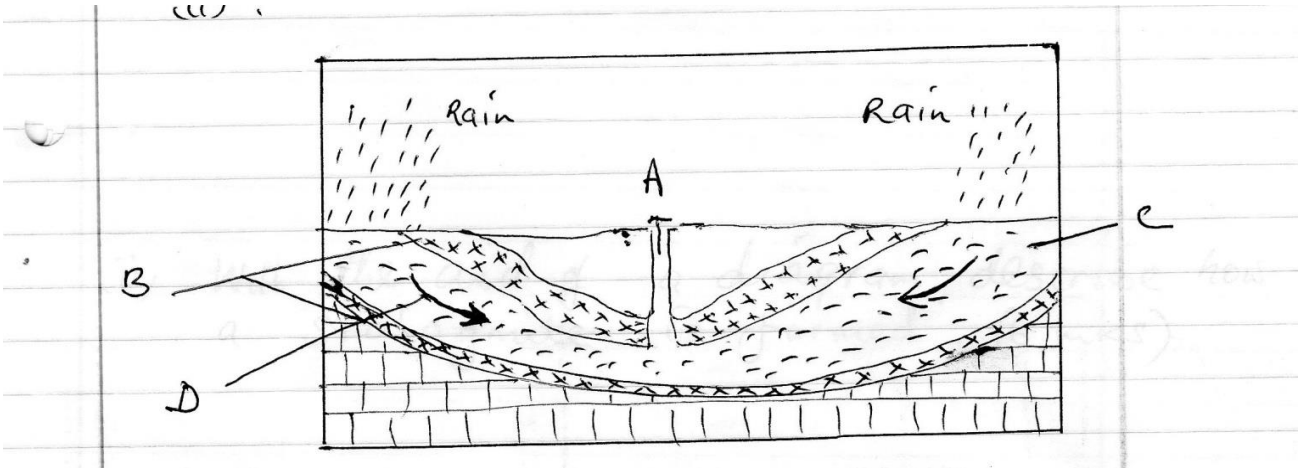
1. a) Name two branches of geography. (2mks)
   b) Give three reasons why it is important to study geography. (3mks)
2. a) What is solar insolation? (2mks)
   b) Outline three importance of moisture in the atmosphere. (3mks)
3. a) State two effects of the rotation of the earth on its axis. (2mks)
   b) The local time at manual 60^0W is 11.30 am. What is the time in Nairobi 37^0E? (3mks)
4. a) What is an ice sheet? (2mks)
   b) State three ways in which ice moves (3mks)
5. a) Name the two types of waves experienced in the coastal area. (2mks)
   b) List three coastal features which result from wave deposition. (3mks)

SECTION B:

Answer question 6 and any other two questions.

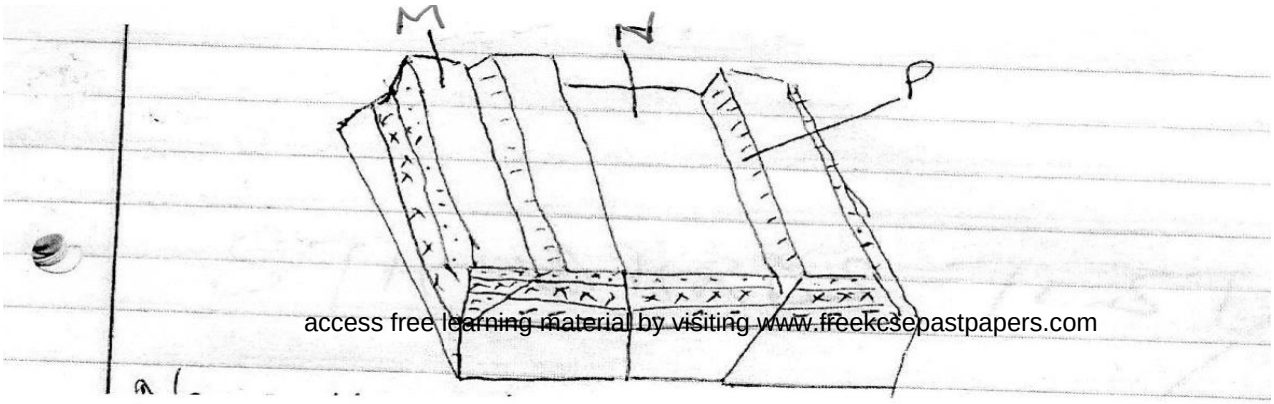
6. Study the map of Kijabe 1 : 50,000 (sheet 134/3) provided and answer the following questions.
   a) i) Give the longitudinal extent of the area covered by the map. (2mks)
      ii) Identify the two human made features found at grid square 3301 (2mks)
      iii) what is the bearing of the cattle dip at Ewaso kedong valley from grid reference 3195 (2mrks
   b) i) calculate the area covered by thicket vegetation in the area covered by the map (3mks)
      ii) measure the length of all weather road bound surface C68 and give your answer in km. (2 maks)
   c) i) Give three evidences showing that the area receives high rainfall (3marks)
      ii) Citing evidence from the map, identify three economic activities practiced in the area covered by the map (6maks)

   d) Describe the drainage of the area covered by the map. (5mks)
7. a) State two factors which influence the occurrence of underground water (2mks)
   b) Differentiate between a well and spring. (2mks)
   c) The diagram below represent an artesian basin. Use it to answer question C (i) and (ii) .



   i) Name the parts marked A, B, C (3mks)
   ii) Identify the process marked D. (1mk)
   iii) State three factors which favour the location of an artesian well (3mks)
   d) i) Apart from stalagmites name three other underground features formed in limestone areas. (3mks)
      ii) With the aid of a diagram describe how a stalagmite is formed (6mks)
   e) i) State three reasons why there are few settlements in Karst Landscapes. (3mks)
      ii) Name two surface features found in limestone areas. (2mks)

8. (a) With the aid of well labelled diagrams describe the processes involved in the formation of a corrie lake. (8mks
   (b) Explain four ways in which a glaciated landscape is of significance to human activities. (8mks
   (c) Explain three conditions that may lead to glacial deposition in lowlands. (3mks)
   (d) Suppose students were to carry out a field study on glaciation on Mt.Kenya
      (i) Name two types of morains they are likely to study. (2mks)
      (ii) State two problems they are likely to experience during the field study. (2mks)
      (iii) Why was it important for the learners to conduct a pre-visit (2mks)
9. a) Describe podzolization as a process of leaching. (4mks)
   b) State three ways in which mulching helps in soil conservation. (3mks)
   c) Explain how the following factors influences the formation of soils.
      i) Climate (4mks)
      ii) Topography (4mks)
   d) i) What is soil catena? (2mks)
      ii) Draw a well labelled diagram to show a well – developed soil profile. (3mks)
   e) Explain five causes of soil degeneration. (5mks)
10. i) Define the term faulting. (2mks)
   ii) Name 2 types of faults. (2mks)
   iv) Use the diagram below to answer the question that follows:-



   a) Name the features marked M, N and P (3mks)
   b) With well labelled diagrams explain the formation of the Rift valley through tensional forces. (8mks)
   c) Explain five positive effects of faulting. (10mks)

NAMBALE ANGLICAN JOINT EXAMINATION-2021
312/2
GEOGRAPHY PAPER 2
SECTION A

1. a) What is human geography? (2mks)
   b) State three ways in which the study of geography contributes to the economic development of Kenya (3mks)
2. a) Name the minerals mined in the following regions:
   - Kerio Valley (1mk)
   - Kariandusi (1mk)
   - Lake Magadi (1mk)

   b) Give two ways in which minerals occur (2mks)
3. a) List two physical factors that influence agriculture (2mks)
   b) State three benefits of plantation farming (3mks)
4. a) Define settlement pattern (2mks)
   b) State three characteristics of Central Business District (3mks)
5. State five factors which favour development of car and electronics industry in Japan (5mks)

SECTION B: Answer Q6 and any other two questions from this section.

6. The table below shows the value of some of Kenya's mineral exports from 215 to 2018. Use it to answer questions (a) and (b).

Year / Mineral	2015	2016	2017	2018
Soda ash	13200	8300	7300	12400
Petroleum products	4200	4500	4700	6100
Cement	7300	7800	7400	8900

   a) i) Using a scale of l cm to represent l000 million Kenya Shillings, draw a comparative bar graph to represent the data shown. (8mks)
      ii) State three advantages of using comparative bar graphs to represent statistical data. (3mks)
   b) Calculate the percentage increase in value of exports between the years 2017 and 2018. (6mks)
   c) Explain the significance of trade to the economy of Kenya. (8mks)
7. a) i) Name three beef farming areas in Argentina (3mks)
      ii) List three beef cattle breeds reared in Argentina (3mks)
   b) State five factors which favour beef farming in Argentina (5mks)
   c) Explain four benefits of beef farming to the economy of Argentina (8mks)
   d) Outline three differences between beef farming in Kenya and Argentina (6mks)
8. a) Differentiate between a national park and a game reserve (2mks)
   b) i) State four reasons for establishing national parks in Kenya (4mks)
      ii) Identify five examples of game sanctuaries in Kenya (5mks)
   c) i) Define domestic tourism (2mks)
      ii) State four factors that hinder domestic tourism in Kenya (4mks)
   d) Explain four factors that make Switzerland receive more tourists than Kenya (8mks)
9. a) Differentiate between forests and forestry (2mks)
   b) Explain four factors influencing distribution of natural forests in Kenya (8mks)
   c) i) Identify three uses of forest product (3mks)
      ii) Give four characteristics of coniferous forests (4mks)
   d) Explain factors that have led to the decline of the area under forest cover in Kenya (8mks)

10. a) i) List three traditional methods in Kenya (3mks)
    ii) Give three benefits of fish farming in Kenya (3mks)
    b) Describe drifting as a method of fishing (5mks)
    c) Explain four reasons why marine fishing in Kenya is less developed (8mks)
    d) You intend to carry out field study on fishing a long Usenge beach on L.Victoria .
    i) State three preparations you would make for the study (3mks)
    ii) List three activities you are likely to carry out during the study (3mks)

ACK DIOCIES OF NAMBALE
GEOGRAPHY 312/1

MARKING SCHEME

1. a) Name two branches of geography (2mks)
   Physical geography
   Human geography
   Practical geography
   b) Give three reasons why it is important to study geography. (3mks)

- Geography is a career subject it provides a firm foundation for advanced studies in specialized fields like engineering, remote sensing, urban planning etc.
- Study of geography enables one to acquire basic skills and knowledge which contribute to local, regional and national development.
- Through the study of fieldwork, geography teaches one on how to manage time properly by drawing a time schedule and adhering to it.
- Geography focuses on physical study of the earth. We are therefore able to learn and explain the origin of the earth and the solar system.
- Geography enables the learners to understand and appreciate different environmental influences at work on different societies.
- Geography creates awareness in the people on the significance of management and conservation of the environment.

2. a) What is solar insolation? (2mks)
   Solar insolation is the amount of sunshine reaching the surface of the earth.
   b) Outline three importance of moisture in the atmosphere (3mks)

- Source of precipitation, especially rain.
- Regulating temperature on the earths surface.
- Influencing weather conditions.

3. a) State two effects of the rotation of the earth on its axis. (2mks)

- Causes day and night
- It causes deflection of ocean currents/winds.
- It causes falling and rising of the ocean tides.
- It causes different of 1 hour between 15^0 meridian.

   b) The local time at manual 60^0W is 11.30 what is the time in Nairobi 37^0E? (3mks)
   Difference in degrees $60^0 + 37^0 = 97^0$
   97^0 x 4 = 388 minutes
   1 hour = 60 minutes
   Thus 388 ÷ 60 = 6 hours 28 minutes
   Nairobi is 6 hours 28 minutes East of manual
   the time is 11.30 am + 6 hours 28 minutes.
   = 17.58 hours or 5: 58 pm

4. a) What is an ice sheet ? (2mks)
   An ice sheet is a continuous mass of ice covering a large area /surface.

   b) State three ways in which ice moves (3mks)
   plastic flowage
   basal slip
   extrusion flow

5. a) Name the two types of waves experienced in the coastal areas. (2mks)
   Constructive waves
   Destructive waves
   b) Name three coastal features which result from wave deposition. (3mks)
   - Beaches
   - Spits
   - Mudflats
   - Tombolo
   - Cuspate forelands
   - Dune – belts
   - Bars
   - Salt marshes

SECTION B:

6. Study the map of Kijabe 1 : 50,000 (sheet 134/3) provided and answer the following questions.

   a) i) Give the longitudinal extent of the area covered by the map. (2mks)
   36^0 30' to 36^0 45' E
   ii) Identify the two human made features found at grid square 3301 (2mks)
   plantation
   main track (motorable)
   iii) what is the bearing of the cattle dip at Ewaso kedong valley from grid reference 3195 (2mrks
   247^0 +1 or -1
   b) i) calculate the area covered by thicket vegetation in the area covered by the map (3mks)
   full sq = 3
   half sq = 15/ 2 = 7.5
   3+ 7.5 = 10.5

   10.5 km sq.
   ii) measure the length of all weather road bound surface C68 and give your answer in km. (2 maks)
   14.7 + 1 or – 1
   c) i) Give three evidences showing that the area receives high rainfall (3marks)
   - presence of forest at wakagwe
   - presence of permanent rivers eg R. kiruiru
   - High settlement at the central area

   ii) Citing evidence from the map, identify three economic activities practiced in the area covered by the map (6maks)
   - transport – roads
   - lumbering- saw mill gs 3497
   - trade – shops gs 3496
   - dairy farming – dairy gs 3092
   - Quarrying – gs 3493

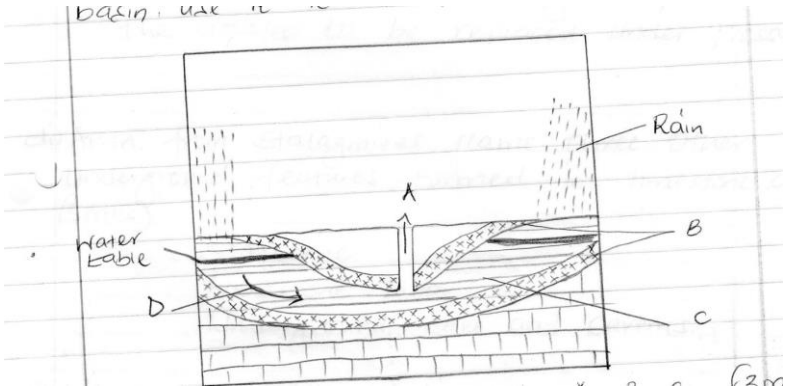
   d Describe the drainage of the area covered by the map. (5mks)
   - The area has rivers such as Ewaso kedong
   - R Ewaso kedong has tributaries
   - R Ewaso kedong has meanders
   - R Ewaso kedong flows southwards

   There are disappearing rivers in the western side of the area covered by the map.

7. a) State two factors which influence the occurrence of underground water. (2mks)
   - Precipitation and evaporation in the area.
   - Porosity of rocks
   - Permeability of the rocks
   - Slope
   - Vegetation cover

b) Differentiate between a well and spring. (2mks)
A well is a hole sunk into a permeable rock to reach the water table while a spring is a natural outflow of water from the rocks.

c) The diagram below represent an artesian basin. Use it to answer question C (i) (ii)



i) Name the parts marked A B, C (3mks)

A - artesian well
B - Impermeable rock
C - Aquifer/permeable rock

ii) Identify the process marked D (1mk)
percolation/infiltration

iii) State three factors which favour the location of an artesian well. (3mks)

- The aquifer must be exposed in an area of sufficient precipitation.
- The aquifer must lie in between two impermeable rocks for it to retain water.
- The aquifer must be of same permeable materials.

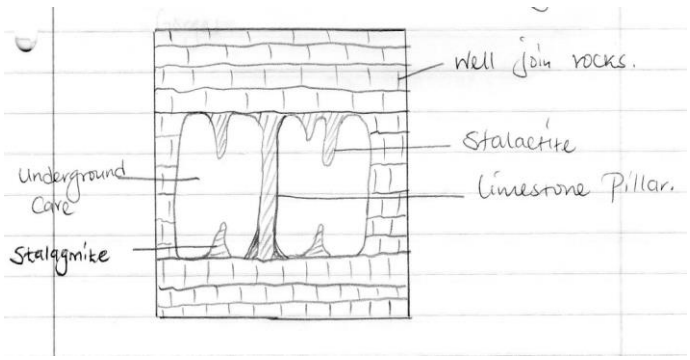
- The basin must dip towards a region where the land surface is lower than it is at the exposed end of the previous formation.
- There must be a partial obstruction or total blockage of exit sufficient for the water that comes in higher portion of the aquifer to be replaced under pressure.

d)

i) Apart from stalagmites, name three other underground features formed in limestone areas. (3mks)

- Stalactite
- Limestone pillar
- Underground cave and caverns

ii) With the aid of a diagram describe how a stalagmite is formed. (6mks)
Rain water dissolves carbon (iv) oxide in the atmosphere. It forms a weak carbonic acid. The weak acid seeps through the roof of an underground cave. It reacts with the limestone rocks to form calcium hydrogen carbon solution. The solution drips slowly through the roof of the cave to the floor. Each drop which falls on the floor spreads out and evaporates. Residue of sodium carbonate which is in the form of tiny crystals is left on the floor. More crystals form on top of the previous ones. The accumulation of such crystals builds a structure upwards, called a stalagmite.



e) i) State three reasons why there are few settlement in karst landscapes. (3mks)

- The surface is rugged, thus hindering construction of transport lines.
- The surface in most places has thin soils which would not encourage agriculture.
- The surface is rocky, which is not conducive to settlement.
- The landscape experience inadequate water supply both on the surface and underground.
- The vegetation in most places is poor and would not support livestock rearing.

ii) Name two surface features found in limestone areas. (2mks)

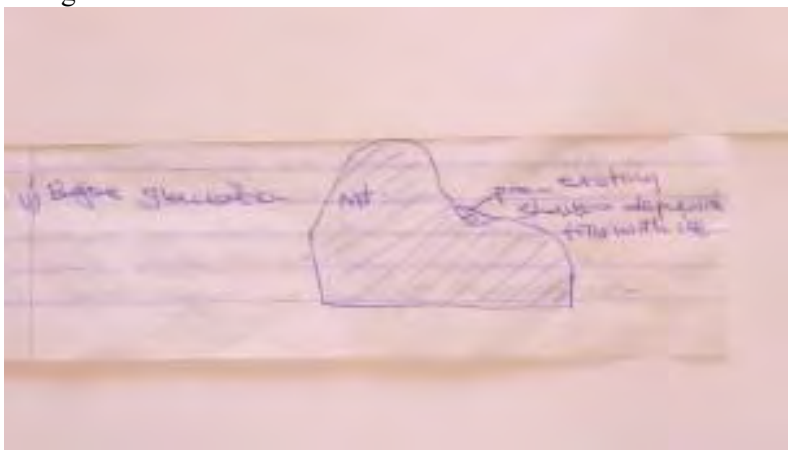
- Dry, valleys
- Grikes
- Clints
- Swallow holes
- Doline
- Urals
- Poljes
- Gorges

8. (a) With the aid of well labelled diagrams describe the processes involved in the formation of a corrie lake. (8mks)

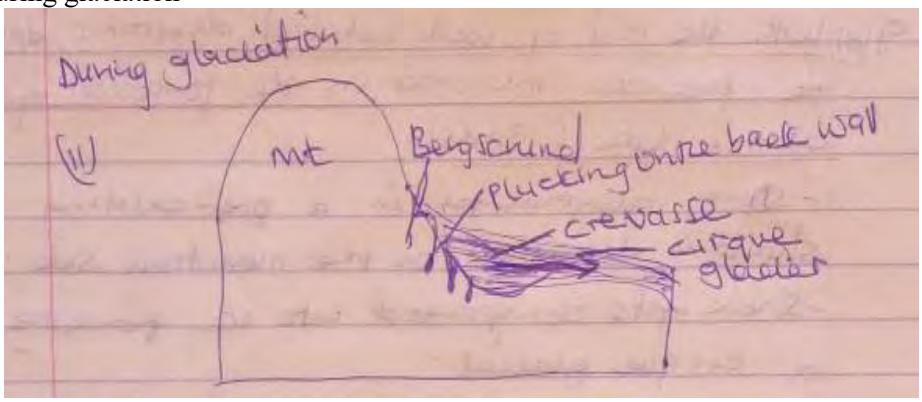
- Snow accumulates in a pre-existing shallow depression on the mountain side.
- Snow gets compacted into ice forming a cirque glacier.
- Alternating freeze thaw or frost action cause rotting and disintegration of rocks a process called nivation which deepens the hollow.
- Abrasion deepens the hollow
- Plucking makes back walls of the depression steeper.
- The result of all these process is the formation f a deep, creep-sided and arm chair shaped depression called a corrie or cirque glacier.
- The cirque glacier has crevasses on the surface and a deep crevasse between the glacier and the back wall called a bergscrund.

- After the ice melts the melt water on rain water may fill up the depression to form a cirque lake called corrie lake or tarn.

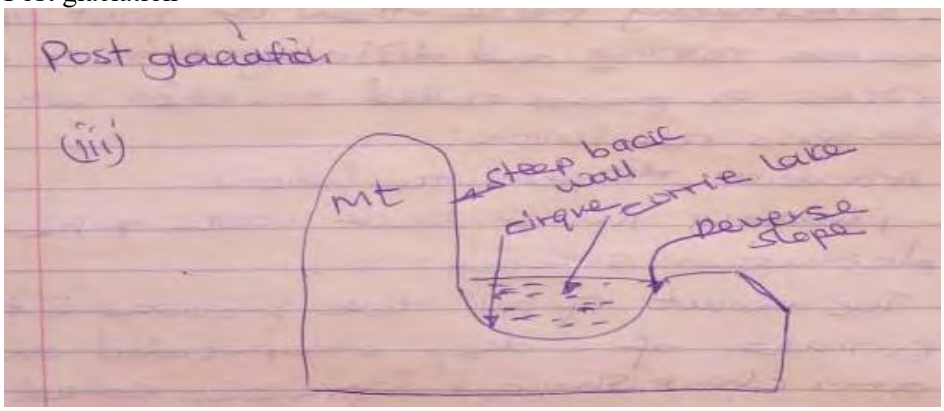
(i) Before glaciation



(ii) During glaciation



(iii) Post glaciation



(b) Explain four ways in which a glaciated landscape is of significance to human activities. (8mks)

- Warm, glaciated valleys are suitable for farming and settlement

- Glaciated upland features form magnificent sceneries that encourage recreation and sporting activities as well as tourism which generates foreign exchange income.
- Steep, glaciated Mt. slopes discourages human settlements and are hence left for forests growth which are exported for building and construction materials.
- Waterfalls formed on hanging valleys provide suitable sites for H.E.P production which is used for industrial/domestic purposes.
- Corrie lakes/tarns offer suitable areas for fishing.
- U-shaped glacial valleys from natural routeways where roads and railways are constructed.
- Fiord coastlines form deep, well-sheltered natural harbours as well as good fishing grounds thus promoting fishing industry.
- Melting water on glaciated mountains as well as cirques are sources of rivers that provide water for industrial, domestic and agricultural use.
- Glacial till and till plains provide fertile soils for arable farming.
- Ice sheets scour rocks of the surface which may expose minerals making it easy to extract them.
- Outwash plains have sand and gravel which are harvested for use in the building and construction industry.
- Glacial lakes in lowland can be exploited for fishing and transportation.
- Glaciation forms magnificent sceneries such as drumlins and esters which are tourist attraction.
- Glaciated lowlands are generally flat or gently sloping, hence suitable for settlements as well as the development of transport and communication lines.

(c) Explain three conditions that may lead to glacial deposition in lowlands. (3mks)

- Change in gradient – A relatively flat surface leads to accumulation of large ice sheets which results in melting and deposition of rock materials.
- Changes in temperature or weather changes – A rise in temperature leads to melting of ice and deposition of materials in the ice.
- -Seasonal melting due cold periods (winter) followed by a warm period (summer) allows materials in the ice to be deposited.

- Weight of the glacier – A thick and heavy glacier exerts pressure at the bottom causing melting and deposition of materials.
- Stagnation of the ice -This causes a lot of pressure at the base of the valley glaciers leading to melting of the ice. The melt water carries and deposits rock materials.
- Base friction – Friction between moving ice and the valley floor leads to deposition of heavy materials below the ice.
- Amount of moraine in the glacier - A heavy moraine or load leads to deposition of some of the materials.

(d) Suppose students were to carry out a field study on glaciation on Mt.Kenya

(i) Name two types of moraines they are likely to study. (2mks)

- Terminal moraine
- Lateral moraine
- Ground moraine
- Medial moraine

(ii) State two problems they are likely to experience during the field study. (2mks)

- Difficult to climb the mountain due to sleep and rugged terrain.
- Inadequate time to climb the mountain
- Heavy rain, strong winds and low temperatures may hinder the study.
- Thick forests or vegetation and swampy conditions may make it difficult to cross/penetrate.
- Dangerous wild animals may attack them
- It is expensive to prepare for this kind of field study.
- It is difficult to conduct pre-visit.
- Low atmospheric pressure or rarefied conditions may lead to breathing problems.
- Poor visibility on the mountain due to low clouds and mist.

(iii) Why was it important for the learners to conduct a pre-visit (2mks)

- To determine appropriate route to be taken
- To farmiliarize themselves with the authority
- Help one identify the appropriate methods to be used
- Helps to identify appropriate equipment to be used
- To identify problems, they are likely to face during the field study

9. a) Describe podzolization as a process of leaching. (2mks)

This form of leaching occurs in cool climates where the precipitation is higher than evaporation. The soils are sandy and well drained. The soils are heavily leached of all bases including calcium magnesium sodium potassium silica and sequin axides of aluminium and iron. The dissolving is done by the organic acids that are formed when rain percolates through fallen vegetation such as the leaves of coniferous trees.

b) State three ways in which mulching helps in soil conservation. (3mks)

- Reduces evaporation of water from the soil.
- Protects the soil from erosion.
- Protects the soil from erosion.
- Increases the humus content of the soil
- Increases the rate of infiltration of water into the soil.

c) Explain how the following factors influences the formation of soil.

i) Climate (4mks)

Rainfall provides water which make it possible for rocks to decays/disintegrate to from soil. Rainfall can affect the rate at which some soil forming processes can occur e.g leaching. High temperatures increase the rate of weathering/accelerate the rate of bacterial activities which generates some of the organic matter in the soil. Water ice, and winds erode, transport soil particle in other area leading to the formation of new soil e.g losses)

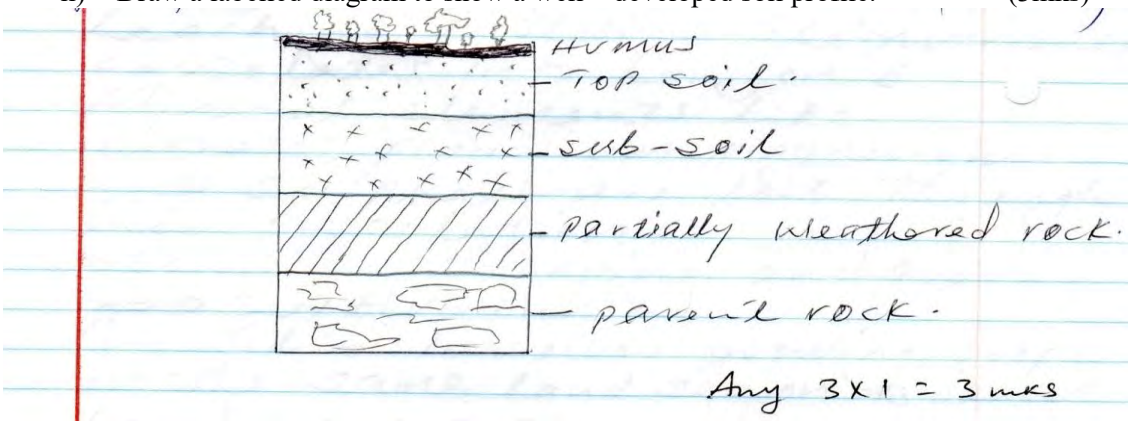
ii) Topography (4mks)

valley bottoms/gentle slopes encourage the formation of deep and fertile soils due to deposition accumulation of materials. Steep slopes encourage erosion of the top layer of soils thus slowing down formation of soil/have thin soils, flat plains/floods plains are saturated with water therefore slows down forming processes. Slope influence arrangement/sequence of soil. Steep slopes are more exposed to the sun/rain which influence weathering of parents rock/soil forms.

d) i) What is soil catena? (2mks)

Soil catena is the sequence of different soils from the same parent rock on a slope.

ii) Draw a labelled diagram to show a well – developed soil profile. (3mks)



Any 3 x 1 = 3mks

e) Explain five causes of soil degeneration. (5mks)

– Soil Erosion
This removes the vegetative cover which protects the soil thus interfering with the soil texture. Wind erosion in arid areas can lead to loss of soil fertility.

– Burning of land
Clearing forms through slash and burn methods used in shifting cultivation can lead to soil degeneration.

– Mono-corpping/mono culture
Planting one type of crop repeatedly year after year, on the same plot can lead to soil degeneration.

– Leaching
Soil nutrients are lost to lower horizons during the leaching processes. The nutrients percolates into horizon B. mineral elements like nitrates potassium magnesium and sulphate are lost through this porcoloation

– Continuous cropping and over cultivation
This involves growing crops on the same land season to season. Land is not given time to rest. The soils became exhausted because the crops continue sucking the nutrients.

– Change of pH
Use of fertilizers on land continually may affect the soil pH value.

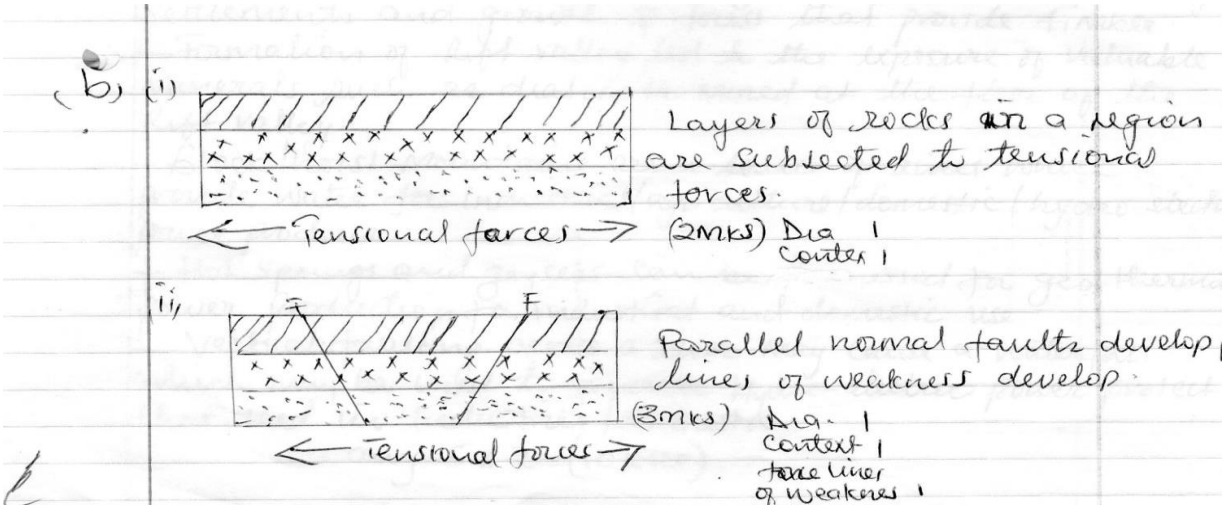
– Human activities
Ploughing of steep land down slope increases soil degeneration through soil erosion activities like carrying construction of roads may lead to soil degeneration because they interfere with soil structure.

10. a) i) Faulting is the process whereby crustal rocks fracture/crack due to Tectonic forces. (2mks)

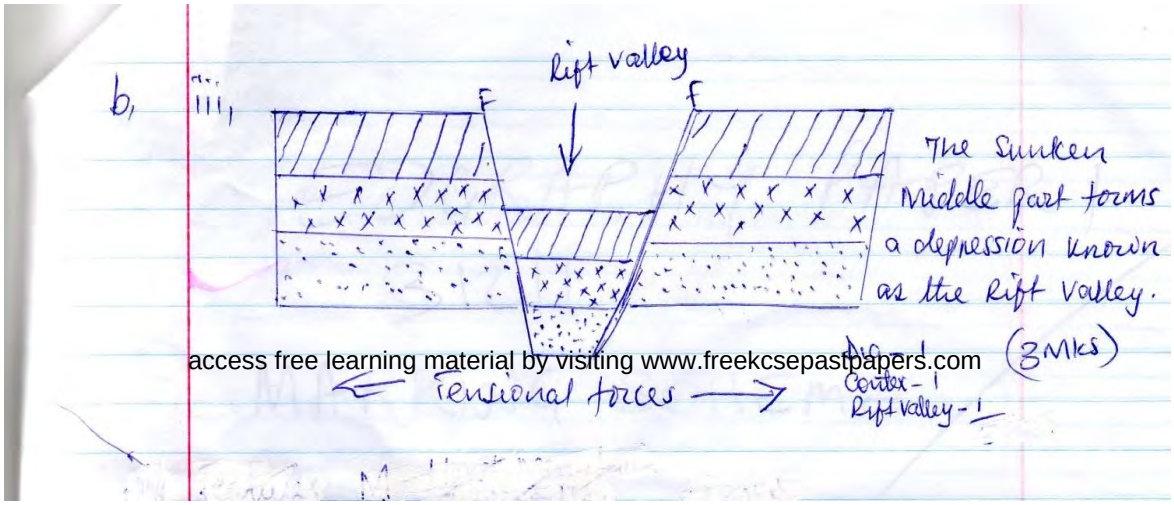
ii) - Normal fault
- Reverse fault
- A tear/sheer / slip
- a thrust fault
- An anticlines fault (2 mks)

iii) M - Horst mountain
N - Rift valley
P - Scarp (3mks)

b) i)



b) iii)



c) Explain 5 positive effects of faulting (10mks)

- Faulted features e.g rift valley and highest mountains provide unique scenery which promotes tourisms hence a source of foreign exchange.
- Some rift valley lakes are important fishing grounds/mining sites/provide water for irrigation.
- Block/host/mountains relieve high rainfall on the wind ward side which favours agriculture which encourage settlements and growth of forest that provide timber.
- Formation of rift valley led to the exposure of valuable minerals such as diatomite mined at the floor of the rift valley.
- Block/host mountains are a source of rivers which provide water for industrial/agriculture/domestic/hydro – electric power produce.
- Hot springs and geysers can be harnessed for geo – thermal power production for industrial and domestic use.
- Vertical faulting across a river may cause a water fall which may be used to generate hydro – electric power project that used in industries /domestic

Any 5 x 2 = 10mks

ACK DIOCIES OF NAMBALE
312/2
GEOGRAPHY PAPER 2

SECTION A

1. a) What is human geography? (2mks)
Human Geography is the study of activities by mankind on the earth surface. 1x2 = 2 marks

b) State three ways in which the study of geography contributes to the economic development of Kenya (3mks)

- Environmental conservation has led to development of national parks which promotes tourism.
- Pedological study has led to improvement of agricultural production hence food security
- Exploitation of forest products act as raw material in paper industry.
- International awareness is an essential tool for national development.
- Helps in advancing careers. Any 3 x1 = 3 marks

2. a) Name the minerals mined in the following regions:
- Kerio Valley - Flour spar (1mk)
- Kariandusi - Diatomite (1mk)
- Lake Magadi - Soda ash tirona (1mk)

b) Give two ways in which minerals occur (2mks)
- Veins and lodes
- seams and beds/ layers
- Alluvial deposits
- weathered rock products

3. a) List two physical factors that influence agriculture (2mks)
- climate
- Relief
- Soils

b) State three benefits of plantation farming (3mks)
- Products high quality products that compete well in world market.
- Enjoys economies of scale resulting to lower production costs.
- Creates employment opportunities
- Products are exploited earning foreign exchange
- Enhances development of transport and communication networks
- Encourages research on modern farming methods
- Utilizes marginal lands through irrigation
- Provides raw materials for industries. Any 3 x 1 = 3 marks

4. a) Define settlement pattern (2mks)
It is an arrangement or layout of dwellings or buildings in an area. 2 x 1 = 2 marks

b) State three characteristics of Central Business District (3mks)
- It is at the city centre/downtown
- It's a focal point joined by roads from all other areas.
- Has tall buildings for offices
- It's an income generating area with hotels, banks, insurance centres etc
- It has high rental value/land very expensive
- Heavy traffic flow on week days
- Deserted on night/has fewer people 3 x 1 = 3 marks

5. State five factors which favour development of car and electronics industry in Japan (5mks)
- Advanced technology and highly skilled labour has increased efficiency.
- Highly developed energy sources provided the power required.
- Available of large external market
- The large population has high purchasing power
- Japan has advanced scientific research
- The government's emphasis on technical and science oriented education.

- Availability of capital to the entrepreneurs.
- The government's emphasis on technical and science oriented education
- Availability of capital to the entrepreneurs.
- The rugged land land scape of Japan discourages agriculture hence industrial development
- Well developed transport network and Japan's strategic location Any 5 x 1 = 5 marks

SECTION B: Answer Q6 and any other two questions from this section.

6. The table below shows the value of some of Kenya's mineral exports from 215 to 2018. Use it to answer questions (a) and (b).

Year / Mineral	2015	2016	2017	2018
Soda ash	13200	8300	7300	12400
Petroleum products	4200	4500	4700	6100
Cement	7300	7800	7400	8900

a) i) Using a scale of l cm to represent l000 million Kenya Shillings, draw a comparative bar graph to represent the data shown. (8mks)

ii) State three advantages of using comparative bar graphs to represent statistical data. (3mks)

- Easy to draw
- Easy to read and interpret
- Easy to compare similar components

- Gives a good impression of totality
- Individual contribution is clearly seen.

Any 3 x 1 = 3 marks

b) Calculate the percentage increase in value of exports between the years 2017 and 2018. (6mks)

Soda ash

$\frac{5100}{7300} \times 100 = 69.9\%$

Petroleum products

$\frac{1400}{4700} \times 100 = 29.8\%$

Cement

$\frac{1500}{7400} \times 100 = 20.3\%$

c) Explain the significance of trade to the economy of Kenya. (8mks)

- Trade generates revenue through taxation of goods and services which is used to develop other sectors of the economy.
- Trade creates employment opportunities thus raising living standards of people
- The demand for manufactured goods for trade stimulates industrial growth and development of agricultural sectors
- Export of goods enables the country earn foreign exchange used to pay for international debts.
- Trade leads to improvement and expansion of transport sector
- Trade enhances economic cooperation between Kenya and the trading partners which creates international relations.
- Trade enhances economic cooperation between Kenya and the trading partners which creates between international relations.

7. a) i) Name three beef farming areas in Argentina (3mks)
- Chaco
- Formosa
- Santiago –del-estro
- Santa-fe
- La-planta
- Montevideo
- Bahaz Blanca
- Fray Bentos Any 3 x 1 = 3 marks

ii) List three beef cattle breeds reared in Argentina (3mks)
- Short lion
- Aberdeen Angus
- Hereford
- Brangus any 3 x 1 = 3 marks

b) State five factors which favour beef farming in Argentina (5mks)
- High quality natural pasture used to feed the animals.
- Extensive flat/gently sloping pampas grassland are suitable for grazing
- The maritime climate with warm conditions and well distributed rainfall for growth of pasture.
- Cross breeding of traditional cattle with high quality breeds like Hereford has improved the quality
- Availability of water supplied using wind pumps ensure constant supply of water.
- Availability of local and export markets that help expand the industry.
- Availability of refrigeration facilities
- Good transport network
- Availability of skilled farmers Any 5 x 1 = 5 marks

c) Explain four benefits of beef farming to the economy of Argentina (8mks)
- Creation of employment opportunities in slaughter house, butcheries ranches thus raising the living standards.
- Beef products provide food improving people's diet

- Beef products are exported to earn the country foreign exchange used to develop other sectors of economy.
- Beef products provide raw materials for industries promoting industrialization
- Income generated from beef farming has been used to improve social amenities Any 4x 2 = 8 marks

d) Outline three differences between beef farming in Kenya and Argentina (6mks)
- In Argentina most beef products are exported while in Kenya most beef products are sold locally.
- In Argentina beef animals and products are transported by railways from ranches to factories while in Kenya animals are transported by roads to slaughter houses
- In Argentina farmers mainly keep exotic breeds in ranches while in Kenya both exotic and local breeds are kept.
- In Argentina there are many beef processing factories/Abattoirs while in Kenya there are few slaughter houses.

8. a) Differentiate between a national park and a game reserve (2mks)
A national park is an area set aside for protection of wildlife and it's managed by the central government and no grazing of livestock is allowed while a game reserve is an area set aside for wildlife protection and is managed by the local/county government and grazing of livestock is allowed

b) i) State four reasons for establishing national parks in Kenya (4mks)
- To preserve the natural beauty
- To conserve wildlife/plants and animals
- To promote tourism or provide areas for recreation
- To create an environment for education and research. Any 4 x 1 = 4 marks

ii) Identify five examples of game sanctuaries in Kenya (5mks)
- L. Nakuru Sanctuary for flamingoes
- Saiwa birds Sanctuary in Kitale
- Maralal Sanctuary
- Nairobi National park sanctuary for rhinos
- Ngulia in Tsavo National park for rhinos

- Kisumu sanctuary for impalas Any 5 x 1 = 5 marks

e) i) Define domestic tourism (2mks)

- Domestic tourism is the visiting to areas of interest by local residents within their country.

ii) State four factors that hinder domestic tourism in Kenya (4mks)

- Some roads leading to tourism sites are poorly maintained.
- Inadequate local complain and advertisement of tourist attractions.
- Negative attitude towards local tourism limits the number of people who engage in local tourism.
- Insecurity from gangsters/poachers in the national parks
- The high cost of accommodation in the tourist lodges
- The high cost of hiring tourist vehicles
- The high cost of entry fee to tourist attraction sites Any 4 x 1 = 4 marks

f) Explain four factors that make Switzerland receive more tourists than Kenya(8mks)

- Switzerland is located in central Europe thus easily accessible by European tourists while Kenya is far away from Europe.
- Switzerland has political neutrality and peaceful atmosphere encouraging tourists while Kenya experiences tribal clashes and terrorist attacks that scare away tourists
- The Swiss speak many European languages making tourists feel at home while Kenya has few people who speak European languages.
- Switzerland carries out more effective marketing of tourism while Kenya has less promotion abroad hence few tourists
- Switzerland has a well-developed transport network for easy access to tourist site while in Kenya many roads to attraction sites are poorly maintained
- Good package tours in Switzerland
- Switzerland is Headquaters for many organizations Any 4 x 2 = 8 marks

9. a) Differentiate between forests and forestry (2mks)

- Forest is a continuous growth of trees and undergrowth covering, a large tract of land while forestry is the act of developing and managing forests 1 x 2 = 2 marks

b) Explain four factors influencing distribution of natural forests in Kenya (8mks)

- The areas which receive high rainfall/ 1000 – 2200mm per year have continuous growth of trees/dense forests while areas that receive low rainfall have scattered/trees
- Cool/warm conditions encourage growth of variety of trees while cold/hot conditions discourage growth of trees
- Deep well drained soils support growth of trees since they allow the roots to penetrate deep into the ground while sandy/thin soils discourage growth of trees
- Areas which are gazette as forest reserves are prohibited from settlement or cultivation hence forests grow without interference.
- Some steep slopes are covered by forest since there are limited human activities.
- Population pressure has led to clearing of some forested areas for settlement (cultivation
- High demand of wood fuel /timber has led to cutting down of trees.
- Forest fires reduce area under forest cover
- Some wild animals (elephants) destroy forests

Any 4 x 2 = 8 marks

c) i) Identify three uses of forest product (3mks)

- Forests are sources of food – fruits, honey, mushrooms etc.
- Forests provide wood used to manufacture paper, ply wood etc
- Forest wood is used in cottage industry for making carvings etc.
- Forest flora and fauna are rich reservoir for research.

ii) Give four characteristics of coniferous forests (4mks)

- Trees have straight trunks
- Trees are cone shaped
- Trees have thick barks
- Most trees are evergreen (not (all)
- Trees have narrow needle like leaves
- Species occur in pure stands
- Trees are softwood
- There is little undergrowth
- Trees have shallow roots
- Trees take long to mature (50-70 years)
- Trees have waxy back
- Trees are tall
- Tree trucks are flexible.

d) Explain factors that have led to the decline of the area under forest cover in Kenya (8mks)

- Outbreak of forest fires during the dry season which destroy large parts of the forest
- Overexploitation which can lead to extinction of some tree species.
- Illegal cultivation has led to clearing of some parts of the forest
- Occurrence of plant disease and pest destroys some trees species in the forest.
- Prolonged drought has caused some trees to dry off
- In some areas there is increase in population of elephants that destroy a lot of trees
- Population pressure has led to encroachment of forested areas.
- The government policy of de gazettment has allowed settlement/cultivation of the forest area

Any 4 x 2 = 8 marks

10. a) i) List three traditional methods in Kenya (3mks)

- Basket fishing
- Harpooning/spear and arrow
- Handlines/hook and line
- Use of herbs
- Lampara/lamp and net

Any 3 x 1 = 3 marks

ii) Give three benefits of fish farming in Kenya (3mks)

- It provides and alternative and healthy sources of proteins to the people
- Fish is sold for income raising farmers' living standards.
- Some fish products are exported thus providing foreign exchange.
- Fish farming activities create employment opportunities
- Fish products are raw materials to some industries
- It helps diversify the economy away from crop farming/livestock keeping.

Any 3 x 1 = 3 marks

b) Describe drifting as a method of fishing (5mks)

- A large net is attached to a drifter ship or a boat.
- It has floats on the upper side to keep it floating in water.
- It has weights on the lower side to make it sink and stand vertically below the water surface.
- Fish swimming through the net is trapped y their gills.
- After enough fish has been trapped, the net is pulled by the drifter to the shore.
- The fish are removed from the net and taken for processing.
- The net is then returned back into the sea for more catch.

c) Explain four reasons why marine fishing in Kenya is less developed (8mks)

- The fisheries have a narrow continental shelf with deep waters that are unsuitable for growth of plankton thus have few fish species.
- Poor transport connections between the fisheries and the market areas discourages fishermen
- Regular coastlines with few indentation are unsuitable for fish breeding
- Inadequate skills and technology discourages deep sea fishing
- Inadequate capital to buy modern fishing vessels and preservation facilities limit the fishing activities
- Low demand for salt water fish thus discouraging marine fishing.
- Competition in deep sea fishing and poaching in territorial waters discourages local fishermen.

Any 4 x 2 = 8 marks

d) You intend to carry out field study on fishing a long Usenge beach on L. Victoria .

i) State three preparations you would make for the study (3mks)

- seek permission from relevant authorities
- Prepare a working schedule
- Conduct a pre-visit/reconnaissance
- Adjust the earlier stated objectives
- Prepare tools and equipment
- Form groups

ii) List three activities you are likely to carry out during the study (3mks)

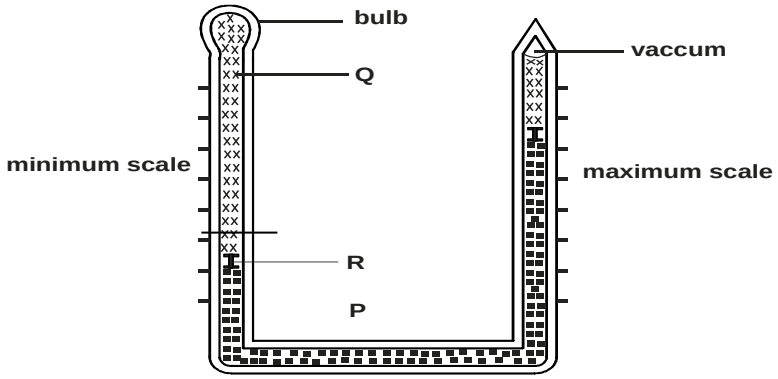
- Asking questions
- Taking photographs
- Filling the questionnaires
- Sketching

Any 3 x 1 = 3 marks

BUTULA SUB-COUNTY EXAMINATION
312/1
GEOGRAPHY PAPER 1

SECTION A
Answer ALL questions in this section.

1. The diagram below shows a six's thermometer.

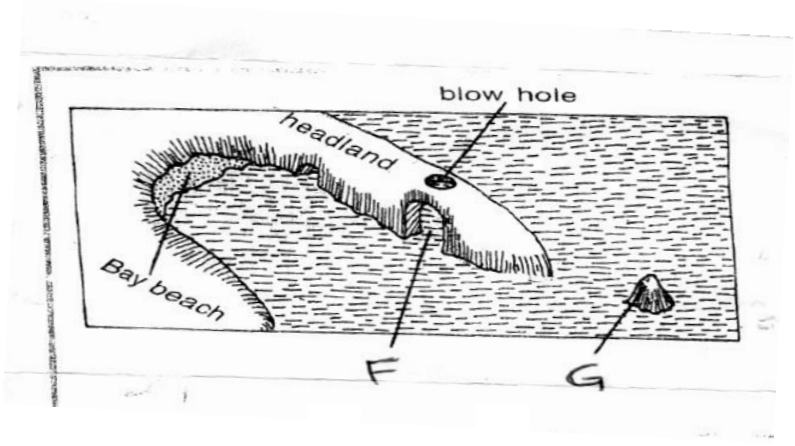


a) Name the parts marked P, Q and R. (3 marks)
b) The table below represents the rainfall and temperatures data of station X.

Month	J	F	M	A	M	J	J	A	S	O	N	D
Temp °C	28.9	29.7	30.3	29.9	29.7	29.2	28.4	28.7	29.6	30.1	29.2	28.7
Rainfall mm	9.0	8.0	21.0	49.0	25.0	9.0	20.0	10.0	4.0	10.0	17.0	11.0

i) What is the annual range of temperature? (1 mark)
ii) Calculate the total rainfall of the station. (1 mark)

2. a) What is rock metamorphism? (2 marks)
b) Give three examples of chemically formed sedimentary rocks. (3 marks)
3. The diagram below shows erosional features of the waves at the coast. Use it to answer question



(a) Identify the features marked **F** and **G**. (2 marks)
(b) Give three submerged upland coasts (3 marks)
4 (a) Describe how lava-dammed lake are formed. (3 mrks)
(b) State two ways in which lakes influence the climate of the surrounding areas. (2mrks)
5 (a) Distinguish between soil profile and soil catena (2 marks)
(b) Give three soil forming processes. (3 mark)

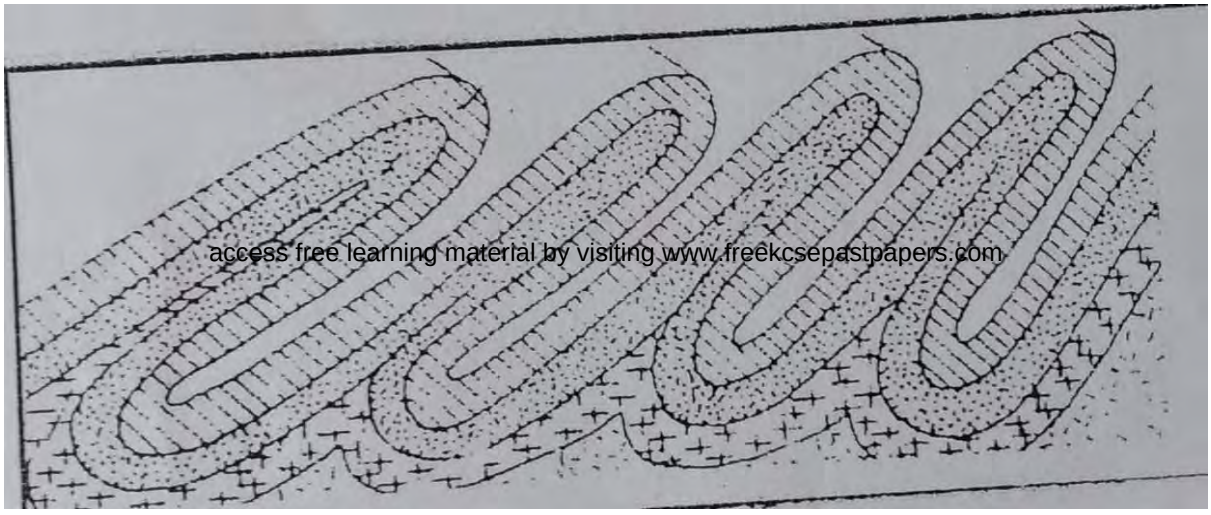
SECTION B

Answer question 6 and any other two questions from this section

6. Study the map of Kijabe 1:50000(sheet 134/3) provided and answer the following questions.

a) i) State the title of the map (2 marks)
ii) Convert the ratio scale into statement scale (2mks)
iii) Identify the physical features found on grid source 4293
b) i) What is the bearing of the cattle dip at Ewaso Kedong valley from grid reference 3193 (2 marks)
ii) What is the exact height of Kijabe hill at grid 2699. (2 mark)
iii) Explain three factors that influence settlement in the area covered by the map (6mks)
iv) Name two methods used to show relief. (2 marks)
c) Describe relief of the area covered by the map (5 marks)
d) Field study was carried out in Kijabe .
i) State two types of vegetation the researchers identified. (2 marks)
ii) State two challenges they encountered. (2 marks)

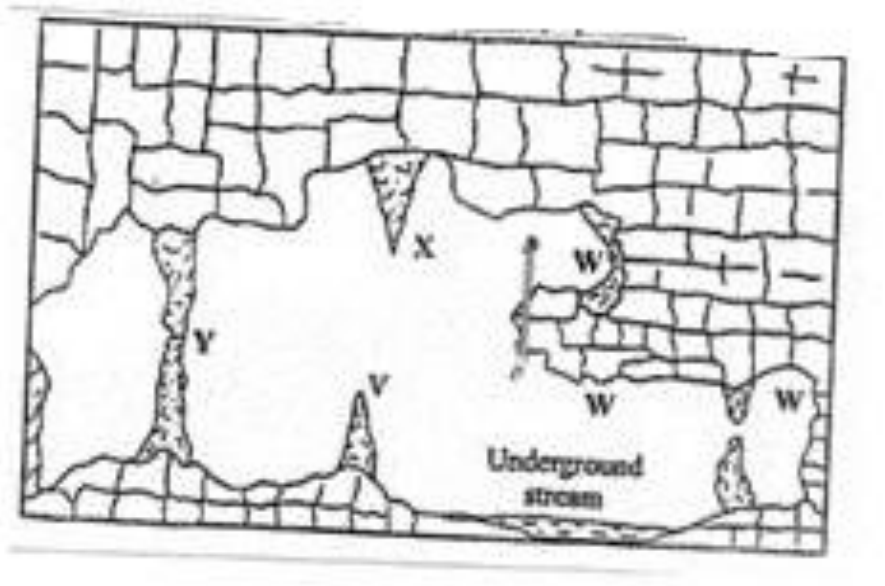
7. (a) (i) What is folding? (2 Marks)
(ii) Name three fold mountains formed during Caledonian Orogeny. (3 Marks)
(b) State four characteristics of folded landscape. (4 Marks)
(c) The diagram below shows a type of fold.
(i) Name the type of fold. (1 Mark)



(ii) Describe how the above type of fold is formed. (7 Marks)
(d) Explain four effects of Fold Mountains on human activities. (8 Marks)

8 a. Name three types of desert landscapes. (3 marks)
b. Explain three ways through which the wind carries out erosion in the desert. (6 marks)
c. With an aid of a well labeled diagram, describe how a rock pedestal is formed. (6 marks)
d). State two factors which influence transportation of materials by wind in deserts. (2 marks)
e). Explain four ways through which desert influence human activities. (8 marks)

9 . The diagram below represents underground featured in a limestone area. Use it to answer questions



a). i). Name the featured marked X, V and W. (3 mrks)
ii). Describe how the feature marked Y is formed (6 mrks)
b). i). What is an artesian basin? (2 mrks)
ii). Explain three factors which influence the formation of features in limestone areas (6mrks)
c). You are supposed to carry out a field study of an area eroded by water.
i). Give three reasons why you would need a map of the area of study (2 mrks)
ii). Name two erosion features you are likely to identify during the field study (2 mrks)

10. a i) Define the term glaciation. (2 mrks)
ii) Name three types of glaciers. (3 mrks)
b) Describe how the following features found in upland glaciated landscape are formed.
i) U-shaped valley (5 mrks)
ii) Pyramidal peak (5 mrks)
c) Explain three significances of upland glaciated features to human activities. (6 mrks)
d) Suppose you were to carry out a field study of glaciated lowland.
i) State two advantages of using oral interview to collect information during the field study. (2mrks).
ii) Name two features found in glaciated lowland that you are likely to study. (2 mrks)

BUTULA CLUSTER FORM 4 JOINT EVALUATION
312/2
GEOGRAPHY PAPER 2

SECTION A
Answer all the questions in this section

1. a) Name two exotic species of trees planted in Kenya (2 mks)
b) State three reasons why it is necessary to carry out afforestation programs in Kenya (3 mks)
2 a) Name two water canals found in Africa. (2mks)
b) Give three roles of transport on industry. (3mks)
3. a) State **three** measures which the government of Kenya has taken to reduce infant mortality (3 marks)

b) Give **two** negative effects of lowpopulation growth in a country. (2 marks)

4 a) Give any two minerals found in the Rhur region of Germany. (2mks)

b) Identify three main types of industries found in Kenya. (3mks)

5 a) List two factors influencing trade (2 marks)

b) Identify THREE major imports to Kenya. (3 marks)

SECTION B

Answer question 6 and any other two questions from this section

6. Study the photograph below and answer the questions that follow.

a i) Identify the type of photograph above. (1mk)

ii) Give two reasons for your answer above. (2mks)

iii) Draw a rectangle measuring 8cm by 6cm. on it, mark and label the main features. (4mks)

b i) Name two types of coffee grown in Kenya. (2mks)

ii) Name three counties in Western Kenya where coffee is grown. (3mks)

iii) Give three conditions favoring coffee growing in Kenya (3marks)

c i) State three problems facing coffee farmers in Kenya. (3mks)

ii) Identify three ways in which the government has attempted to promote coffee farmers in Kenya. (3mks)

d Explain two reasons why coffee production is more developed in Brazil than in Kenya. (4mks)

7. a) Apart from the sun, name ***three*** other sources of energy (3Marks)

ii) State ***four*** advantages of using solar energy (4Marks)

b) Give ***four*** ways in which Kenya has benefited from hydroelectric power scheme (4Marks)

c) Explain ***five*** factors favouring development of Hydroelectric power projects (10Marks)

d) Explain ***two*** impacts of energy crisis in the society. (4Marks)

8 a) i.) Define the term land reclamation. (2mks)

ii) State three ways through which land can be rehabilitated in Kenya. (3mks)

b) A part from Mwea Tebere, identify any three irrigation schemes in Kenya. (3mks)

ii) Explain three physical factors that influenced the location of Mwea Tebere irrigation scheme. (6mks)

c) Give three problems facing Mwea Tebere irrigation scheme. (3mks)

d) Identify two benefits of Zuyder Zee project in Netherlands (2mks)

i) Explain three similarities between land reclamation in Kenya and Netherlands. (6mks)

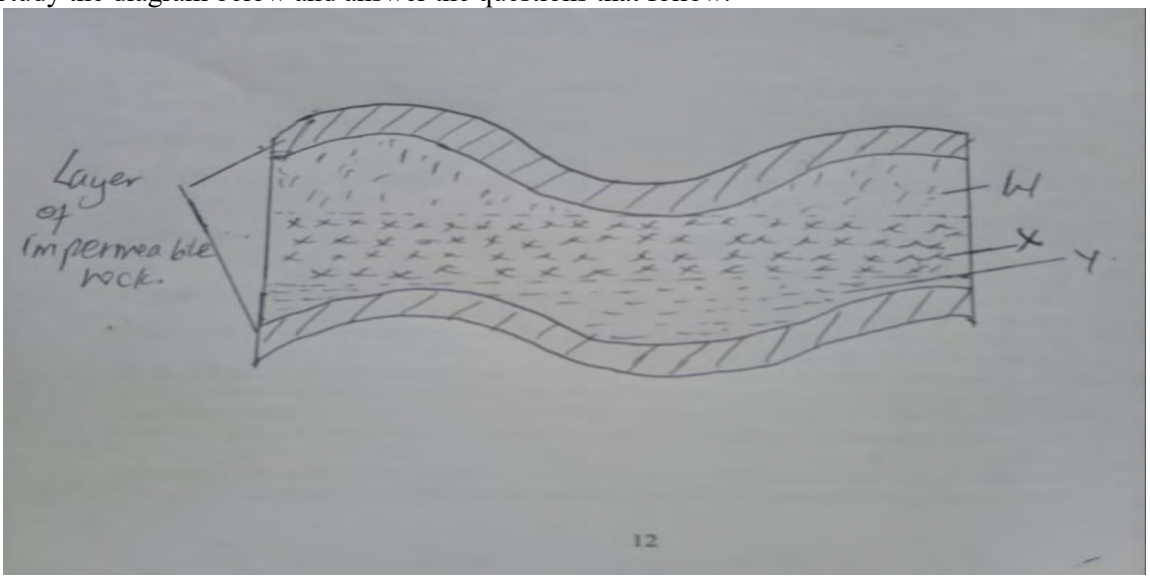
9. a) Define the term Mining. (2mks)

ii) List three ways in which minerals occur. (3mks)

b) Identify any three minerals mined within the rift valley of Kenya. (3mks)

ii Mention any two problems associated with underground mining . (2mks)

c) Study the diagram below and answer the questions that follow.



i) Name the part labeled WXY (3mks)

ii) State three conditions that favor the formation of an oil reservoir. (3mks)

d) Students carried out a field study in a mining site.

i) State one objective of the study. (1mk)

ii) Give two methods they used to collect data. (2mks)

iii) Identify the features they may have observed to conclude that the land has been derelicted. (3mks)

iv) A part from land dereliction, give three other effects of mining on the environment. (3mks)

10. a) Define the term environment. (2mks)

ii) State three farming methods that assist in soil conservation. (3mks)

b) State three ways in which people are affected by floods. (3mks)

ii) Explain three methods in which floods can be controlled. (6mks)

c) Give two causes of water pollution. (2mks)

ii) State three effects of water pollution on environment. (3mks)

iii) Explain any three ways in which drought and desertification can be controlled .(6mks)

BUTULA SUB COUNTY EXAMINATION
312/1
GEOGRAPHY PAPER 1
MARKING SCHEME

1

a) Name the parts marked
P - Mercury
Q - Alcohol
R - Metal index ***3 marks***

b) i) **Annual range of temperature**
1.9°C ***1 mark***

ii) **Total annual rainfall of the station**
193mm ***1 mark***

2

a) What is rock metamorphism
– It is the change that occur when pre-existing rocks (sedimentary, igneous) are subjected to heat, pressure or both heat and pressure. ***2 marks***

b) Three examples of chemically formed sedimentary rocks
– Travertine / Tufa
– Dolomite / dolostone
– Trona
– Gypsum
– Rock salt
– Limonite
– Haematite
– Flint /chert

3 marks

3.The diagram below shows erosional features of the waves at the coast. Use it to answer question

(a) Identify the features marked **F** and **G** (2 marks)

– **F – arc**
– **G- stack**

(b) Give three submerged upland coasts (3 marks)

– **Ria coasts**
– **Fiords/fjord coast**
– **Longitudinal/Dalmatian coast**

4 a)

(i) Describe how lava-dammed lake are formed. (3 marks)
Lava from erupting volcano flows downhill into a river valley √; It cools and solidifies filling the valley √; It forms a wall of solid lava which may block a river √; water accumulates behind this barrier to form a lake √. Each point 1 mark (3 x 1) marks

(ii) State two ways in which lakes influence the climate of the surrounding areas. (2 marks)
– Evaporation of lake water increases the relative humidity over the surrounding areas √
– The moisture from lakes when picked by winds may lead to increased precipitation over the land. √
– The presence of lake results in the development of pressure differences between land and lake breezes; the breezes may divert or reverse the prevailing wind.
– Winds from the lake to the land generally lower the temperatures over the land, making the land cooler. √
Any three 2x1=2 marks

5 (a) Distinguish between soil profile and soil catena (2 marks)
– **Soil profile is vertical arrangement of soil particles from the surface to the bed rock while soil catena is horizontal arrangement of soil particle along a slope from the top to the bottom**

(b) Give three soil forming processes. (3 marks)
– **Weathering**
– **Decomposition of organic mater**
– **leaching**

SECTION B : MAP WORK

6. Study the map of kijabe 1:50000(sheet 134/3) provided and answer the following questions

a) i) State the title of the map (2 marks)
East Africa 1:50000(sheet 134/3)

ii) Convert the ratio scale into representative fraction (2mks)
1cm rep 0.5KM

iii) Identify the physical features found on grid source 4293
River
Forest

b) What is the bearing of the cattle dip at Ewaso Kedong valley from grid reference 3193 (2 marks)
247 ±1

ii) What is the exact height of kijabe land at grid set 2699. (2 marks)
2660m

iii) Explain three factors that influence settlement in the area covered by the map
Vegetation - forested areas are avoided
Relief - steep slopes are avoided
Transport - Dense settlement along transport lines e.g escarpment settlement

iv) Mention two methods used to indicate relief. (2 marks)
Contuors
Trigonometrical stations

– ii) Describe relief of the area around by the map (5 marks)
The area has steep slopes e.g. around kijabe hill
– The south western part of the area is gently sloping shown by spaced contours
– There is an escarpment on the southern part of the area covered by the map
– The highest point is 2660m above sea level which is to the North west.
– There are river valleys e.g. Ewaso Kedong

iii) Field study was carried out in Kijabe.
– State two types of vegetation the researchers identified. (2 marks)

– Thicket & forest, scrub
– State two challenges they encountered. (2 marks)
– Steep slopes difficult to climb.
– Fear of attack by wild animals in the forest.

7.

(a)

(i) What is folding? (2marks)
Folding id the bending or distortion of crustal rocks due to compressional forces

(ii) Name 3 fold mountains formed during the Caledonian Orogeny (3marks)
Akwapin hills in Ghana
Scandinavian highlands
Scottish highlands

(b) State four characteristics of folded landscape (4marks)
Has fold mountains
The landscape has escarpments
Has numerous depressions
Made up of rolling plains
The land scape has intermontane plateaus
Intermontane basins
it is made of valleys
Has several ridges
made up of Interlocking spurs

(c) The diagram below shows a type of fold

(i) Name this type of fold (1mark)

Isoclinal fold

(ii) Describe how this type of fold is formed (7marks)

They are formed when the crustal rocks are subjected to intense compressional forces.
Intense compressional forces on one side on the other side of crustal leads to folding of the crustal rocks
Continued intensity of compressional forces on one side than on the other leads to formation of a series of close parallel folds.
The folds are inclined towards the side with less compressional forces to form parallel inclined series of horizontal synclinonium and anticlinoriums
This is called an isoclinal fold

(d) Effects of Fold Mountains on human activities (8marks)

Fold mountains are sources of rivers that provide water for generation of H.E.P/ domestic use / Irrigation/ industrial use
Fold Mountains are often forested and provide timber which is is used in building and construction industry/ medical.
Some fold mountains have exposed valuable mineral deposits which are mined
Fold Mountains are tourist attraction / snow covered slopes encourage sporting activities
The windward slopes of some fold mountain create rain shadow effect which result into aridity, discouraging crop farming/ encourages livestock farming
Some fold mountains may act as barriers to transport and communication lines difficult/ expensive Any 4x2 (8marks)

8. Stony deserts
Rocky deserts

b. i). Wind Abrasion - This is a process whereby carried materials / scrubs polishes desert rock surface hence further erosion.

ii. Deflation - This is the blowing away of loose materials like dust and fine particles by rolling them on the ground.

iii. Attrition - This is the wearing away of wind horne materials as it scrub against the rock surface.
The collision of the rocks against each other leads to further erosion of the rocks.

c). Strong winds come in to contact with exposed mass of rocks with alternating layers of resistant and less resistant rocks. The less resistant layers are eroded more than the resistant layers. There is more wind erosion the base of the rock since the wind carries more materials for erosion at .Eventually an irregular mass of rocks with protruding layers of alternating hollows is formed rock pedestal

d). Strength and speed of the wind
Presence of obstacles.
Presence of vegetation cover.
Weather changes.
Nature of the leads.

e). Desert soil are dry thereby discourage settlement and practice of agriculture.
- Loess deposits transported by wind to far place are fertile and encourage agriculture.
- Solar radiation which is intensive in deserts is used to generate solar energy.
- Deflation hollows may contain water which is used for domestic and irrigation
- extensive bare surface of the deserts are used for testing weapons and car speed.

9. a).

i). The diagram below represents underground features in a limestone area. Use it to answer questions (a)
X - Stalactites
V - Stalagmite
W - Care/ Cavern

ii). Solution of Calcium Carbonate trickles down slowly through the roof of a care or cavern. Solution droplets hang on the roof of a care.

- Water evaporates and calcium carbonate is precipitated. The precipitated calcium carbonate gradually builds downwards ones a period of fine as the solution continues to drip from the roof. This forms a stalactite.

– The solution splashes on the floor and water evaporates. The calcium carbonate in it precipitates and gradually builds upwards to form a stalagmite.
– Onetime, the stalactite join the stalagmite to form a pillar or column of feature Onetime, the stalactite join the stalagmite to form a pillar or column of feature. 6 x 1 =marks

b).

i). It is a saucer shaped depression consisting of layer A permeable rock lying between two layers A impermeable rocks, with part of permeable rock exposed to the surface along the edges of the basin.
1 x 2 = 2 marks

ii).

- The surface rock must be thick limestone to allow solubility by rain water
– The rock should be hard and well jointed to allow water to percolate through the lines of weakness.
– The climate should be hot and humid to facilitate chemical reaction or weathering or carbonation.
– The water table should be far below the surface to allow the formation of the features (6 mks)

c).

i). Reasons why you would need map of the area of study

- To show the route to be followed during the study
- To show the extend or delimit the area of the study
- To show drainage features
- To be able to estimate distances
- To show the sever nature of terrain. Any 3 x 1 = 3 mks

ii). Two erosional features you would identify during the study

– Exposed rocks
– Ridges //clints
– Butes
– Mases
– Swallow holes
– Dolines
– Poljes
– Uvalas
– Gullies
– Wadia
– Strikes
– Dry river beds
– Earth pillars 1st 2 x 1 = 2 mks

iii).

- Building of gabions
– Construction of gabions
– Planting trees
– Planting of cover crops/mulching/strip farming
– Adapting farming methods that allow conservation of soil.

10. a) **<u>Definition glaciation</u>**

– glaciation refers to the action of moving ice / process by which glaciers change the landscape on large scale

ii) <u>Types of glaciers</u>

– continental glacier
– valley glacier
– piedmont glacier
– cirque glacier
– niche glacier ***3mks***

b) i) <u>Formation of V-shaped valley</u>

– a pre-existing V-shaped valley is filled with ice / glacier
– the glacier erodes the V-shaped valley by abrasion and plucking process vertically and laterally
– the valley is deepened and widened by vertical erosion and lateral erosion

- the end spurs are truncated / trimmed / cut
- the ice melts away leaving a U-shaped valley ***5mks***

ii) **Formation of a pyramidal peak**

- initially ice collects in several hollows on the mountain side
- the ice exerts pressure on the hollows / cracks
- the plucking action of the ice enlarges the hollows so that more ice collects in them
- freeze thaw action of the ice leads to the expansion of cracks / hollows making them large basin which are called cirques
- nivation into the back walls of the hollows making them recede into the mountain side / the cirques recede toward each other
- steep sided, knife edged ridges called aretes are formed and they separate the cirques
- eventually three or more of these ridges / aretes converge at the top of the mountain forming a jagged peak called a pyramid peak / horn (surrounded by corries cirques) ***5mks***

c) Significance of upland glaciated features to human activities

- the warm valleys are suitable for farming / cultivation / glaciated uplands provide suitable grazing lands as they form fine benches on which summer pasture grow e.g. in Switzerland
- glacial uplands form magnificent features that encourage recreation / sporting activities e.g. mountaineering, ice skating, skiing /encourage tourism e.g. features like pyramidal peak, aretes etc.
- glaciated discourage human settlement hence the growth of the forest and therefore lumbering is practiced
- waterfalls formed by rivers in glaciated highlands provide suitable site for hydro-electric power production
- corries lakes / terms offer suitable areas for sports fishing
- the U-shaped valley / glacial through form natural route way e.g. roads / railway
- fiord coastlines harbours as well as good fishing grounds ***6mks***

d) **i)Advantages of using oral interview to collect information during the field study**

- it gives first-hand information
- the interviewer can seek clarification on any ambiguities questions

- the interviewer create a good rapport with the interviewee
- the interviewer can elicit more information by initiating further discussion
- the method is useful in collecting information from people who cannotwrite and read ***2 x 1 = 2mks***

ii) Features found in a glaciated lowland

- depressions / glacial lakes
- rochemontonee
- crag and tail
- Drumlins
- boulder train
- kames
- terminal moraine
- till plain / glacial till / boulder
- outwash plain ***2 x 1 = 2mks***

BUTULA CLUSTER FORM 4 JOINT EVALUATION
312/2
GEOGRAPHY PAPER 2
MARKING SCHEME

SECTION A
Answer all the questions in this section

1. (a) **Name two exotic species of trees planted in Kenya. (2 marks)**
   - Pine
   - Cypress
   - Blue gum /eucalyptus
   - Wattle
   - Kei-apple
   - Jacaranda
   - Bomb ax
   - Grevilea
   - Cedar

b) **State three reasons why it is necessary to carry out Afforestation programmers in Kenya. (3 marks)**
   - To protect water catchment areas
   - To protect soil from erosion by wind/water
   - To ensure sustainable supply of forest products
   - To put more land under forest cover
   - To check the extinction of indigenous trees.
   - **To regulate climate**

2 a) Name two water canals found in Africa. (2mks)
- Jonglei canal
- Suez canal

b) Give three roles of transport on industry. (3mks)

- transportation of raw materials to industries
- transportation of finished goods to the market
- transportation of workers to industries

3. **(a) State three measures which the government of Kenya has taken to reduce infant mortality. (3Marks)**
- The has been widespread immunization for children to control diseases
- The government provides free medical services for children/free mosquito nets
- The government provides parental education to ensure better care for children breastfeeding campaigns/family planning
- There is a government policy granting longer maternity/paternity leave for mothers to take care of the new born
- Research on infant related diseases has been stepped up
- The government encourages provision of homes for orphans
- Training of traditional midwives
- The government has increased/improved medical facilities

(b) **Give two negative effects of low population growth in a country. (2 Marks)**
- It leads to under utilization of resources/slow economic growth
- It leads to reduced market for goods
- It leads to an increased ageing population in a country/leads to high dependency
- It leads to reduced labour force/productivity
- Its expensive to provide social security

4 **a) Give any two minerals found in the Rhur region of Germany. (2mks)**
- Limestone
- Iron
- Coal

b) Identify three main types of industries found in Kenya. (3mks)

- Primary
- Secondary
- Tertiary

5. a) List two factors influencing trade (2 marks)

- Capital
- Market
- Government policy
- Security
- Availability of goods

b) **Identify THREE major imports to Kenya. (3 marks)**

- Machinery
- Fertilizers
- Pharmaceuticals
- Crude oil
- Skilled labour
- Wheat
- Iron and Steel
- Textiles

SECTION B

Answer question 6 and any other two questions from this section

6. Study the photograph below and answer the questions that follow.

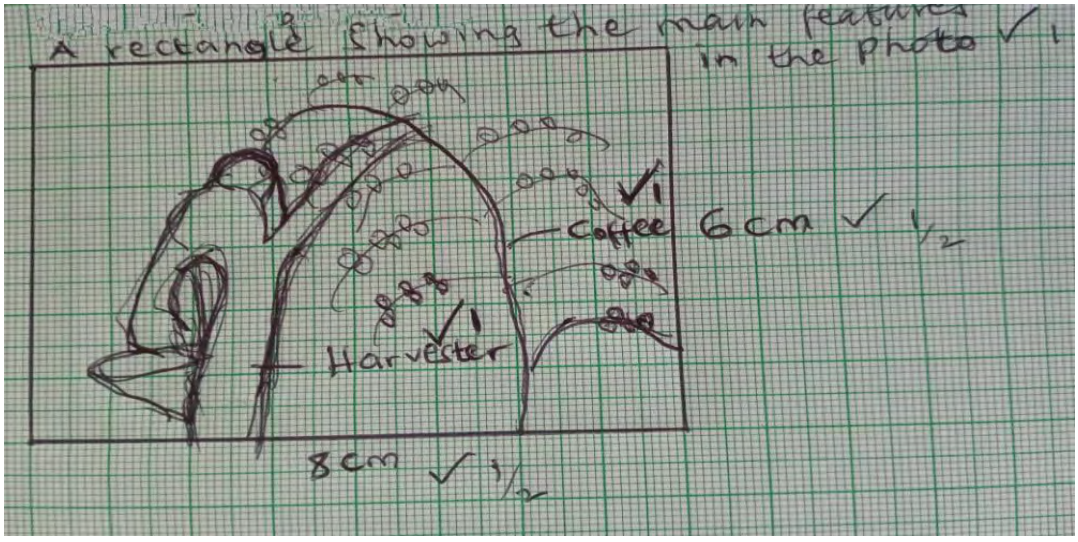
a i) Identify the type of photograph above. (1mk)

Ground close-up

ii) Give two reasons for your answer above. (2mks)

- The camera is held horizontal to the object
- There is one main feature/activity
- Features behind are obscured

iii) Draw a rectangle measuring 8cm by 6cm. on it, mark and label the main features. (4mks)



b i) Name two types of coffee grown in Kenya. (2mks)

- Robusta
- Arabica

ii) Name three counties in Western Kenya where coffee is grown. (3mks)

- **Bungoma**

- **Kakamega**
- **Vihiga**

iii) give three conditions favoring coffee growing in Kenya (3marks)

- Moderate to high temperatures of 14-16 degreed Celsius
- Moderate to high rainfall ranging between 1,000-2,000mm per annum
- Deep fertile volcanic soils
- Undulating landscape with hill slopes and gentle slopes

c i) State three problems facing coffee farmers in Kenya. (3mks)

- Soil exhaustion
- Climatic hazards
- Pests and diseases
- Price fluctuations
- Poor roads
- Delays in payments
- Mismanagement.

ii) Identify three ways in which the government has attempted to promote coffee farmers in Kenya. (3mks)

- Improved road transport
- Research on new species has been conducted
- Control of pests and diseases
- Advanced loans to farmers
- Provided extension workers to advice farmers
- Helped in marketing coffee

D) Explain two reasons why coffee production is more developed in Brazil than in Kenya. (4mks)

- Brazil has more extensive land for coffee farming than Kenya
- Brazil has more developed transport network in form of roads and railway
- There is more efficient marketing in Brazil than in Kenya
- Brazil face s few climatic hazards compared to Kenya which faces prolonged drought.

7

a) i) Apart from the sun, name three other sources of energy

Water, Wind, Wood, Tides, Biomass (Any 3x1=3mks)

ii) State four advantages of using solar energy

- Cheap source of energy
- Available almost every where
- It can be stored and used later
- Environmentally friendly
- Inexhaustible source of energy. (Any 4x1=4mks)

b) State four ways in which Kenya has benefited from hydroelectric power scheme

- Provision of electricity
- Foreign exchange
- Fishing grounds
- Modified the local climate
- Control of floods
- Improvement of transport and communication. (Any 4x1=4mks)

c) **Explain five factors favouring development of Hydroelectric power projects**

- Hard basement rocks to provide a firm foundation for dam construction
- Presence of waterfalls to provide a massive hydraulic force head for power generation
- Regular/large volume of water to ensure continuous power generation
- Non porous rocks to prevent water loss/seepage underground
- Presence of a deep narrow valley/gorge to provide a large reservoir behind the dam/reduce cost of building embankments
- Government policy – availability of land/space for setting up the plant
- Market to buy the produced HEP
- Adequate capital to set up the project since it involves high capital outlay (Any 5x2=10mks)

d) Explain two impacts of energy crisis in the society

- Is a situation where the demand for oil is higher than supply, leading to high oil prices
- Increased transport cost
- Increase in price of oil, increases price of other commodities
- Affect balance of trade
- Agriculture inputs such as fertilizers would become more expensive (Any 2x2=4mks)

8 a) Define the term land reclamation. (2mks)

Land reclamation is the practice by which less useful land is converted into more useful land.

ii) State three ways through which land can be rehabilitated in Kenya. (3mks)

- Planting vegetation,
- Making terraces,
- building gabions,
- adding manure,
- filling up quarries.

b) A part from Mwea Tebere, identify any three irrigation schemes in Kenya. (3mks)

- Perkerra irrigation scheme,

- Bura, Ahero,
- West Kano,
- Bunyala, etc.

ii) Explain three physical factors that influenced the location of Mwea Tebere irrigation sche (6mks)

- Mwea plains have black cotton soils suitable for rice farming.
- Gently sloping land to make it possible for irrigation .
- Permanent rivers of Nyamidi, Murubara and Thiba that provided water for irrigation.
- High temperatures suitable for cultivation of rice and irrigation.
- Loamy soils suitable for cultivation of other crops to support families.

c) Give three problems facing Mwea Tebere irrigation scheme. (3mks)

- Diseases such as malaria and bilharzia
- Delayed payments
- Weeds
- Financial mismanagement
- Poor access roads
- Pests

d) Identify two benefits of Zuyder Zee project in Netherlands. (2mks)

- Creation of large fresh water lakes
- Provision of infrastructure and other social amenities.
- Has reduced tidal flooding.

ii) **Explain three similarities between land reclamation in Kenya and Netherlands.** (6mks)

- In both, reclaimed land is located in low lying areas such as shallow coastal areas and swamps.
- In both, floods are used to control water from entering the reclaimed areas.
- In both, ditches and canals are used to drain water from reclaimed areas.
- In both, scientific methods such as use of fertilizers to improve soil fertility are used.
- In both countries the government organizes the work of reclaiming land.

9 **a) Define the term Mining.** **(2mks)**

Extraction of valuable minerals and fossil fuels from the earth's crust

ii) List three ways in which minerals occur.

- Beds and seams
- Lodes and veins
- Alluvial deposits
- Weathering products

b) i) Identify any three minerals mined within the rift valley of Kenya. (3mks)

- Diatpomite
- Flourspar
- Soda ash
- oil

ii Mention any two problems associated with underground mining. (2mks)

- Flooding from subterranean water
- Collapse of tunnel roofs
- Dust leading to respiratory diseases

c) Study the diagram below and answer the questions that follow

iii) Name the part labeled WXY **(3mks)**

W- Gas
Y- Oil
Y- Water

iv) State three conditions that favor the formation of an oil reservoir. (3mks)

- Presence of sedimentary rocks
- Presence of organic remains/fossils
- Presence of pressure to compress or organic remains
- Presence of porous rocks.

d) Students carried out a field study in a mining site.

i) State one objective of the study. **(1mk)**

- To identify the type of mineral mined
- To establish the significance of the mining activity
- To find out the problems affecting the mining activity

ii) Give two methods they used to collect data. **(2mks)**

- Questionnaires
- Conducted interviews
- Collected rock samples of the ore
- Took photographs

iii) Identify the features they may have observed to conclude that the land has been derelicted. **(3mks)**

- Open pits/Quarries
- Heaps of soil material
- Cleared vegetation
- Bare surface

iv) A part from land dereliction, give three other effects of mining on the environment. **(3mks)**

- Pollution
- Loss of biodiversity
- Disruption of water table
- Soil erosion

10 **a) Define the term environment. (2mks)**

External conditions that surround a plant or an animal.

ii) State three farming methods that assist in soil conservation. (3mks)

Contour farming
Mulching
Crop rotation

b) i) State three ways in which people are affected by floods. (3mks)

- Loss of lives and property
- Destruction of transport and communication lines
- Displacement of people
- Spread of waterborne diseases like cholera

ii) Explain three methods in which floods can be controlled. (6mks)

- Dykes are constructed along river banks levee of rivers to increase their height in order to prevent water from over flowing
- Dredging of river channels to deepen/ widen them to make it possible for them to accommodate excess water
- Dams are build across the rivers to control the amount of water discharges downstream/ construction of earth dams to hold back water
- Training/ re- directing a river/ straightening of a river to control its wild flow (training means cut meander loops
- Planting of trees in the catchment areas to reduce surface run off and increase infiltration
- Divering tributaries to other rivers to reduce the volume

c) Give two causes of water pollution. (2mks)

- Oil leaks from ships/ trucks
- Industrial effluent when discharged into rivers/ lakes
- Washing away (into rivers and lakes) chemical/ fertilizers/ pesticides/ insecticides
- Washing/ bathing/ watering animals in rivers/ lakes
- Disposing of raw sewages into rivers/ lakes
- Surface turnoff/ soil erosion into water depositing silt
- Dumping of solid waste into water courses

ii) State three effects of water pollution on environment. (3mks)

- It may cause death of aquatic life
- It destroys aesthetic/ beauty of beach/ water bodies
- It leads to spread of waterborne diseases
- Causes foul smell
- Results to sutrophictaion/ water hyacinth/ water weeds/ alga

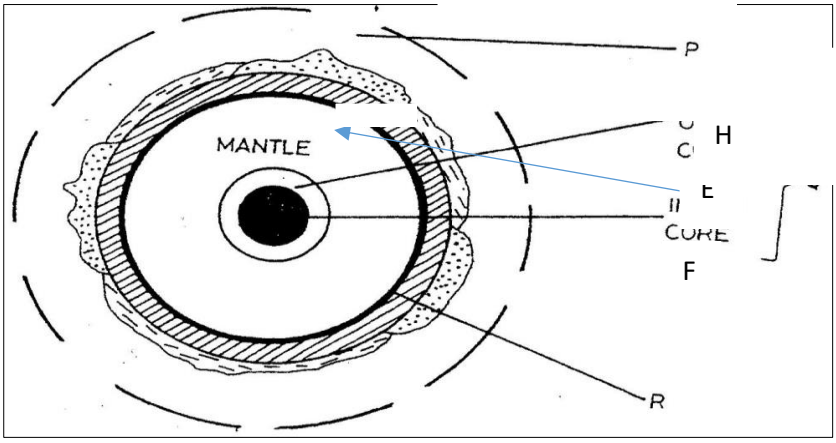
iii) Explain any three ways in which drought and desertification can be controlled.(6mks)

- Planting drought resistant crops
- Establishment of irrigation programs
- Afforestation and reforestation.
- Destocking of livestock to reduce on soil erosion and overgrazing
- Protection of water catchment areas.

KIGUMO CLUSTER
312/2
GEOPGRAPHY PAPER 1

SECTION A
Answer all questions in this section (25 marks)

1) The diagram below represents structure of the earth.
   a) Use it to answer questions that follow.



   i) Name the boundaries marked E and F. (2 marks)
   ii) Identify **two** minerals that make up the layer marked H. (2 marks)
   b) Give **two** effects of the rotation of the earth on its axis. (2 marks)
2) a) Define the term magmatic water (2 marks)
   b) List **three** surface features on Karst landscape (3 marks)
3). a) Define the term vegetation (2 marks)
   b) Explain how the following factors influence the distribution of vegetation
      i) Relief (2 marks)
      ii) Soils (2 marks)
4) State **four** indicator of occurrence of sol creep in an area (4 marks)
5) a) Name **two** types of submerged highland coasts (2 marks)
   b) Identify **two** resultant features of the emerged highland coasts (2 marks).

Section B. Answer question 6 and any other two. 75 marks

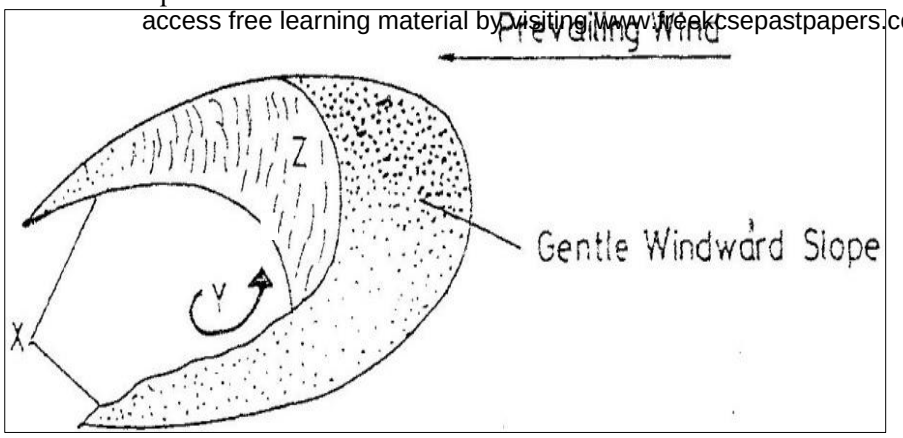
Q.6 Study the map of **Kijabe** provided to answer the questions that follow.
   (a) (i). Identify the tittle of the map provided. (1 mark).
   (ii). Give the latitudinal extent of the map given. (2marks)
   (ii). Identify any **two** methods used to represent relief in the map provided. (2 marks)
   (ii). Identify the feature in grid reference 402003. (1 mark)
   b) (i). Determine the length of all-weather road bound surface from grid reference 2589 to the junction at petrol station in kilometers. (2 marks)
   (ii). Identify **three** natural vegetation in the area covered by the map. (3marks)
   (ii). Describe the drainage of the area covered by the map. (6 marks)
   (c) (i). Explain **three** social activities found in the area covered by the map. (6 marks)
   (ii). Give **two** proofs that suggests lumbering is taking place in the area covered by the map. (2 marks)
7. a) i) Give **three** reasons why weather forecasting is important (3 marks)
   ii) State **three** conditions that lead to fog formation. (3 marks)
   b) Explain how the following factors influence climate.
      i) Aspect (2 marks)
      ii) Altitude (2 marks)
      iii) Distance from the sea. (2 marks)
   c) Using a well labeled diagram, describe the formation of orographic rainfall. (6 marks)

d) i) State **two** advantages of studying weather through fieldwork. (2 marks).
Students from Turuturu Secondary conducted a field study on weather in a weather station.
ii) Formulate a suitable hypothesis they could have used for the study. (2 marks)
iii) State **three** follow-up activities they would carry out after the study. (3 marks

8 a) Identify **three** ways in which ice moves. (3marks)
b) Describe plucking as a process in glacial erosion. (4marks)
c) i) Using a well labeled diagram, describe the formation of a pyramidal peak. (6marks)
ii) Explain **three** factors that lead to glacial deposition. (6marks)
d) You are required to carry out a field study on erosional features in glaciated lowland area
i) Give **three** reasons why you would require a working schedule (3marks)
ii) Give **three** erosional features in the lowland areas they would have identified. (3marks

9. a) i) A part from the Rift Valley name two other relief features that are formed as result of faulting. (2marks)
ii) With the aid of a well labeled diagram, describe how a Rift Valley is formed by tensional forces. (8marks)
b) Explain **four** effects of faulting (8marks)
c) Students are planning to carry out a field study of an area affected by faulting
i) State **four** reasons why it is important for the students to have a pre-visit of the area. (4marks)
ii) One of the ways they would use to collect data is through direct observation. Give three disadvantages of direct observation in the study of such an area. (3marks)

10. a) (i) Name **three** major deserts found in Africa (3 marks)
(ii) Give **two** processes in which wind erodes the earth's surface. (2 marks)
(iii) Explain **three** ways in which wind transports its load. (6 marks).
b) Using well labeled diagrams, explain how the following desert features are formed;
(i) Yardangs. (5 marks)
(ii) Mushroom blocks. (6 marks)
c) The diagram below represents features resulting from wind deposition in a desert
Use it to answer questions that follow.



(i) Name the above feature (1 mark)
(ii) Name parts marked X and Y (2 marks)

KIGUMO CLUSTER
GEOGRAPHY PAPER
312/2
KENYA CERTIFICATE SECONDARY EDUCATION (KCSE)

This paper consists of **two** sections A and B. Answer all questions in section A. In section B, answer question 6 and any other two.

1. a) Name **two** conditions that are necessary for the formation of petroleum. (2 marks)
   b) List **three** ways in which opencast mining affects the environment. (3 marks)
2. a) What is soil conservation 2 marks
   b) State **three** farming methods that assist in soil conservation. (3 marks.)
3. a) Define the term transhumance. (2 marks)
   b). State **three** areas in Temperate world where transhumance is practiced. (3 marks)
4. a) State **five** characteristics of softwood forest in Canada. (5 marks)
5. The table below represents information on population change in Kenya by province between years 2000 and2005.

Province	Population in Millions	
	Years	
	2000	**2005**
Nairobi	2.229	2.751
Central	3.882	4.038
Coast	2.662	2.927
Eastern	4.840	5.120
North- Eastern	1.054	1.438
Nyanza	4.598	4.916
Rift valley	7.386	8.366
Western	5.532	3.885
Total	**30.183**	**33.441**

(a) Which province had the highest change in population between 2000 and 2005? (2marks)
(b) Calculate the percentage increase in population in Kenya between 2000 and 2005. (3marks)

Q.6Anwer question six and any other two.

(a) (i). Identify the type of photograph shown above. (2 marks)
(ii). State **three** physical factors that may have caused the phenomenon shown in the photograph. (3 marks)
(iii). Identify the natural phenomenon taking place in the photograph. (1 marks)

(iv). Name **three** areas in Kenya prone to the disaster shown in the photograph. (3 marks)

b). (i) Draw a rectangle 15 cm by 12cm to represent the photograph above. (2 mark)
(ii). In the sketch, mark and name human being,
(iii) settlements.
(iv) Flooded areas
(v) Ripples.
(vi). clouds (5marks)

c). State **three** methods that can be used to minimize the occurrence of the phenomenon represented by the photograph. (3 marks)

d. (i) Differentiate between land reclamation and land rehabilitation. (2 marks)
(ii). State **two** ways in which each of the following problems experienced in Mwea irrigation scheme can be solved.
- ❖ Low prices of rice. (2 marks)
- ❖ Fluctuating water levels in the irrigation canals. (2 marks)

7. a) What is mining. (2 marks).

b). Explain how the following factors influence occurrence of minerals.
(i) Evaporation. (2 marks)
(ii). Vulcanicity. (2 marks)
(iii). Metamorphism. (2 marks)

(b) (i) Apart from deep shaft mining, name **three** other mining methods. (3marks)
(ii) Describe how shaft mining is carried out. (6marks)

(c) Explain four ways in which mining contributes to the economy of Kenya. (8marks)

8. (a) (i). What is mixed farming. (2 marks)
(ii). Draw a sketch map of Kenya, and on it mark and name **three** areas where coffee is grown. (4 marks).

(b) (i) State **three** physical conditions that favour coffee growing in the areas you have shaded. (3 marks)

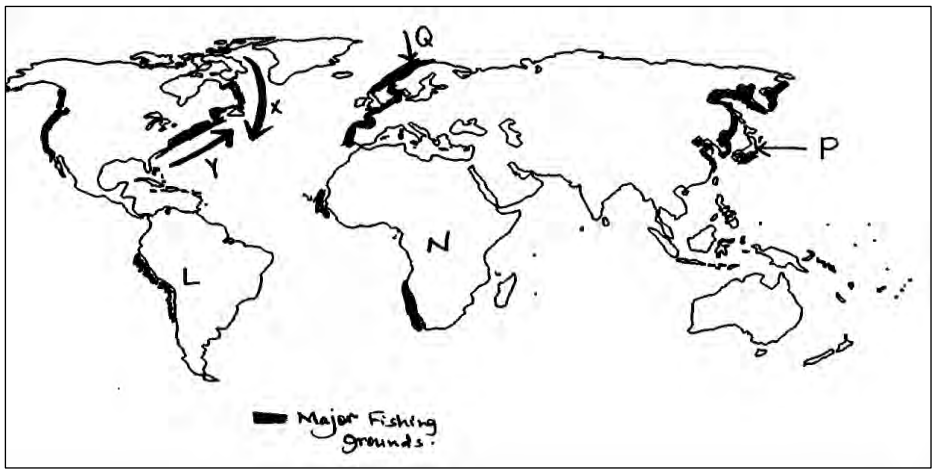
(ii). Name **two** new varieties of coffee grown in Kenya. (2 marks)

(c). Explain **four** ways in which the government of Kenya assist the small-scale coffee farmers.

 (8 marks)

d). Your geography class carried out field study in a coffee farm near the school.
i) State **four** methods the class may have used to collect data. 4 marks
ii) During the field study the class collected data on quantities of coffee produced in the farm in the last five years. State **two** methods the class may have used to present the data**.** (2 marks).

9. (a). Study the map of the world provided to answer the questions that follow. The world maps indicate the major fishing ground.



(i). Name the ocean current marked X and Y. (2marks)
(ii). Name the continents marked L and N. (2 marks)
(iii). Name the Countries marked P and Q. (2 marks)

b). Apart from the ocean currents explain **four** other factors that influence fishing where two current meets.

(8 marks)

c) Explain why in East Africa, fresh water fishing water in the area shaded on the map other than ocean currents. (6marks)

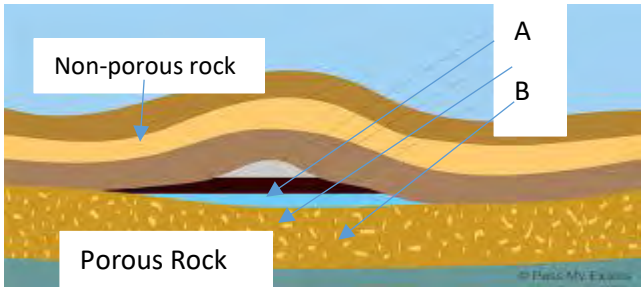
d). (i). State **two** measures taken by Kenya government to conserve fisheries in Kenya. (2 marks)

ii) List **three** methods used to preserve fish. (3marks)

10. (a) (i). What is energy crisis? (2 marks)

(ii) Apart from water, give **two** renewable sources of industrial energy. (2 marks)

The diagram below shows the occurrence of petroleum in the earths' crust Use it to answer question (a iii).



(iii). Name the substances labelled A, B, C. (3 marks)

(b) Explain **four** benefits emanating. from rural electrification in Kenya. (8 marks)

(c) (ii) Explain **three** effects that the increase in oil prices had on the economies of oil – importing countries of Africa. (6 marks)

(ii). State **four** ways in which Kenya can reduce the use of petroleum as a source of energy. (4 marks)

KIGUMO CLUSTER

GEOGRAPHY PAPER 312/1

MARKING SCHEME PAPER ONE

1. The diagram below represents structure of the earth. Use it to answer questions that follow.

a) Diagram on the boundaries marked E and F.

i) E – Gutenberg discontinuity (1 mark)

F – Mohorovicin discontinuity (1 mark)

ii) Identify minerals that make up the layer marked H (2 marks)

– Iron and Nickel

b) Give two effects of the rotation of the earth on its axis (2 mark)

– Causes day and night
– A difference of 1 hour between meridian 15 degrees apart.
– Causes deflection of winds and ocean currents
– Variation of speed of air masses
– Causes of rising and falling of ocean tides.

2. a) Magnetic water – Plutonic water that gets trapped in the rocks underground

b) Examples of surface features

– Grikes/grykes
– Clints
– Dolines
– Uvala
– Polge
– Swallow hole

3. a) Define vegetation. (2 marks)

– It is the total mass of plant life that occupies a given area.

b) Explain how the following factors influence the distribution of vegetation
i) Relief (2 marks)

– high altitude areas have low temperature which encourages scanty/no vegetation / low altitude areas have moderate temperature which encourage dense vegetation.
– Gently sloping areas are well drained hence encouraging dense vegetation growth/steep slopes experience excessive drainage that discourages plant growth/ hence scanty vegetation.
1 x 2 = 2 marks

ii) Soils

– Fertile soils have a variety of nutrients which encourage the growth of dense vegetation / infertile soils have insufficient nutrients leading to scanty vegetation.
– Medium textured soils are well drained thus support a variety of plants / dense vegetation. Coarse / fine textured soils are poorly drained leading to scanty / no vegetation.
– Deep soils enable the penetration of long roots thereby supporting trees (forests) / thin soils support vegetation with shallow roots thereby supporting grass vegetation.
(1 x 2 = 2 marks)

4. State **Four** indicator of occurrence of soil creep in an area (4 marks)

– Telephone/fence poles that are inclined down a slope/bent tree trunk
– Accumulated soil at the foot of a slope/behind obstacles such as walls/ on roads/ railways.
– Existence of ribbed /stepped pattern across the slope
– Presence of dipped rock strata in the direction of the slope
– Presence of overhanging banks above roads/rivers. 4 x 1 = 4 marks

5. a) Name **two** types of submerged highland coasts.

– Longitudinal/Dalmatian
– Ria
– Fiord/fjord

b) Identify **two** resultant features of the emerged highlands coast

– Raised geo/blow hole

– Raised cliffs
– Raised wave-cut platforms
– Raised beaches
– Raised caves
– Raised notches
– Raised arch/Raised stack/stump

Section B. Map work Question.

6 (a) (i). Identify the tittle of the map provided. (1 mark).

– Kijabe

(ii). Give the latitudinal extent of the map given. (2marks)

– $0^0 53'$ to $1^0 00'$ S

(ii). Identify any **three** methods used to represent relief in the map provided. (2 marks)

– Contours
– Trigonometrical Stations

(iii). Identify the feature in grid reference 402003. (1 mark)

– River confluence.

b) (i). Determine the length of all-weather road bound surface from grid reference 2589 to the junction at petrol station in kilometers. (2 marks)

– 6.7 ± 0.1 Km

(ii). Identify **three** natural vegetation in the area covered by the map. (3marks)

– Forest
– Scrub
– Scattered Trees
– Thicket
– Woodlands. 3 x 1 = 3 marks

(ii). Describe the drainage of the area covered by the map. (6 marks)

- The main drainage features are rivers.
- The main river is Ewaso Kendong.
- Most rivers in the area covered by the map are permanent as indicated by continuous blue lines.
- The main rivers are joined by many tributaries.
- There are many rivers in the area covered by the map.
- Most rivers are joined by their tributaries at an acute angle forming the dendritic patterns.
- Rivers flowing from Kijabe hill form radial drainage patten.
- Some rivers in the are covered by the map are disappearing eg at grid square 2796.

Mark the first 6 x 1 = 6 marks.

(c) (i). Explain **three** social activities found in the area covered by the map. (6 marks)

- Education: The presence of many school eg Kinare sch.
- Health Services. There are several dispensaries eg Kinale /Kijabe Hospital.
- Religious Services. Presence of several churches eg. Grid square 3890.
- Security services. Presence of police station at 3098.
- Recreation services. The presence of Rest House at Grid 3498.
- Administration. Evidenced by Location centers/Police post. 3 x 2 = 6 marks

(ii). Give **two** proofs that suggests lumbering is taking place in the area covered by the map. (2 marks)

- Saw- Mill.at grid 4399.
- Dry weather road passing through the forest. 2 x 1 = 2 marks.

7 a) i) Give **three** reasons why weather forecasting is important.

- Help farmers plan their activities
- Help people to choose clothing for the day
- Influence designing of the houses and guide in landing of aircrafts.
- Help in planning military activities
- Guides fishing activities

Any 3 points 3 x 1 = 3 marks

ii) State three conditions that lead to fog formation. (3 marks)

- Air must have sufficient moisture
- Clear sky / absence of clouds to allow free terrestrial radiation
- Air must be cooled below dew point
- Wind must be light /calm conditions to help hold water droplets in suspension

Any 3 points 3 mks

b) Explain how the following factors influence climate.

(i) Aspect

- In the Northern Hemisphere of temperate regions North facing sloper are cooler as they do not receive direct sunshine. Southern facing slopes are warmer because they receive direct sunlight.
- In the southern Hemisphere of the temperate region, North facing slopes are warmer while south facing slopes are cooler.
- Windward slopes receive higher rainfall as they trap moist prevailing winds which raise through orographic effect. leeward sides have little or no rainfall due to rain shadow effect. Any 2 points

2 x 1 =2 marks

(ii). Altitude

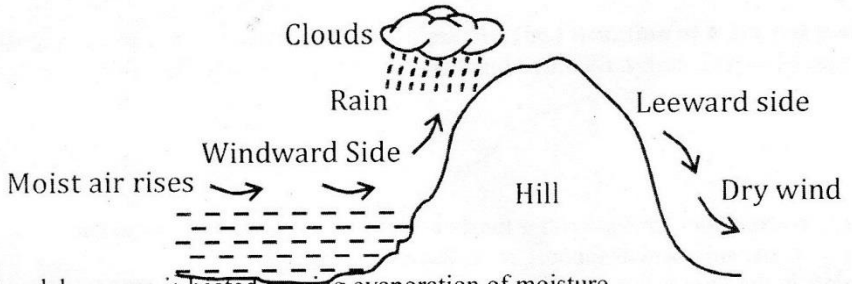
- Temperature decrease with the increase in Height / Altitude as 1 at a loss of 6.5^{o}C for a rise of 1000 M ASL.
- Lower altitudes have a longer column of air that vetains a lot of heat .
- Higher altitudes have a shorter column of air leading to cooling which lower temp.
- Temperature is higher at lower altitudes than at high altitude since air is heated from below and not directly from the sun.

Any 2 points 2 x 1 = 2 marks

(iii). Distance from the sea

- Relative humidity in places near the sea is higher than places far away in the continent.
- The amount of rainfall received in places near large water bodies is relatively higher than in places far away.
- Air pressure is relatively higher near large water bodies than in places far away.
- Near large water bodies temperatures are relatively warmer than in areas towards the continents.

(c). Using a well labeled diagram describe the formation of orographic reainfall. (6 marks)



- Water in a lake /sea is heated causing evaporation of moisture formation.
- Most air is forced to move horizontally by wind.
- As the air rises, it expands, cools and condenses to form clouds.
- The clouds then form relief rainfall.
- The rainfall is mainly experienced on the wind wards.
- The cool air then crosses over the hill and descends on the leeward side as dry wind.
- There is little or no rainfall on the leeward side.

Mark- diagram 3 mark - Description 3 marks (Total 6 marks).

d) i) State three advantages of studying weather through field work. (3 marks)

- Enable learners to collect firsthand information
- Help learners develop manipulative skills
- Enable students apply knowledge learnt in classroom in real life situation
- Makes learning interesting.
- Provides detailed or in depth or broadened learning.
- Enhances visual memory.
- Breaks classroom monotony and boredoms. 3 x 1 = 3 marks

ii) Students from Turuturu Secondary conducted a field study on weather in a weather station. Formulate a suitable hypothesis they could have used for the study. (2 marks)

- The area of study receives high rainfall.
- The area of study has cool temperatures.
- The area of study experiences convectional rainfall.
- The station has many weather recording instruments.

Mark any other relevant statement. 2 x1 = 2 marks

iii) State any three fall-up activities they would carry out after the study. (3 marks).

- Discussing the findings
- Analyzing data
- Writing a report
- Giving relevant advice to the state/residents
- Drawing sketches
- Displaying photographs / sketches Any 3 x 3= (3 marks)

8. a) Identify **three** ways in which ice moves

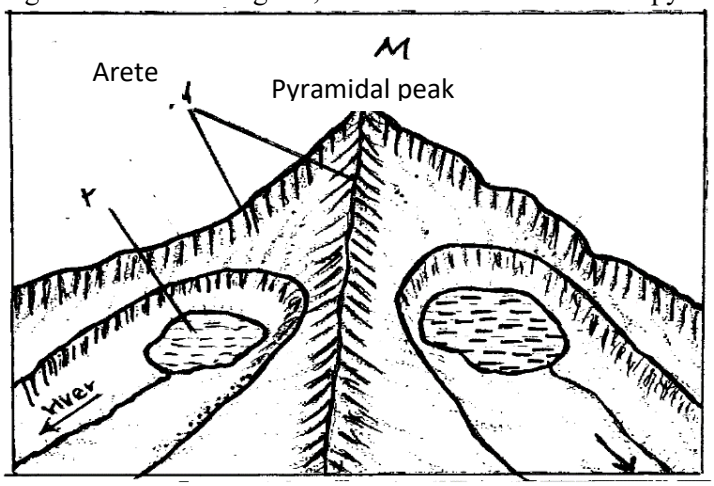
- Plastic flowage
- Basal slip
- Extrusion flow
- Internal shearing

b) Describe plucking as a process in glacial erosion (4marks)

- Pressure from the overlying mass of ice cause freeze and thaw action
- Melting water fills cracks / joints in the bed rock
- As the water freezes it exerts pressure on the cracks enlarging them
- The enlarged cracks led to disintegration of the rock
- the disintegrated rocks eventually get embedded within the mass of ice.

4 x 1= 4 marks

c) i) Using a well labeled diagram, describe the formation of a pyramidal peak. (6marks)



- Ice accumulates in several shallow pre-existing depressions on the mountain sides.
- As the ice moves it plucks the rocks steepening the sides of the hollows / depressions.
- Continued erosion by abrasion deepens and widens the hollows.
- Adjacent hollows continue to be eroded causing the cirques backwall to erode until they are separated by narrow steep ridges called aretes.
- Where aretes converge at the top of the mountain they form a sharp steep sided peak known as the pyramidal peak.

Mark Text 4 marks
Diagram 2
Total 6 marks.

C ii). Explain three factors that lead to glacial deposition. (6 marks)

- rising temperature lead to melting of ice thereby causing the ice to deposit its loads.
- change of gradient to relatively flat surface will reduce the velocity of the glacial.

- movement which will subsequently lead to deposition of glacial materials.
- alternating warm and cold periods lead to seasonal melting of ice which allows materials embedded in the ice to be released and deposited.
- Stagnation/accumulation of glacier leads to pressure at the base of the glacier which in turn leads to melting of ice at the base.
- The melt water then carries and deposits materials underneath which loosens the heavy materials beneath the mass of ice and subsequently deposited.

Condition 1 mark
Explanation 1 mark (any 3 x 2 = 6 marks)

d) You are required to carry out a field study on erosional features in glaciated lowland area

i) Give **three** reasons why you would require a working schedule (3marks)

- It enables the planned activities to be carried out systematically.
- It allows for proper use of available time.
- It enables the assessment of the progress of the fieldwork.
- It enables the estimation of total time required for the study.
- It confines the researcher to the scope of the topic.
- It ensures all areas are adequately covered. Any 2 x l = (2 marks)

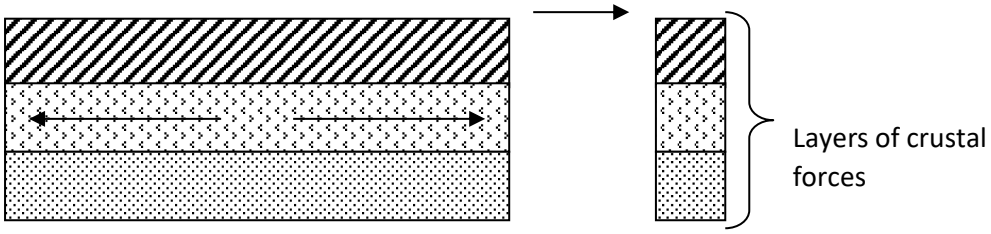
ii) Give **three** erosional features in the lowland areas they would have identified.(3marks

- Ice eroded plains.
- Depressions
- Roche Mountonee.
- Crag and tail

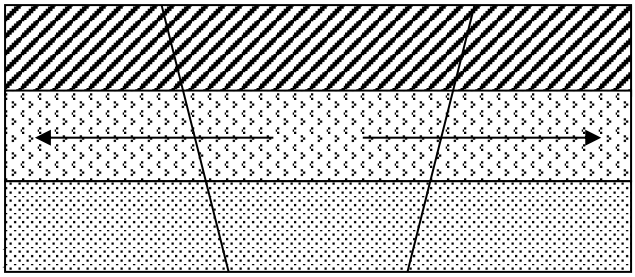
9. a) i) A part from the Rift Valley name two other relief features that are formed as result of faulting

- Tilt block
- Escarpment/scrap slope
- Block mountain/ horsts Any 2x1=2marks

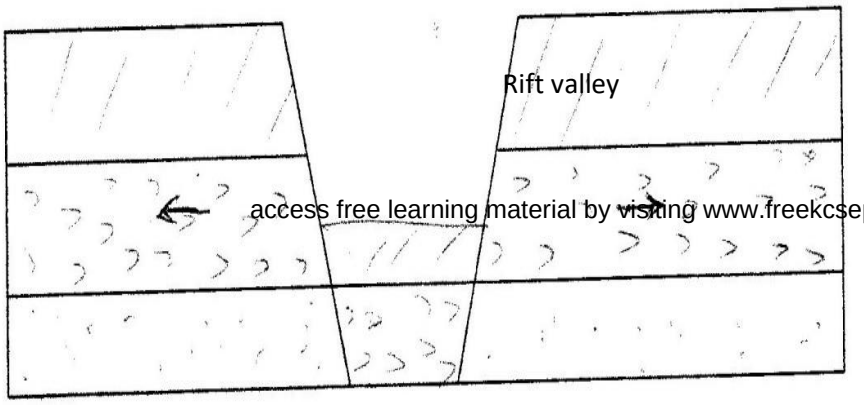
ii) With the aid of a well labeled diagram, describe how a Rift Valley is formed by tensional forces. 8 marks



- Layers of rocks are subjected to tensional forces when there is some tensional forces when there is some instability within the earth's crust.
- Parallel normal faults develop/lines of weakness develop.



The middle



The sunken middle part forms a depression known as the Rift Valley

b) Explain **four** effects of faulting (8marks)

- Faulting / fault scraps make it difficult to construct roads/ railways.
- Depression in the Rift valley contain water that forms lakes
- Faulting exposes minerals such as diatomite.
- Step faulting makes rivers to have waterfalls, rapids and cataracts
- The scrap slopes / steep slopes tend to discourage settlement.
- Some rivers such as the Katonga in Uganda have had their directions of flow changed.

(Any 4 x 2 = 8 marks)

c) Students are planning to carry out a field study of an area affected by faulting

i) State **four** reasons why it is important for the students to have a pre-visit of the area. (4marks)

- To enable them draw up study objectives / hypothesis
- To enable them draw a route map.
- To enable them prepare a work schedule / plan of activities
- To enable them identify / sort our relevant tools / equipment for the study
- To identify suitable methods of data collection.
- To seek permission from the occupants of their site of study.
- To enable them prepare financial (Any 4x1 = 4mks)

d) One of the ways they would use to collect data is through direct observation. Give three disadvantages of direct observation in the study of such an area. (3marks)

- It is expensive
- It is time consuming
- It is tiresome
- It is limited only to direct sources / primary sources
- It is only suitable to the signed people (Any 3x1 =3 marks)

10 a) i) Name three major deserts found in Africa. (3 marks)

- sahara
- Kalahari
- Namib 3 x 1= 3 marks

ii) Give two processes in which wind erodes the earth's surface. (2 marks).

- abrasion
- deflation
- attrition 2 x 1 = 2 marks.

iii) Explain three ways in which wind transports its load. (6marks)

- Saltation – This is where course granted sand particles are transported through a series of short jumps bouncing along the earth's surface.
- Suspension - very fine materials are picked by wind raised high and blown for long distance.
- Surface creep - heavy materials are rolled pushed for short distances along the earth's surface.

3 x 2 = 6 marks

b) Using well labeled diagram explain how the following desert feature are formed.

(i). yarding 5 marks

- Prevailing wind blow across the land where there are alternating vertical bands of resistant rocks.
- The rock layers lie parallel to direction of prevailing wind.
- Soft rocks are eroded by wind through abrasion to form depression, furrows while hard bands or rocks form ridges.
- The ridges form features called yardings.

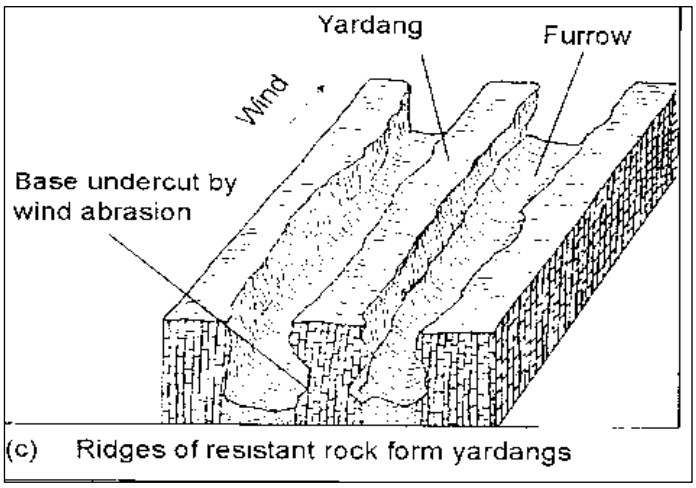


Diagram 2 Text 3 total 5 marks

(ii). Mushroom Blocks 6 marks

- it is formed where there is a homogeneous rock outcrop along the direction of prevailing winds.
- The base of the rock is eroded more by wind abrasion
- The top part is polished and smoothened through abrasion to form a massive rock with a broad rounded top called a mushroom block.

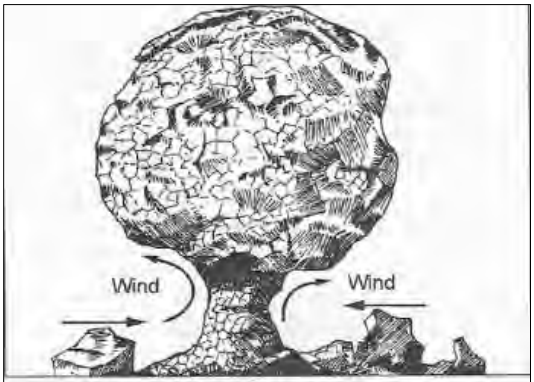


Figure 6.3: *A mushroom block*

Diagram 3

Text 3 Total 6marks

c) The diagram below represents features resulting from wind deposition in a desert.
Use it to answer the questions that follow.

i) Barchan 1 mark

ii) J – Horns

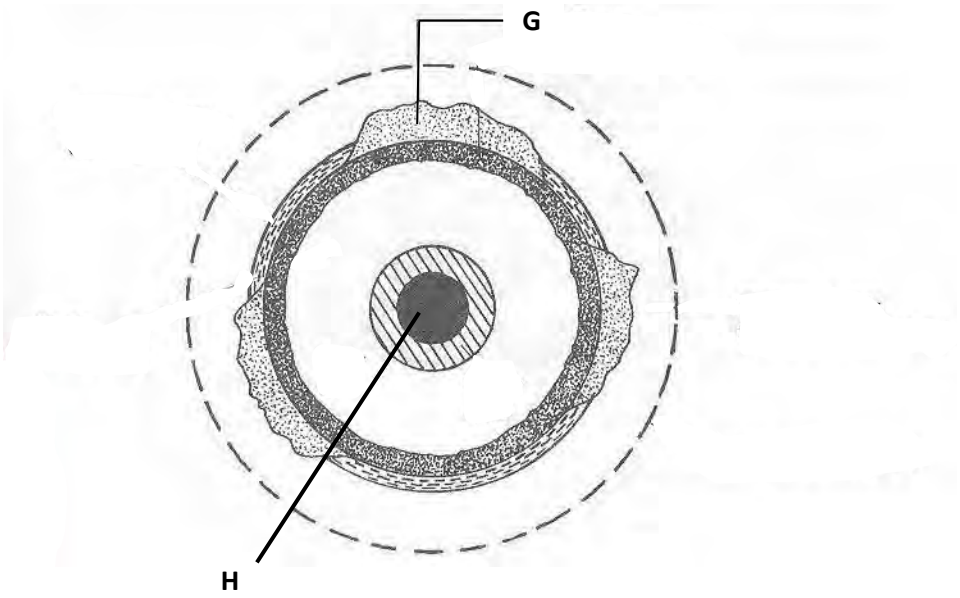
L- Steep slope 2 marks

LANG'ATA/ KIBRA CLUSTER
312/1
GEOGRAPHY Paper 1
DECEMBER 2021

SECTION A

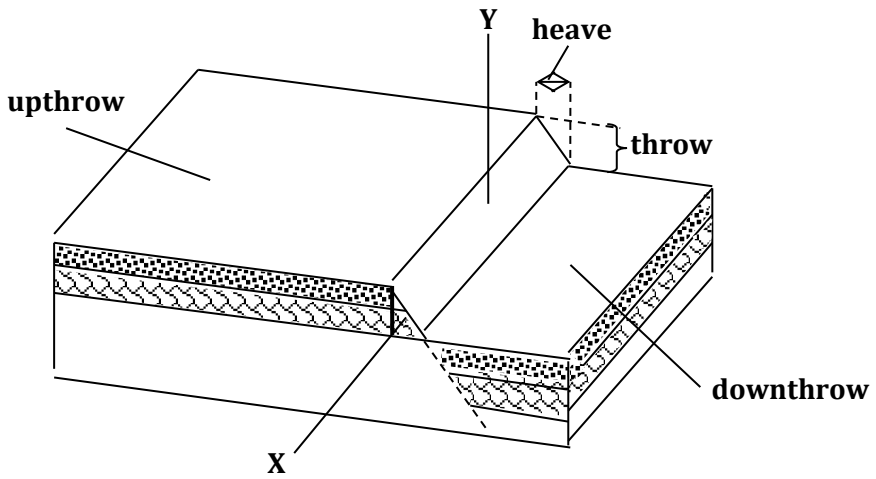
*Answer **all** the questions in this section.*

1. The diagram below shows the internal structure of the earth.



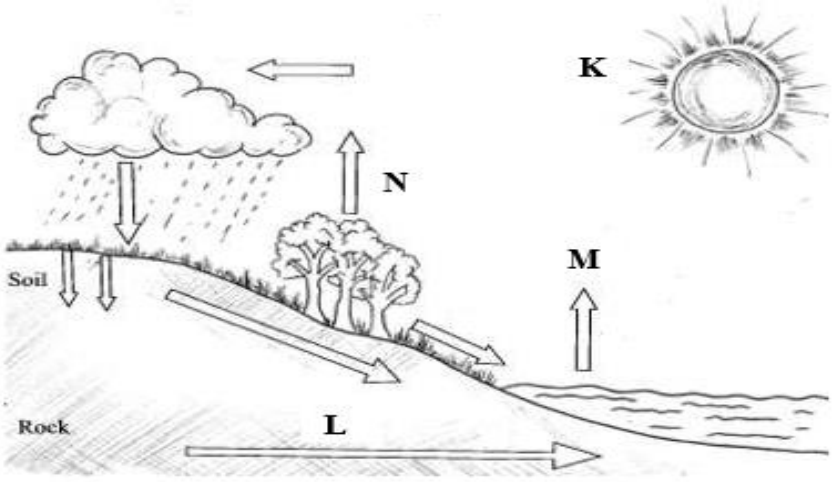
(a) Name the parts marked **G** and **H**. (2 marks)
(b) Name the dominant mineral in the mantle. (1 mark)

2. (a) Differentiate between absolute and relative humidity. (2 marks)
(b) State the significance of humidity in the atmosphere. (3 marks)
3. The diagram below shows some features formed by faulting. (2 marks)



(a) Name the parts marked **X** and **Y**. (2 marks)
(b) State ***three*** effects of faulting on drainage of an area. (3 marks)
4. (a) Name ***two*** crater lakes in Kenya (2 marks)
(b) State ***three*** characteristics of rift valley lakes (3 marks)
5. (a) Differentiate between a watershed and a catchment area? (2 marks)

(b) The diagram below shows a hydrological cycle.



(b) What processes do the arrows labelled **K, L** and **N** represent? (3 marks)

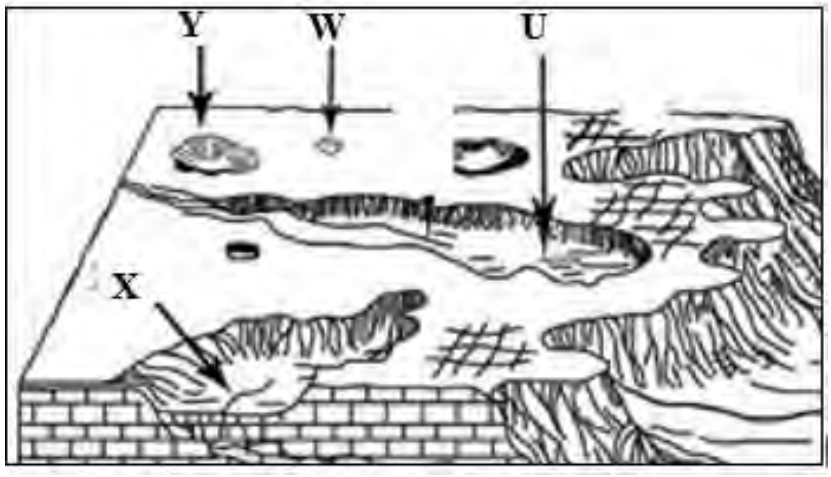
SECTION B

Answer question 6 and any other TWO questions from this section.

6. Study the map of Kijabe 1:50,000 (sheet 134/3) provided and answer the following questions.
   (a) (i) What type of map is KIJABE map extract? (1 marks)
   (ii) Give the six-figure grid reference of the cattle dip near Kenton. (2 marks)
   (iii) Give the longitudinal extent of the area covered by the map . (2 marks)
   (b) (i) Calculate the area to the south of the power line. Give your answer in square kilometers. (2 marks)
   (ii) Describe settlement distribution in the area covered by the map. (6 marks)
   (c) Explain ***three*** factors favoring cattle rearing in the area covered by the map. (6 marks)

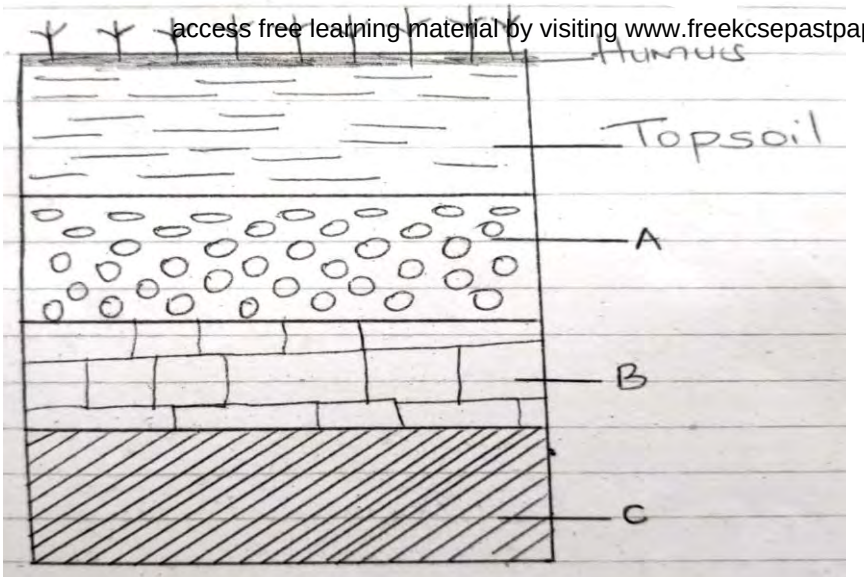
   (d) (i) Draw a square 10cm by 10 cm to represent the area enclosed by Eastings 30 and 40 and northings 90 and 00. (1 marks)
   (ii) On it mark and label: (3 marks)
   – A railway line.
   – Bamboo forest.
   – A borehole.
   (iii) What is the new scale of the square. (2marks)
7. (a) (i) Distinguish between minerals and rocks. (2 marks)
   (ii) State ***three*** characteristics of minerals. (3 marks)
   (iii) Name ***three*** types of minerals. (3 marks)
   (b) (i) Describe how intrusive igneous rocks are formed. (5 marks)
   (ii) State ***three*** characteristics of intrusive igneous rocks. (3 marks)
   (c) (i) What is rock metamorphism? (2 marks)
   (ii) State ***three*** factors that influence rock metamorphism. (3 marks)
   (d) Explain ***two*** economic benefits of coral limestone rocks. (4 marks)
8. (a) (i) Differentiate between orogenic and epeirogenic earth movements (2 marks)
   (ii) Describe the origin of continents according to the theory of plate tectonics. (4 marks)
   (b) (i) Apart from an overthrust fold, name *three* other types of folds. (3 marks)
   (ii) Using well labelled diagrams, describe how fold mountains are formed. (10 marks)
   (c) Explain ***three*** negative effects of folding to human activities. (6 marks)

9. The diagram below shows a karst scenery. Study and use it to answer the question that follow.



(a). (i) Identify the features labeled **W** and **Y**. (2 marks)
(ii) State ***four*** conditions necessary for the formation of a karst landscape. (4 marks)
(iii) Describe the formation of a stalagmite. (5 marks)
(b). (i) Name ***two*** water erosional features on a desert landscape. (2 marks)
(ii) Describe the formation of Zeugens. (4 marks)
(iii) Explain ***four*** significance of desert landforms to human activities. (8 marks)

10. (a) Define soils (2 marks)
(b) Explain how the following factors influence soil formation;
(i) Parent material (4 marks)
(ii) Human activities (2 marks)
(c) The diagram below shows a soil profile. Use it to answer question (i) and (ii).



(i) Name the parts marked **X** and **Y**. (2 marks)
(ii) Describe the characteristics of the top soil (4 marks)
(d) (i) Explain ***three*** causes of physical soil degeneration. (6 marks)
(ii) State ***five*** ways of conserving soils (3 marks)

LANG'ATA/ KIBRA CLUSTER
312/2
GEOGRAPHY PAPER 2
DECEMBER 2021

SECTION A
*Answer **all** the questions in this section.*

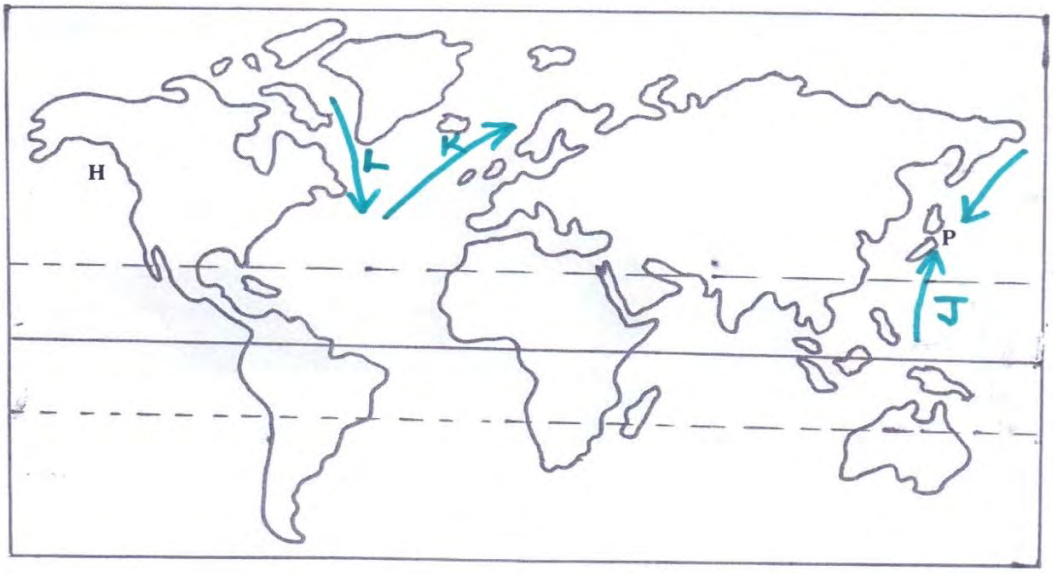
1. (a) What is practical Geography? (2 marks)
   (b) State ***three*** practical aspect we study in Geography. (3 marks)
2. (a) Apart from marine parks, give ***two*** other tourist attractions at the Kenyan coast. (2 marks)
   (b) State ***three*** reasons why national parks have been established in Kenya. (3 marks)
3. (a) Name ***two*** towns in Kenya where motor vehicle assembly plants are found. (2 marks)
   (b) State ***three*** ways in which Kenya has benefited from assembling of motor vehicles locally. (3 marks)
4. (a) Identify ***two*** indigenous beef cattle breeds raised in Kenya. (2 marks)
   (b) Give ***three*** factors which favour beef farming in the Nyika plateau. (3 marks)
5. (a) Differentiate between exports and imports. (2 marks)
   (b) State ***three*** factors which influence external trade in Kenya. (3 marks)

SECTION B
*Answer question **6** and any other **TWO** questions from this section.*

6. Study the photograph below and use it to answer question (a).

(a) (i) What evidence in the photograph shows that this is a ground general view type of photograph? (2 marks)
   (ii) Name the type of pollution shown on the photograph. (1 mark)
   (iii) Draw a rectangle measuring 15cm by 10cm to represent the area on the photograph. On it, sketch and label the main features shown on the photograph. (5 marks)
   (iv) State ***three*** causes of this type of pollution. (3 marks)
   (v) Explain ***three*** measures that may be taken to combat this type of pollution. (6 marks)
(b) (i) Name ***two*** rivers in Kenya to the west of the rift valley which cause large scale flooding. (2 marks)
   (ii) Explain factors that lead to frequent flooding in the lake region of Kenya. (6 marks)

7. (a) (i) Define the term fisheries. (2 marks)
(ii) Name ***two*** types of inland fisheries in East Africa. (2 marks)
(iii) State ***four*** measures that the government of Kenya has taken to conserve fisheries. (4 marks)
(b) Describe how basket fishing method is used to catch fish. (6 marks)
(c) The following map shows the world distribution of the major fishing grounds. Study and use it to answer the questions that follow.



(i) Name ***two*** types of fish species found in the fishing ground marked **P**. (2 marks)
(ii) Identify the ocean currents labelled **J, K** and **L**. (3 marks)
(iii) Explain ***three*** physical factors that favour large scale fishing in the fishing ground marked **H**. (6 marks)

8. (a) (i) Identify the type of energy from the following sources of energy.
- Tides (1 mark)
- Uranium (1 mark)

(ii) What is Geothermal energy? (2 marks)
(iii) State ***three*** factors that hinder expansion of geothermal production in Kenya. (3 marks)
(b) Explain ***three*** problems that face the use of firewood as a source of energy in Kenya. (6 marks)
(c) (i) State ***four*** physical factors that favoured the location of the Owen Falls Hydro-electric Power project in Uganda. (4 marks)
(ii) Explain ***two*** problems the government of Kenya faces in her effort to develop H. E. P stations. (4 marks)
(d) Form Four students carried out a field study in Kamburu H.E.P plant.
(i) State ***two*** objectives for their study. (2 marks)
(ii) Give ***two*** reasons why they needed a working schedule. (2 marks)
9. (a) Differentiate between transport and communication? (2 marks)
(b) Explain how the following factors influence development of transport in Kenya.
(i) Government policy (2 marks)
(ii) Relief (2 marks)
(c) (i) Identify ***three*** conditions of roads in Kenya that cause occurrence of accidents. (3 marks)
(ii) State ***three*** measures taken by the government of Kenya to reduce road accidents. (3 marks)
(d) (i) Name ***two*** major railway lines in East Africa. (2 marks)
(ii) State ***three*** reasons why road transport is more developed than railway transport in East Africa. (3 marks)

(e) Study the map of the great lakes and the St, Lawrence Sea way provided and use it to answer the questions that follow.

(i) Name the port mark **P** and the canal marked **Q**. (2 marks)
(ii) Explain ***three*** ways in which the sea route has contributed to industrial growth in the region. (6 marks)

10. (a) (i) What is population? (2 marks)
(ii) Give ***three*** reasons why it is important for the government to conduct a population census. (3 marks)

(b) Explain how the following physical factors has influenced population distribution in Kenya.
(i) Climate (2 marks)
(ii) Pests and diseases. (2 marks)

(c) (i) Define the term fertility (2 marks)
(ii) Give ***four*** factors that influence fertility. (4 marks)
(iii) State ***four*** causes of intra-urban migration. (4 marks)

(d) Explain ***three*** problems that result from high population growth rate in Kenya. (6 marks)

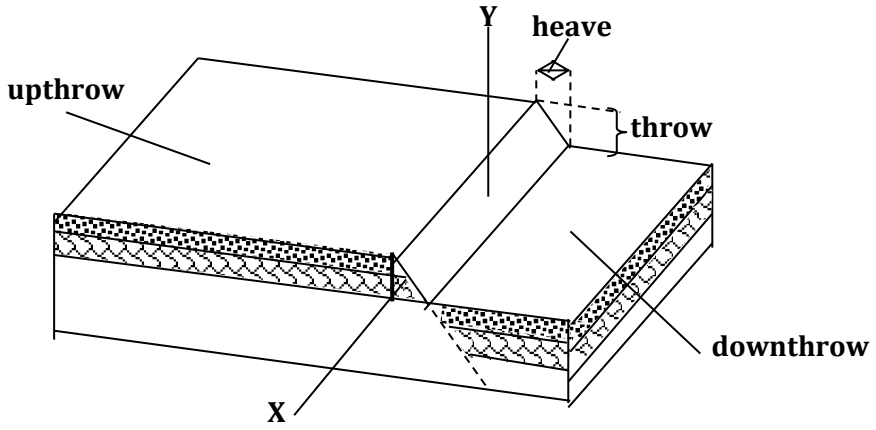
LANG'ATA/ KIBRA CLUSTER
312/1
GEOGRAPHY Paper 1

SECTION A

1. (a) The diagram below shows the internal structure of the earth.
(i) Name the parts marked G and H. (2 marks)
G - Continental crust/sial
H - Inner core
(ii) Name the dominant mineral in the mantle. (1 mark)
– Olivine/ ferromagnesian silicate

2. (a) Differentiate between absolute and relative humidity. (2 marks)
– Absolute humidity is the actual amount of water vapour or moisture in a given mass of air at a particular temperature while relative humidity is the ratio of the absolute humidity of a given mass of air to the maximum amount of moisture that this mass of air could hold at the same temperature.
(b) State the significance of humidity in the atmosphere. (3 marks)
– The amount of water vapour in a given volume of air indicates the atmospheres potential capacity to hold moisture:
– It determines the amount of precipitation that a given area is likely to receive.
– Water vapour is important in absorbing radiation hence regulates the heat loss from the earth.
– The amount of water vapour determines the amount of energy stored in the atmosphere for the development of storms

3. The diagram below shows some features formed by faulting. (2 marks)



(a) Name the parts marked X and Y. (2 marks)

X - Hade
Y - Fault scarp/escarpment/scarp face.

(b) State three effects of faulting on drainage of an area. (3 marks)

- Down warping due to faulting may lead to formation of depressions which may be filled by water to form lakes.
- Fault lines due to fracturing of crustal rocks may change the course of river making the river to start flowing a long the fault line forming faulting - guided drainage pattern.
- Fault scarps forming across rivers course may lead to formation of waterfalls.
- Faulting may lead to formation of lines of weakness in earth's crust which becomes passages for hot water from the underground to the earth's surface to form hot springs and geysers.

4. (a) Name two crater lakes in Kenya (2 marks)

- Lake Challa
- Lake Paradise
- Lake Sonanchi
- Lake Simbi Nyaima
- Crater lake on the central island in lake Turkana

(b) State three characteristics of rift valley lakes (3 marks)

- Most are narrow,
- Most of them are long,
- Most are steep sides,
- Most of them are saline,
- Some are freshwater

5. (a) Differentiate between a watershed and a catchment area. (2 marks)

A watershed is a ridge line boundary separating drainage basins or rivers systems while a catchment area is a wetland which a river draws its waters from.

(b) What processes do the arrows labelled K, L and N represent? (3 marks)

K - Radiation/insolation/sun's rays
L – Percolation
N – Evapotranspiration

6. (a) (i) What type of map is KIJABE map extract? (1 marks)

- A topographical map.

(ii) Give the six figure grid reference of the cattle dip near Kenton. (2 marks)

- 279014

(iii) Give the longitudinal extent of the map. (2 marks)

- From $36^0$30'E to $36^0$45'E

(b) (i) Calculate the area to the south of the power line. Give your answer in km^2. (2 marks)

Full squares: 16
Half squares: 28
Total: 16+14= 30km^2 (+- 0.5km^2)

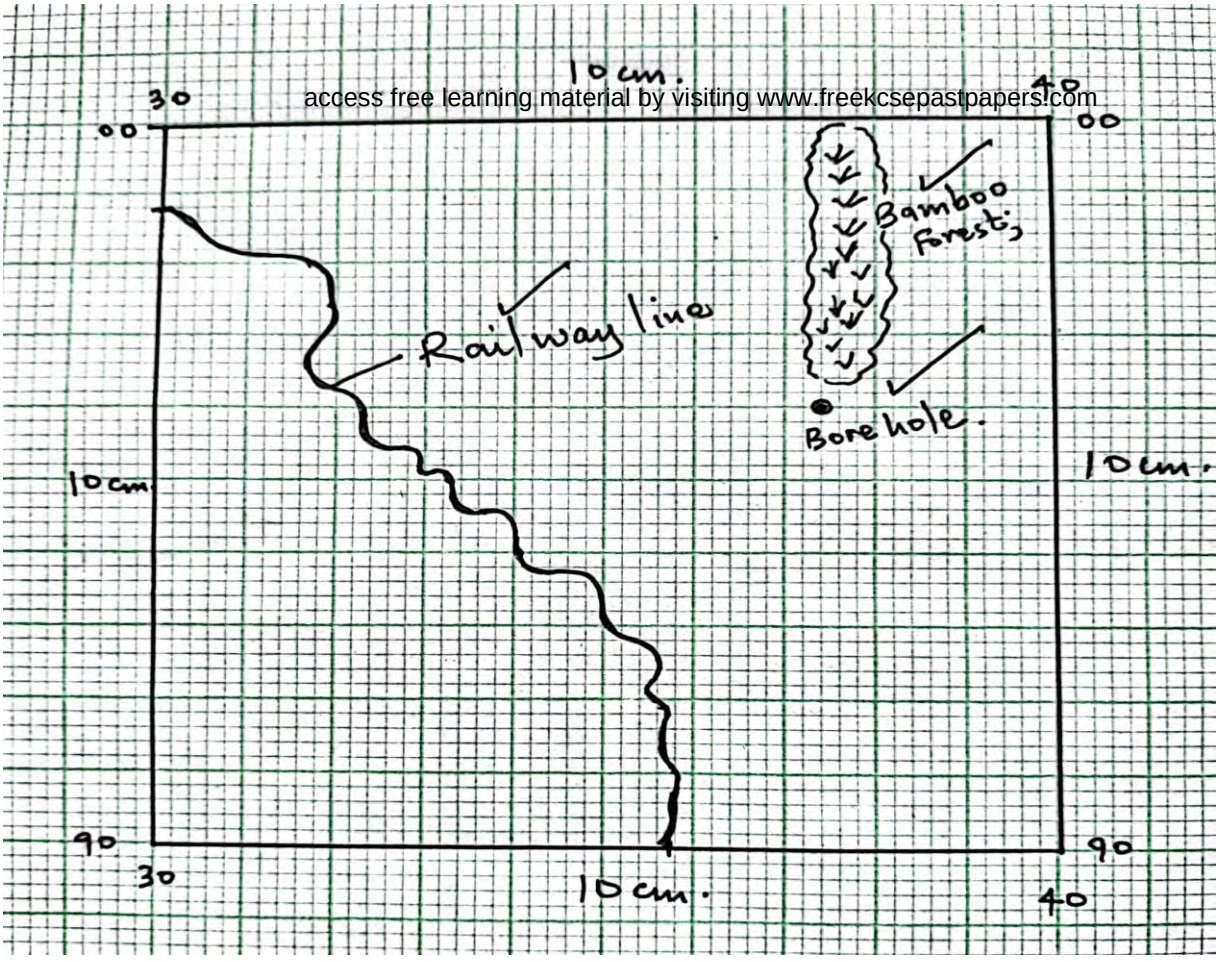
(ii) Describe settlement distribution in the area covered by the map. (5 marks)

- There are no settlement within the Ewaso Kedong valley
- There are nucleated settlement in the markets/shopping centres/villages
- Some areas with steep slopes /ridges /river valleys have fewer /no settlement
- There are fewer settlement within the forest
- Kinale/Kinari forest station has dense settlement
- There are no settlement within the plantations
- There are few settlements to the west of Naivasha-Narok road
- The area covered by the map is generally sparsely settled
- There are linear settlement along some roads in the area covered by the map

(c) Explain three factors favoring cattle rearing in the area covered by the map. (6 marks)

- The presence of scrub and scattered trees show that there is natural pasture for cattle
- The presence of many rivers/sources of water show that there is adequate water for cattle
- The area has high altitude/above 1000m which provide cool conditions suitable for cattle rearing
- The many cattle dips for treatment show that there is access to veterinary services
- There are large tracts of land with few settlements ensuring extensive areas available for grazing
- Availability of transport as shown by roads/railway for movement of cattle/cattle products
- Dense settlement to provide market for cattle/cattle product

(d) (i) Draw a square 10cm by 10 cm to represent the area enclosed by Eastings 30 and 40 and northings 90 and 00. (2 marks)



(5 marks)

- A railway line.
- A bamboo forest.
- A borehole.
- New scale.

(Reduction 2 marks, features 3 marks, new scale 2 marks).

7. (a)

(i) Distinguish between minerals and rocks. (2 marks)

Minerals are inorganic homogeneous substances occurring naturally at or below the earth's surface while rocks are naturally occurring substances that are aggregates of mineral particles.

(ii) State three characteristics of minerals. (3 marks)

- Minerals have different degree of hardness
- Minerals have a varying number of elements
- Some minerals have atoms arranged in an orderly manner to form crystals.
- Minerals have different abilities to allow light to pass through
- Minerals have specific colours
- Minerals have different textures
- Minerals differ in streak
- Minerals have different densities.

(iii) Name three types of minerals. (3 marks)

- Metallic minerals
- Non-metallic minerals
- Energy minerals

(b) (i) Describe how intrusive igneous rocks are formed (5 marks)

- Earth movements form cracks, fissures or vents in the rocks of the crust
- Due to heat and pressure magma in the earth's interior is forced through the cracks and vents into the rocks of the crust
- The magma is trapped or intruded inside the rocks of the crust.
- Magma cools and solidifies slowly forming rocks with large crystals hence referred to as coarse grained.
- Some are formed deep in the earth's crust are called plutonic rocks

- Others are formed near the earth's surface and are called hypabyssal rocks.

(ii) State three characteristics of intrusive igneous rocks. (3 marks)

- Are hard and highly resistant to erosion
- Coarse texture/have large crystals
- Some are formed deep in the crust while others are formed in shallow depths of the crust.

(c) (i) What is rock metamorphism? (2 marks)

- A process where existing rocks undergo physical and chemical changes to form new rocks due to heat and pressure.

(ii) State three factors that influence rock metamorphism . (3 marks)

- Rock resistance/hardness
- Rock texture and structure /grain size
- Rock porosity
- Solubility of rock minerals
- Chemical properties of rock minerals
- Stability of new minerals produced.

(d) Explain two economic benefits of coral limestone rocks. (4 marks)

- It is raw material for cement manufacture which promotes industrial development.
- Some coral rocks form attractive features which attracts tourists who bring in foreign exchange.
- Coral reefs are breeding grounds for fish hence they help to promote the fishing industry.
- Limestone provides stones for building houses and for decorative purposes e.g. marble promoting the building industry.
- Pieces of coral reefs are sold as ornaments for income and beauty value
- Used to produce lime which is used for mortar and in agriculture to reduce soil acidity.

8. **(a) (i) Differentiate between orogenic and epeirogenic earth movements? (2 marks)**

Orogenic earth movements are the horizontal /lateral displacements occurring within the crustal rocks due to tectonic forces while epeirogenic earth movements are the vertical displacements occurring within the crustal rocks

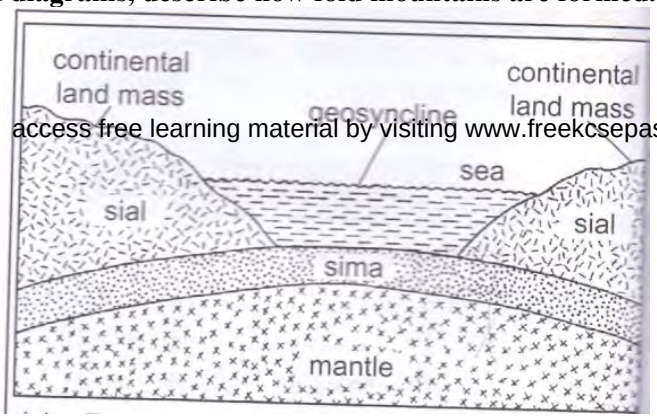
(ii) Describe the origin of continents according to the theory of plate tectonics. (4 marks)

- The earths lithosphere /sima and sial is divided into several rigid blocks called tectonic plates
- The plates extend from the surface of the crust to about 100km deep
- The plates float on semi-molten mantle that lies beneath
- The plates move horizontally due to convectional currents within the mantle
- The plates move in three ways. Either towards one another, away from one another or sides by sides parallel to each other
- They form distinct boundaries along the plate margins

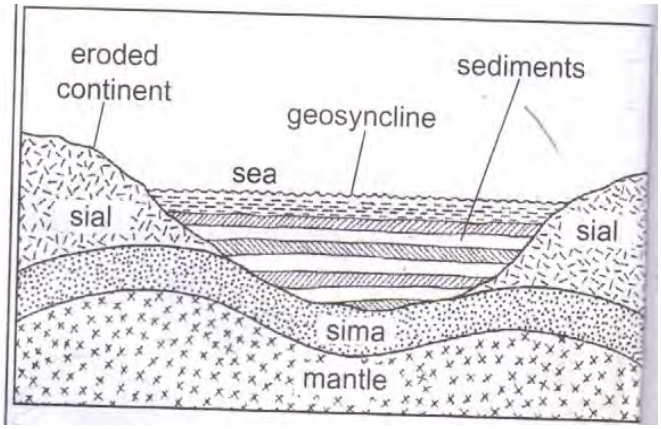
(b) (i) Apart from an overthrust fold, name three other types of folds. (3 marks)

- Simple fold/simple symmetrical fold
- Asymmetrical fold
- Overfold
- Isoclinal fold
- Recumbent fold
- Overthrust/Nappe/thrust
- Anticlinorium and synclinorium complex

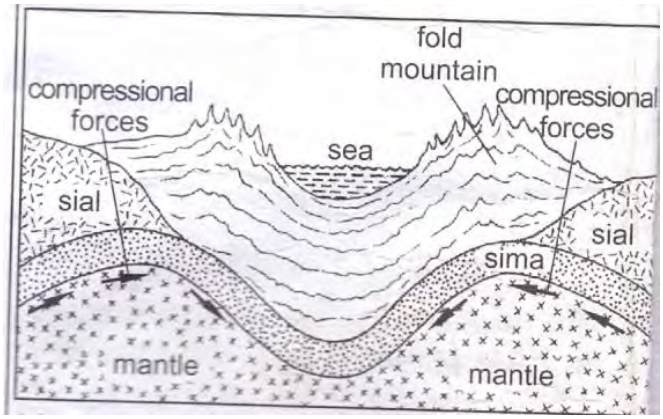
(ii) Using well labelled diagrams, describe how fold mountains are formed. (10 marks)



- Prolonged and extensive erosion occurs on the surrounding higher grounds.
- Sediments are deposited in the geosynclines forming thick layers.
- The weight of the sediments causes subsidence of the geosynclines leading to accumulation of more sediments to great thickness.
- Further subsidence of the geosynclines triggers off compressional forces which cause the sediments to fold.



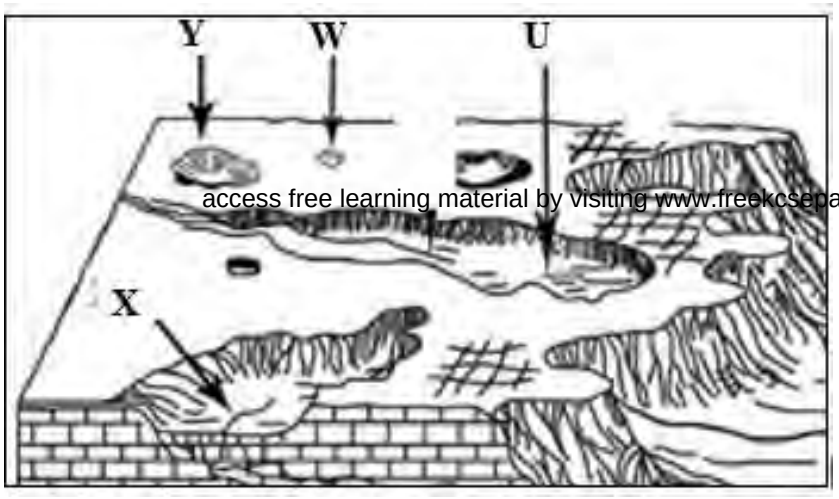
- The folded layers of sediments in the geosynclines are thrust upwards to form fold mountains along the edges of the geosynclines.



(c) Explain three negative effects of folding to human activities.(6 marks)

- Leeward sloped of fold mountains receive little/no rainfall/dry conditions which discourage settlement/crop farming.
- The rugged nature of folded landscape discourage settlement.
- Folded mountains are barrier to transport and communication/make construction of transport and communication lines expensive/difficult.

9. The diagram below shows a karst scenery. Study and use it to answer the question that follow.



(a) (i) Identify the features labeled W and Y. (2 marks)

- Sink-hole.
- Doline

(ii) Four conditions necessary for the formation of a karst landscape. (4 marks)

- The surface rock should be thick, limestone, chalk or dolomite rock to allow solubility by rainwater.
- The rock should be hard, well jointed to allow rainwater to percolate through the lines of weaknesses.
- The place should be hot and humid to facilitate chemical weathering / reaction / carbonation.
- The water table should be far below the surface to allow formation of features.

(iii) Describe the formation of a stalagmite. (5 marks)

- Rainwater dissolves / absorbs CO_2 in the atmosphere to form carbonic acid.
- Carbonic acid falls on a jointed limestone rock below which is a cave.
- The rainwater percolates along the joints.
- Percolating rainwater reacts with $CaCO_3$ to form calcium bicarbonate which is soluble.
- The solution drips to the floor of the cave.
- Some of the water evaporates and CO_2 is released leaving behind deposits of $CaCO_2$ which grows upwards from the floor of the cave.

– The $CaCO_3$ accumulate with time and eventually lead to the formation of finger like projections on the floor of the cave called Stalagmites.

(b) (i) Name two water erosional features on a desert landscape. (2 marks)

– Mesas and Buttes.
– Gorges and canyons.
– Wadis.
– Dry river valleys/ Laghas.
– Inselbergs.

(ii) Describe the formation of zeugens. (4 marks)

- Forms in deserts areas where alternating horizontal hard and soft rock layers are found.
- The top layer of hard rocks is jointed / has cracks.
- Weathering opens up the joints / cracks making it easier for rocks to be removed by abrasion.
- Wind abrasion erodes / opens the joints / cracks deepening and widening them to reach the soft layers of rocks.
- Deflation blows away the loose broken materials,
- The furrows are formed and are gradually widened and deepened as abrasion continues into the soft rock.
- The hard-resistant rock forms ridges called zeugens separated by furrow. this process creates a ridge and furrow landscape.

(iii) Explain four significance of desert landforms to human activities. (8 marks)

– Desert features e.g. zeugens, Yardangs rock pedestals are tourist attraction.
– Deflation hollows may contain water used for domestic use, livestock or irrigation.
– Loess forms fertile soils used for farming.
– Seasonal oils streams may be dammed to provide water for irrigation or during the dry season.
– Desert landscape / areas is an area for testing military weapons and military training.
– Sand dunes may cover roads making transport difficult.
– The wadis / bed lands make transport facilities difficult and expensive / barriers to lines of transport.
– The dessert has high solar insolation for solar energy production.

– Desert scenery and skies (clear) provide good sites for shooting of films.
– During period of torrential rains, the flash floods along the wadis cause deaths when people are carried away by the water that is furiously flowing through the wadis.
– Rocky desert surface discourage settlement.

10. (a) (i) Define soils (2 marks)

– It is the accumulation of rock particles, minerals, organic matter, water and air found on the surface of the earth on which plants grow
– Soil is a thin layer of unconsolidated loose rock materials and decayed organic matter on the earth's surface in which plant grow

(ii) Explain how the following factors influence soil formation Parent material

– Hard rocks are weathered slowly because they are more resistant. This slows down soil formation process. /Soft rocks are weathered faster because they are less resistant. These speeds up the soil formation process.
– Large grained rocks are weathered down to form coarse soils. /Small grained rocks are weathered down to form fine soils.
– The texture of the rocks determines the type of soil e.g. Sandy, loamy or clay.
– Mineral of parent rock are transferred to the top soil during weathering. **(4 marks)**
–

- **Human activities (2 marks)**

(b) The diagram below shows a soil profile. Use it to ans\ estion (i) and (ii).
(i) Name the parts marked X and Y. (2 marks)
(ii) Describe the characteristics of the top soil (4 marks)

– Dark in colour,
– Some are light in colour
– Contains humus,
– Has true soils – solum,
– A zone where leaching occurs – eluviation
– Divided into A_{00}, A_0,A_1,A_2,A_3

(c) Explain three causes of physical soil degeneration (6 marks)

- Overgrazing leads to removal of vegetation exposing soil to agents of erosion and excessive evaporation from soil (water loss)
- Overgrazing results in loose and fine textured soils due to rock pounding by animals.
- Frequent ploughing weakens soil structure making it easy for agents of soil erosion to carry away the top fertile soils.
- Heavy rainfall washes down the top soil leading to thin / shallow soil,
- Heavy rainfall may also alter the structure of soils from crumb to blocky / columnar which are unsuitable for cultivation on
- Heavy rainfall may result in water logging in flat and lowland areas making the soils unsuitable for plant growth.
- Prolonged drought causes the soils to lose water to become dry thus become susceptible to wind erosion.
- Prolonged drought causes the soil to lose water / moisture thus soil particles held together become loose / disintegrate.

(d) State five ways of conserving soils (3 marks)

- Crop rotation
- Mixed farming
- Application of chemical fertilizers
- Creation of drainage ditches / trenches
- Intercropping
- Mulching
- Bush fallowing
- Ploughing along the contours
- Controlled grazing
- Strip cropping
- Construction of cut off drains
- Terracing on steep slopes
- Afforestation/reafforestation/agroforestry

LANG'ATA/ KIBRA CLUSTER
312/2
GEOGRAPHY Paper 2

SECTION
Answer **all** the questions in this section.

1. (a) What is practical Geography? (2 marks)
   - The study of practical skills which enhance the understanding and interpretation of geographical phenomena.

   (b) State **three** practical aspect we study in Geography. (3 marks)
   - Maps and map reading/Maps and mapwork
   - Photograph work
   - Time management
   - Data interpretation
   - Data presentation

2. (a) Apart from marine parks, give **two** other tourist attractions at the Kenyan coast. (2 marks)
   - Sandy beaches/cliffs/caves/Indian ocean
   - Coral reefs
   - Mangrove swamps
   - Marine life
   - Warm/sunny climate of the coast
   - Historical sites e.g. fort Jesus
   - Traditional culture of the people/dances/shrines/Kaya forests/craft

– Water sport/beach sports

(b) State **three** reasons why national parks have been established in Kenya. (3 marks)
– To preserve Kenya's natural beauty.
– To conserve wildlife/flora and fauna
– To attract tourists
– To provide opportunities for education and research
– To protect our wildlife for posterity

3. (a) Name **two** towns in Kenya where motor vehicle assembly plants are found. (2 marks)
– Nairobi
– Thika
– Mombasa

(b) State **three** ways in which Kenya has benefited from assembling of motor vehicles locally. (3 marks)
– Creation of employment
– Earns Kenya foreign exchange
– Helps Kenya save on foreign exchange.
– Has led to development of skills among Kenyans.
– Enabled Kenya to develop trade links with other neighbours.
– Stimulates development of other related industries e.g. paint
– Led to investment of capital by rich companies.

4. (a) Identify **two** indigenous beef cattle breeds raised in Kenya. (2 marks)
– Boran
– Zebu
– Sahiwal

(b) Give **three** factors which favour beef farming in the Nyika plateau. (3 marks)
– The presence of watering points/ Lorian swamps/some permanent rivers to provide water for animals

– There are large tracts of land/sparsely populated areas with natural grass which provide food for animals.
– The local people keep livestock e.g their occupation provide the basis for beef farming.
– The semi-arid condition/Low Savanna grassland in the region favour beef cattle keeping.
– The area is free from animal pests especially the tsetse flies.
– Gentle slopes/ relatively flat terrain for easier movement of animals

5. (a) Differentiate between exports and imports. (2 marks)
- Exports are goods that a country sells to other countries while imports are good that a country procures from other countries.

(b) State **three** factors which influence external trade in Kenya. (3 marks)
– Government policy/services
– Differences/similarities in goods produced
– Availability of aids to trade
– Demand for goods locally
– Availability of transport/communication network
– The purchasing power of the people/ availability of capital.
– The level of industrialization.
– Political stability/relationship of trading partners.
– International trade agreements/restrictions.
– Varying exchange rates

SECTION B

Answer question **6** and any other **TWO** questions from this section.

6. Study the photograph below and use it to answer question (a).

(a) (i) What evidence in the photograph shows that this is a ground general view type of photograph? (2 marks)
- The focus is on many objects
- The photograph captures the broad view of the area

- The objects become progressively smaller towards the back ground

(ii) Name the type of pollution shown on the photograph. (1 mark)
Water pollution

(iii) Draw a rectangle measuring 15cm by 10cm to represent the area on the photograph. On it, sketch and label the main features shown on the photograph. (5 marks)

(iv) State **three** causes of this type of pollution. (3 marks)

- Oil leaks from ships/trucks
- Dumping of solid waste into water courses
- Surface run off/soil erosion into water depositing it.
- Disposing of raw sewages into rivers/lakes
- Washing/bathing/watering animals in rivers/lakes

- Washing away into rivers and lakes chemicals/fertilizers/ pesticides/ insecticides
- Industrial effluent when discharged into rivers/lakes

(v) Explain **three** measures that may be taken to combat this type of pollution.(6 marks)

- Recycling wastes in order to reduce the industrial waste turn over.
- Industrial waste such as effluents should be treated before releasing them to water to reduce their negative impact.
- Biological control of weeds should be encouraged instead of using weed killer chemical
- Enforce environmental laws on the use of improved technology for industrial efficiency.

(b) (i) Name **two** rivers in Kenya to the west of the rift valley which cause large scale flooding.(2 marks)

- River Nyando
- River Nzoia
- River Yala

(ii) Explain factors that lead to frequent flooding in the lake region of Kenya. (6 marks)

- The land in the region is low lying which cause rain water to spread over a wide area.
- The adjacent highlands receive heavy rainfall which releases large volumes of water resulting to rivers overflowing their banks.
- Silt has filled the river beds making them shallow spilling their water over the banks.
- Some areas have black cotton soils which are non-porous which when it soaks up allows water to flow and spread on the surface.
- The heavy rainfall received in some of the lake regions cause thelake levels to rise thus flooding the adjacent lowlands.
- Deforestration in the catchment areas reduces water infiltration and encourage surface run-off which ends up in rives which makes them burst their banks.
- Cultivation along the river banks in most rivers have blocked the river channels and cause it to be shallow thus spilling their water over the land.

7. (a)

(i) Define the term fisheries. (2 marks)

These are water bodies where fish are found or reared and exploited for food or commercial purposes.

(ii) Name **two** types of inland fisheries in East Africa. (2 marks)

- Fresh water Lakes
- Rives
- Fish ponds
- Man-made reservoirs

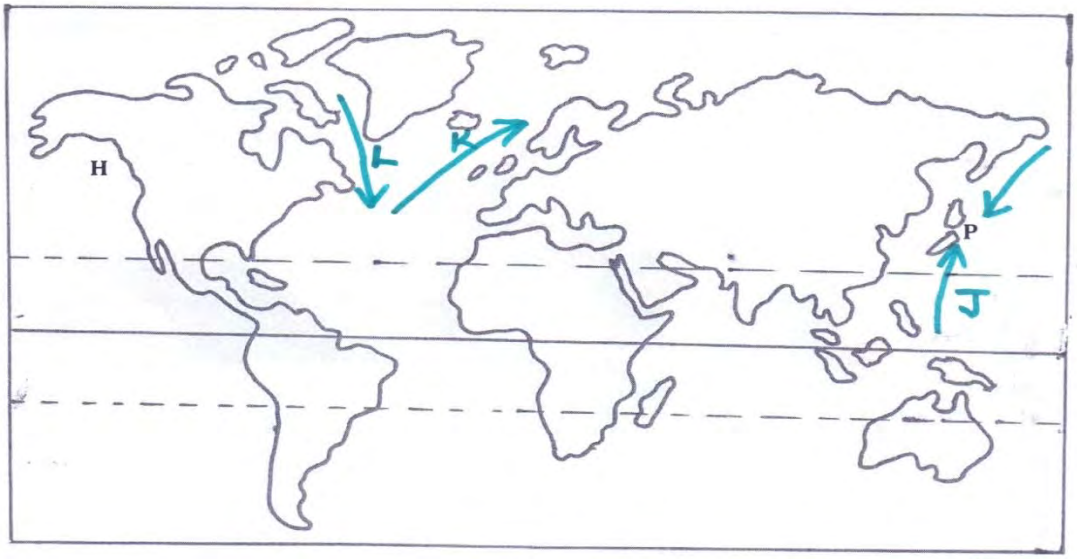
(iii) State **four** measures that the government of Kenya has taken to conserve fisheries. (4 marks)

- Through restocking the overfished areas by breeding fingerings in fish farms.
- Through standardizing the mesh size of nets used to ensure only mature fish are caught.
- Through licensing commercial fishermen to control their numbers to help control overfishing.
- Through restricting fishing to specific seasons to allow breeding and maturing of fish
- Through legislation to restrict disposal of untreated and solid wastes into the ocean and lakes in order to control water pollution and ensure survival of fish.
- Through discouraging entry of foreign fishermen in Kenya's territorial waters in the Indian oceans to avoid overfishing. (Usually 320km)
- Through enforcing international convections to protect the endangered species of fish.
- Through encouraging fish farming to ensure sufficient supply of fish from other sources other than the natural fisheries.

(b) Describe how basket fishing method is used to catch fish. (6 marks)

- It is used in shallow lake waters, ponds and rivers.
- The basket is funnel shaped to allow easy entry of fish
- The mouth of the basket has a no-return valve which prevents outward escape /movement of fish once inside the basket.
- A bait is put in the basket to attract fish.
- The basket is then lowered in shallow water with the mouth facing the direction from which water is flowing.
- The basket is held in position with ropes or sticks/stones to prevent it from drifting downstream.
- It is left in that position for some time/overnight and then removed for emptying of fish.

(c) The following map shows the world distribution of the major fishing grounds. Study and use it to answer the questions that follow.



(i) Name **two** types of fish species found in the fishing ground marked **P**. (2 marks)
- Salmon
- Tuna
- Bonito
- Sardine
- Cod
- Mackerel

(ii) Identify the ocean currents labelled **J, K** and **L**. (3 marks)
J - Labrador cold ocean current
K - Warm North Atlantic drift current
L - Cold Oya-shio current

(iii) Explain **three** physical factors that favour large scale fishing in the fishing ground marked **H**. (6 marks)

– Presence of Warm North Pacific current that raises the low temperature of the water making it ideal for the growth of the planktons.
– Presence of warm north pacific current that washes the area making the water ice free thus enabling fishing to take place throughout the year.
– Presence of a highly indented coastline which forms suitable breeding sites for fish and good landing ports.
– Presence of a highly rugged mountainous landscape under dense forest cover which discourages agriculture activities thus people engage in fishing as an alternative economic activity.

8. (a) (i) Identify the type of energy from the following sources of energy.
- Tides (1 mark)
- Tidal/wave energy
- Uranium (1 mark)
- Nuclear energy

(ii) What is Geothermal energy? (2 marks)
– This is energy derived from steam from the hot rocks in the interior of the earth.

(iii) State **three** factors that hinder expansion of geothermal production in Kenya. (3 marks)

– Inadequate technology to ensure exploitation
– Limited number of suitable sites for generation and exploration
– Inadequate capital for investment
– Scarcity of skilled labour hence reliance on expatriates who are costly.
– The danger of land subsidence

(b) Explain **three** problems that face the use of firewood as a source of energy in Kenya.(6 marks)
– Use of firewood produces a lot of smoke which pollutes the environment
– Carbon dioxide from the wood fuel contributes to global warming.
– Leads to destruction and degradation of environment due to deforestation.
– Bulky and costly to transport
– A lot of wood is required because of low energy output
– Require a big storage area compared to other sources of energy
– Wood fuel is dirty due to soot and smoke

(c) (i) State **four** physical factors that favoured the location of the Owen Falls Hydro-electric Power project in Uganda. (4 marks)
– The Owen falls provided a natural waterfall/head waters which made it easy to construct a power generating plant.
– Narrow channel /gorge on the Nile River provided a suitable site for the power station reducing the cost of construction.
– Presence of L. Victoria provided a large reservoir for water.
– Abundant and reliable/constant supply of water for the generation of power throughout the year.
– Strong basement rock system which provided a firm foundation for the dam.

(ii) Explain **two** problems the government of Kenya faces in her effort to develop H. E. P stations. (4 marks)
– Fluctuating water levels in the rivers during drought lead to lower production hence power rationing.
– Displacement of people due to creation of the reservoir has led to high cost of compensation.
– Limited sites for both HEP and Geothermal production.
– The quantity of water downstream can greatly reduce due to the dam, especially during drought

(d) Form Four students carried out a field study in Kamburu H.E.P plant.

(i) State **two** objectives for their study. (2 marks)

- To find out the factors that influenced the location of the plant/station.
- To find out the amount of energy generated daily from the station.
- To identify/find out/establish the problems facing the station.
- To investigate/determine the uses of the energy produced.

(ii) Give **two** reasons why they needed a working schedule. (2 marks)

- To ensure proper time management and reduce time wastage.
- To ensure important areas are covered adequately.
- Ensures that one remains within the scope of the study.
- Help to estimate the time required for the study.
- Provides a basis for evaluating the fieldwork while it is in progress.

9. (a) Differentiate between transport and communication? (2 marks)

Transport is the movement of goods and people from one place to another while communication is the transmission of information from one person to another.

(b) Explain how the following factors influence development of transport in Kenya.

(i) Government policy (2 marks)

- The government and political leaders make decisions of developing transport and communication network in an area.
- The government plans and gives finance to construct such networks and maintain the existing transport infrastructure.
- Government may cooperate with development partners to finance construction of transport and communication networks in a country.
- Government can agree on joint ventures to build transport lines across boundaries to join different countries.

(ii) Relief (2 marks)

- Rugged terrain acts as a barrier to construction of roads and railways.

- It is easy and cheaper to construct roads, railway lines and airports on gently sloping areas.
- Railways and roads are constructed around high mountains which makes them to take longer distance hence expensive.
- Some roads are constructed parallel to the steep escarpments.

(c) (i) Identify **three** conditions of roads in Kenya that cause occurrence of accident (3 marks)

- Some roads have pot-holes which drivers may hit causing tire bursts hence loss of control of the vehicle leading to an accident.
- Some roads have steep gradient and sharp bends were drivers may lose vehicle control and veer off the road.
- Some rods have muddy and slippery surfaces during rainy season which may cause vehicles to collide.
- Some roads are unmarked and have unclear road signs which make drivers to lose vehicle control.
- Some roads have dusty conditions which cause reduced visibility leading to accidents.
- Some roads have narrow bridges which make vehicles crash head on.
- Some roads have substandard smooth surfaces where vehicles may skid and overturn.
- Absence of sidewalks for pedestrians make pedestrians walk on the road causing accidents.

(ii) State **three** measures taken by the government of Kenya to reduce road accidents. (3 marks)

- Introduction of speed governors on public service vehicles to control speed at 80km/hr.
- Legislation to prohibit overloading of public service vehicles with passengers.
- Construction of bumps to control speed in case of many passengers crossing busy road sections.
- Carrying out road safety education through mass media to create awareness on road safety precautions.
- Intensified police checks to track down on road un-worthy vehicles and traffic offenders.
- Repair and maintainace of roads to get rid of pot-holes.
- Strict regulations on issuing driving licenses to ensure drivers are competent.
- Use of road safety reflectors to warn other road users in case of a vehicle breakdown on the road.
- Installation of road signs to warn on bumps, sharp comers, steep road sections and traffic lights to control traffic flow in busy urban roads.

- Construction of flyovers and zebra-crossing across busy roads to reduce number of pedestrians crossing busy roads.
- Construction of sidewalks to reduce number of pedestrians on roads.
- Pedestrians and cyclists using roads at night advised to wear bright clothes to avoid being hit by vehicles.

(d) (i) Name **two** major railway lines in East Africa. (2 marks)
- Kenya-Uganda railway line.
- Tanzam/TAZARA railway line

(ii) State **three** reasons why road transport is more developed than railway transport in East Africa. (3 marks)

- Roads are more flexible and easily constructed to serve from door to door unlike railways that serve specific areas.
- Roads are constructed on different grades unlike railways which are constructed on specific gauges.
- Roads can be used by a wide range of transport agents unlike railways which are used by a single type of train.
- Roads are cheaper to construct and requires less capital unlike railways which are expensive as they require iron and steel.
- Roads carry all quantities of goods which promote small scale business while railways only carry bulky goods thus more roads are constructed as they are in great demand.
- Roads are faster means of transport as opposed to the she slow moving railway transport in most of Africa.
- Roads require less skills in construction unlike railway which require advanced skills to construct specific gauges.
- Roads are wide spread as they can be constructed on varied terrain unlike railways which can only be constructed on relatively flat land.

(e) Study the map of the great lakes and the St, Lawrence Sea way provided and use it to answer the questions that follow.

(i) Name the port marked **P** and the canal marked **Q**. (2 marks)
P - Duluth
Q- New-York State Barge Canal.

(ii) Explain **three** ways in which the sea route has contributed to industrial growth in the region. (6 marks)

- It has enabled easy transportation of raw materials to the industries and finished products the markets.
- It has provided cheap water transport which reduced the transportation cost of transporting bulky products.
- Dams constructed provide hydro-electric power for industrial use.
- It has led to development of ports and towns which provide cheap labour and a ready market for the industrial goods produced.
- Water reservoirs provide water for industrial use.
- It has increased the volume of trade on industrial products.

10. (a) (i) What is population? (2 marks)

– Is the total number of people living/inhabiting a geographically defined area.

(ii) Give **three** reasons why it is important for the government to conduct a population census. (3 marks)

– To determine the total number of people in the country
– To help in distribution of resources
– To make estimates of population growth
– For economic planning and policy making
– To identify death and birth rate or fertility and mortality rate hence determine growth rate.
– To help create new administration units or boundaries
– To help the government to generate employment
– To establish the age sex composition and dependency ratio
– To help create new administration units or boundaries

(b) Explain how the following physical factors has influenced population distribution in Kenya.

(i) Climate (2 marks)

– Areas experiencing high rainfall throughout the year are densely populated because they are suitable for arable farming/support variety of crops.
– Hot and dry areas discourage arable farming hence have fewer people/ low population densities.
– Very cold and extremely hot areas have low population densities because the low temperatures limit growth of crops, and may be harsh for human habitation.

(ii) Pests and diseases. (2 marks)

– Areas infested with pests like tsetse flies and prevalent diseases are sparsely populated due to unhealthy conditions.
– Areas that are free from pests and diseases attract many people leading to dense population.

(c) (i) Define the term fertility. (2 marks)

– Fertility is the ability of a woman to conceive and give birth to a live child.

(ii) Give **four** factors that influence fertility. (4 marks)

– Level of education
– Family planning or use of birth control or contraceptives.
– Medical care or hygiene or health facilities
– Nutrition or diet for healthy bodies
– Cultural beliefs e.g early marriages, naming relatives, sex preference
– Religious practices which limit use of contraceptives

(iii) State **four** causes of intra-urban migration. (4 marks)

– Search of better housing
– Search cheaper housing
– Nearness to places of work/ reduce cost transport
– Availability of social facilities/amenities e.g schools, hospitals/ recreational facilities, electricity, water etc.
– Insecurity in some parts of town force people to move to other estates/ parts.
– Cultural/religious affinity attracts some people to move to some parts of towns.

(d) Explain **three** problems that result from high population growth rate in Kenya. (6 marks)

– High dependency ratio results into little savings by the working group leading to low investments and low living standards.
– High unemployment rate leading to low living standards as the rate of population growth is higher than the job opportunities.
– Increased poverty and large number of unemployed may lead to high crime rate and social evils.
– High demand for social amenities or inadequate social amenities leads to strain and congestion in schools, hospitals, and housing and transport facilities.
– High demand for agricultural land leads to land fragmentation, landlessness and destruction of forests
– Increased demand for food has led to food shortage
– Slow economic growth rate as a lot of revenue is used to meet the demands of large population instead of investing in income generating projects.

Rural-urban migrations resulting to congestion and social evils in urban

CASPA AMUKURA PARISH EXAM
312/1.
GEOGRAPHY PAPER 1.

SECTION A
Answer all questions in this section.

1. a) Explain the origin of the earth and the solar system according to the Nebula cloud theory. (4mks)
   b) Name **two** other theories that explain the origin of the earth and the solar system apart from the Nebula cloud theory. (2mks)
2. a) List **two** zones of transition in the atmosphere. (2mks)
   b) Give **three** evidences that the interior of the earth is hotter. (3mks)
3. a) Define the following terms.
      i) River divide (1mk)
      ii) A confluence (1mk)
      iii) A river profile (1mk)
   b) List **three** factors that influence the formation of a river. (3mks)
4. How is an oasis formed? (4mks)
5. List **four** characteristics of Mediterranean climate. (4mks)

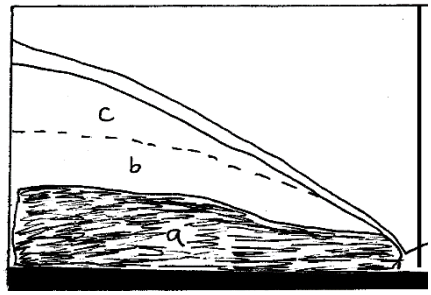
SECTION B: ***Answer questions six and any other two questions.***

6. (a) Study the map of Kijabe 1: 50,000 sheet 134/3 provided and answer the following questions
      (i) Give the approximate height of peak of Kijabe hill. (1mk)
      (ii) Measure the length of the Naivasha –Nairobi railway line from landhies (Grid ref 257987) to the level crossing near Kijabe station (grid reference 308984). Give your answer in kilometers and Meters.) (2mks)
      (iii) Name the relief feature on the map that may have created problems during the construction of the railway line. (1mk)
   (b) Describe the drainage of the area covered by the map extract. (5mks)
   (c) Explain how relief has influenced the distribution of settlement in the area covered by the map extract. (4mks)

   (d) Citing evidence from the map, state four economic activities carried out in the area covered by the map extract. (4 mks)
   (e) Suppose you were to carry out a field study at Wakangwe forest:
      (i) Design a working schedule that you would use during the day of the study. (5mks)
      (ii) Give reasons why it would be necessary to sample part of the forest for the study (2mks)
      (iii) State two ways in which your findings would be useful to the local community. (2mks)
7. a) i) What is faulting? (1mk)
      ii) With the use of a well labeled diagram explain how a reverse fault occurs. (5mks)
      iii) State **two** other types of faults apart from reverse faults. (2mks)
   b) Describe how a rift valley forms through tensional forces. (4mks)
   c) Explain **three** ways in which features resulting from faulting are of economic importance to man. (6mks)
   d) You intend to carry out a field study of the landforms around your school.
      i) State **two** hypotheses you are likely to formulate for the study. (2mks)
      ii) Apart from dividing your class into groups, in what three other ways will you prepare for the study. (3mks)
      ii) In what **two** ways is dividing the class into groups important? (2mks)
8. a) i) Differentiate between intrazonal and azonal soils. (2mks)
      ii) Give **three** examples of a zonal soils (3mks)
   b) i) Explain **four** factors that influence soil formation. (8mks)
      ii) Give **two** factors that determine the colour of soil (2mks)
   c) i) What is soil erosion. (2mks)
      ii) Explain **four** ways in which vegetation prevents soil erosion. (8mks)
9 a) i) Name a country in Africa where temperate grassland is found. (1mk)
      ii) State **four** characteristics of temperate grasslands. (4mks)
   b) i) Explain **four** ways trees in the coniferous forests have adapted to the environmental conditions of the region. (8mks)

c) You are required to carry a field study on a forest near your school. Describe the methods you would use to determine each of the following aspects of the trees in the forest.
   i) Age of the trees. (3mks)
   ii) Height of the trees. (3mks)
   iii) Tree species (3mks)

10. The figure below shows underground zones of saturation. Use it to answer question a (i)



a) i) Identify the zones marked a, b, and c. (3mks)
   ii) Name **four** sources of groundwater. (4mks)
b) Explain **four** ways in which groundwater is of significance to human activities. (8mks)
c) i) Give **two** examples of lakes in East Africa that have formed due to crustal warping. (2mks)
   ii) Describe how the process of crustal warping leads to formation of lakes. (5mks)
   iii) State **three** other processes that lead to formation of lakes apart from crustal warping. (3mks)

CASPA AMUKURA PARISH EXAM
312/1.
GEOGRAPHY PAPER 1
MARKING SCHEME

SECTION A

1. a) Origin of the solar system and the earth according to the Nebular Cloud Theory
- There existed a big cloud ✓ (Nebular of hot gases and dust)
- This cloud which was rotating at a very high speed ✓ flattened into a disk due to centrifugal force.✓
- Very hot materials concentrated at the centre✓ of the rotating cloud and led to the formation of the sun
- Some masses of gases and dust were thrown off as ✓ the cloud continued to rotate
- The particles consolidated, cooled and contracted to form planets✓ 1 x 4 = 4mks

b) Other theories
- The twin star theory/ big bang✓
- The passing star theory✓
- Biblical/ creation theory✓ 1 x 2 = 2mks

2. a) Transitional zones of the atmosphere
- Tropopouse
- Stratopause✓
- Mesopause✓ 1 x 2 = 2mks

b) Evidences that the interior of the earth is hotter
- During volcanic eruptions hot material (magma) are ejected onto the surface✓
- Occurrence of hot springs on the ground✓
- Progressive increasing heat experienced as mines and borings get deeper✓
- The molten state of rocks in the mantle✓ 1 x 3 = 3mks

3. a) Defining
(i) River divide – It is a ridge line/ hill ground that separates two or more river basins✓
(ii) A confluence – The point at which a tributary joins the main river✓
(iii) A river profile – This is the longitudinal cross section of a river from the source to the mouth.
1 x 3 = 3mks

b) Factors that influence the formation of a river

- Vegetation cover✓
- Climate✓
- Nature of rocks✓
- The degree of slope✓
- Land use systems e.g. irrigation✓ 1 x 3 = 3mks

4. How an oasis forms

- A pre-existing depression is deepened by eddy action/ deflation✓
- Gradually the depression is excavated through wind abrasions✓
- The surface is lowered until it reaches the water bearing rock/ aquifer / table
- Water oozes out of the ground and collects in the depression to form an oasis✓

1 x 4 = 4mks

5. Characteristics of mediterranean climate

- Summers are hot with temperatures of about 21^0C✓
- Winters are mild/ cold with temperatures of about 11^0C✓
- Mean annual rainfall moderate varies between 500 – 900 mm with most of it falling in winter✓
- The region mainly experiences cyclonic rainfall✓
- Trade winds are offshore in summer and onshore westerlies dominate in winter✓
- Hot and cold local winds are common✓ 1 x 4 = 4mks

Total = 25 marks

SECTION B

6. (a) Study the map of Kijabe 1: 50,000 sheet 134/3 provided and answer the following questions

(i) Give the approximate height of peak of Kijabe hill. (1mk)

- 2260m- less than 2280m.

(ii) Measure the length of the Naivasha –Nairobi railway line from landhies (Grid ref 257987) to the level crossing near Kijabe station (grid reference 308984). Give your answer in kilometers and Meters.) (2mks)

- 5 kilometres 600metres. (5.6km is wrong for the requirement of the question.)

(iii) Name the relief feature on the map that may have created problems during the construction of the railway line. (1mk)

- Hill

(b) Describe the drainage of the area covered by the map extract. (5mks)

- The main drainage feature are rivers.
- The main river is R.Ewaso Kedong.
- The area has disappearing rivers.
- The area has radial drainage pattern.
- Most rivers display dendritic drainage pattern
- The area has a water trough.
- The area has water holes. (5*1mk)

(Student scores without giving the reference on the map-the question has not asked "giving evidence from the map")

(c) Explain how relief has influenced the distribution of settlement in the area covered by the map extract. (4mks)

- Steep slopes have few settlements to the north west/around Kijabe hill.
- Gentler slopes have attracted higher settlements e.g. around Magina.(Any 2*2mks)

(d) Citing evidence from the map, state four economic activities carried out in the area covered by the map extract. (4 mks)

- Trade-Presence of shops
- Livestock rearing-Presence of cattle dips/dairy(This is one marking point)
- Tourism-Presence of hot springs.
- Transport-Presence of roads.
- Lumbering-Presence of a sawmill.

- Manufacturing-Presence of carbacid plant.
- Quarrying-Presence of a quarry.

(e) Suppose you were to carry out a field study at Wakangwe forest:

(i) Design a working schedule that you would use during the day of the study. (5mks)

TIME	ACTIVITY
7.00am-7.30am	**Arrival at assembly point. Assemble equipment**
7.30am-8.00am	**Departure for place of study**
8.00am-8.30am	**Arrival at place of study. Registration with authorities.**
8.30am-12.00noon	**Embark on data collection**
12.00-1.00pm	**Lunch break**
1.00pm-3.00pm	**Continue data collection**
3.00pm-3.30pm	**Report back to authorities Depart for assembly point.**
3.30pm	**Arrive at assembly point. Departure for homes.**

(ii) Give reasons why it would be necessary to sample part of the forest for the study. (2mks)

- To save time by reducing the area to be covered.
- To reduce fatigue for the participants by reducing area to be covered by individuals.
- To ensure thorough scrutiny of the sampled area.

(iii) State two ways in which your findings would be useful to the local community. (2mks)

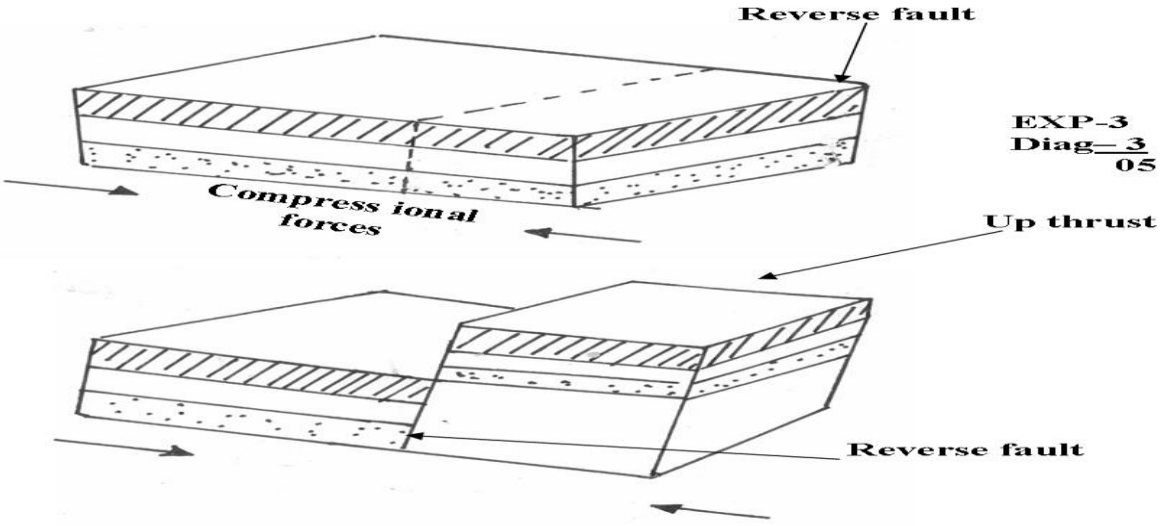
- Will form basis for future research.
- Will reveal the importance of forests to the general community hence forest conservation.

7. a) (i) What is faulting

- It is the fracturing/ cracking of crustal rocks ✓1

(ii) Formation of reverse fault

- Formed when crustal rocks are exposed to compressional forces✓
- A reverse fault develops ✓
- Continued pushing of compressional forces lead tone block being pushed over the other to form a reverse fault ✓



(iii) Other types of faults
- Normal faults✓
- Shear/ tear/ slip/ strike slip/ wrench/ trancurrent✓
- Thrust fault/ over throw✓
- Anticlinal faults✓ 1 x 2 = 2mks

b) How a rift valley forms through tensional forces
- Layers of rocks in a region are subjected to tensional forces✓
- Lines of weakness develop, resulting in the development of normal faults✓
- As the forces pull the side blocks away, the middle block sinks✓
- The block that has sunk forms the floor of the rift valley ✓ 1 x 4 = 4mks

c) Economic importance of features formed through faulting
- Block/ horst mountains are a source of rivers which provide water for HEP production e.t.c✓✓
- Rift valley formation has led to the exposure of minerals e.g. diatomite which are mined on the rift valley floor✓✓
- Rift valley lakes formed through faulting are important fishing grounds ✓✓
- Faulted features provide scenery which promote tourist industry✓✓
- Block mountains attract rainfall which favour agriculture/ settlement✓✓ 2 x 3 = 6mks

d) (i) Hypotheses
- Most landforms near my school have resulted from faulting✓
- Presence of block mountains around my school has influenced tourism✓
- Mountains are the dominant landforms around my school✓Any relevant points 1 x 2 = 2mks

(ii) Other ways of preparing for the study
- Seeking permission from relevant authorities✓
- Conducting a pre-visit/ reconnaissance✓
- Preparing a questionnaire✓
- Holding discussions in class✓
- Preparing a working schedule✓
- Reading through relevant books✓
- - Gathering the required tools✓ 1 x 3 = 3mks

(iii) Importance of dividing into groups
- It eases congestion/ overcrowding in areas they have to visit✓
- It helps in ensuring that required data is collected within the time frame given✓
- It creates order when carrying out the field study✓
- Ensures that everybody is involved in the study✓ 1 x 2 = 2mks ***Total = 25 marks***

8. a) (i) Difference between intrazonal and azonal soils

Intrazonal soils are those soils that are formed under poor drainage conditions e.g. water logged areas whereas azonal soils are those soils that have not had adequate time to develop. They are thus immature soils.✓✓

The difference must come out clearly to score

(ii) Examples of azonal soils
- Mountain/ scree soils✓
- Alluvial soils✓
- Glacial soils✓
- Loess✓
- Volcanic soils recently formed✓

b) (i) Factors that influence soil formation
- **Parent rock✓F**

  Nature of the rock influences the rate of weathering ✓EX hard rocks weather slowly while soft rocks weather fast
  The rock determines the soil texture e.g. large grained rocks produce large grained soils
- **Living organisms✓F**

  They assist in the breaking down of rocks through burrowing ✓EX
  The roots of bigger plants break up the soil as they grow and allow water to pass through

- **Topography✓**
  It determines the rate of weathering e.g. steep slopes encourages high rate of weathering✓EX
  It influences soil depth e.g. gentle slopes have deep soils while steep slopes have thin soils
  It influences soil drainage e.g. where land is flat soils are poorly drained
- **Climate✓F**
  Affects the rate and type of weathering that takes place ✓EX
  Determines the rate of leaching
  Elements of climate i.e. Temperature accelerates weathering leading to soil formation
- **Time✓F**
  For soil to reach maturity, time is required✓EX F = max 04 EX = max 04 **Total = 8mks**

(ii) Type of parent material✓
Chemical composition of the soil✓
Drainage of the area✓

c) (i) What is soil erosion

The process by which the top soil is removed/ detached and carried away ✓✓ by various agents at a rate that is faster than it is being replaced by the soil forming processes

(ii) Way vegetation prevents soil erosion

- The leaf cover helps to reduce the force of raindrops which would otherwise loosen and remove soil particles if the force is not checked✓✓
- The rate of infiltration of rainwater into the soil is increased by vegetation cover thus reducing surface run off ✓✓
- Plant cover breaks the force of wind at the ground level and reduces the transportation of soil particles/ reduces the evaporation which would dry and loosen the soil✓
- Decayed vegetation matter provides humus which binds the soil particles together✓ 2 x 5 = 10mks

Total = 25 marks

9. a) (i) A country in Africa where temperate grassland is found

- South Africa✓1

(ii) 4 characteristics of temperate grasslands

- Treeless except along water courses ✓
- Grass is short and tough in the drier areas✓
- Grass is tall in the moist areas✓
- Grass withers in Autumn and dies in Winter✓
- Grass sprout in springs✓
- Grass is nutritious✓ 1 x 4 = 4mks

b) (i) Ways in which trees in the coniferous forests have adapted to the environmental conditions

- The trees have a conical shape and flexible branches to allow snow to slide off easily thus minimizing damage to the trees✓✓
- Most trees are evergreen so as to have maximum utilization of sunlight during the short drowing season ✓✓
- Needle like leaves help to reduce the loss of water from the trees in winter when there is no moisture to be absorbed from the soil✓✓
- The tree trunks are flexible to enable them sway without breaking during the strong winter winds.✓✓
- The leaves have a tough waxy skin which protects them from the winter cold✓✓
- The trees have a widely spread root system for utilizing moisture from the top soil since most of the time the subsoil is frozen✓ 2 x 4 = 8mks

(ii) Factors that determine zoning of mountain vegetation

- Altitude✓
- Aspect✓
- Slope✓
- Temperature✓
- - Moisture availability✓ 1 x 3 = 3mks

c) (i) Methods likely to be used in determining:

I. Age of trees

– Asking the local people / forest officer / when the trees may have been planted✓
– Observing the rings on the tree stump and counting them to find out the age of the trees✓
– By estimating the age of trees
– Refering to available records to know when the trees were planted 1 x 3 = 3mks

II. Height of trees

– By estimating the height ✓
– By measuring the exact height of samples of trees and generalising✓
– Calculate using the ratio of height of near short object in relation to height of its, relate to the shadow of the tree in relation to its height. 1 x 3 = 3mks

III. Tree species

– By walking through the forest observing and noting the various species ✓
– By interviewing the local people / forester✓
– By reading through available records✓ 1 x 3 = 3mks

Total = 25 marks

10.

a) (i) The zones marked

a – zone of permanent saturation/ phreatic zone✓
b – zone of intermittent saturation✓
c – zone of non – saturation ✓ 1 x 3 = 3mks

(ii) Sources of ground water

– Rain water✓
– Lake/ sea water✓
– Melt water✓
– Magmatic/ plutonic water✓ 1 x 4 = 4mks

b) Significance of ground water

– Sources of rivers – Many springs are sources of river that provide water for industrial/ domestic use ✓✓

– Ground water is used for irrigating the land all over the world thus promotes agriculture✓✓
– Ground water influences the development of settlements✓✓
– Hotsprings are a tourist attraction✓✓
– At the mouths of many hotsprings, valuable mineral salts are deposited and people exploit them for economic gain✓ 2 x 4 = 8mks

c) (i) Lakes that have formed due to crustal warping in East Africa

– Lake Victoria✓
– Lake Kyoga✓
– Lake Wamala✓
– Lake Kachira✓ 1 x 2 = 2mks

(ii) How crustal warping leads to the formation of lakes

– Earth movements cause crustal downwarping ✓
– This leads to the formation of a basin like depression✓
– Uplifting of landmasses around the depression diverted the flow of rivers into the depression causing reversed drainage✓
– Deposition onto the depression resulted in to further downwarping✓
– Water from the rivers accumulated in the depression to form a lake✓ 1 x 5 = 5mks

(iii) Other processes that lead to formation of lakes

– Faulting✓
– Vulcanicity✓
– Erosion✓
– Deposition✓
– Meteorite falling✓
– Human activities✓

1 x 3 = 3mks

Total = 25 marks

CASPA JOINT EVALUATION
GEOGRAPHY (312/2)
MARKING SCHEME

SECTION A (25 marks)
Answer All the Questions in this Section

1. a) ***Define the term mining.*** (2 marks)
   – Mining is the process of extracting mineral substance from the earth crust for commercial purposes
   b) State three forms in which minerals occur. (3 marks)
   – Beds and seams/layers
   – Veins and Lodes
   – Weathering products
   – Alluvial deposits
2. a) ***Distinguish between forest and forestry.*** (2 marks)
   A forest is a large tract of land covered by trees while Forestry is the science of developing and managing forests including cultivating them
b) ***Show three factors that influence the distribution of forests.*** (3 marks)
– High temperature causes fast growth of trees while low temperature causes slow growth.
– Dense forests are found on windward slopes of mountains because they are wetter than leeward slopes and they start at a lower level than on the leeward slopes.
– In temperate region slopes facing equator have dense forests because they are warmer
– There are dense forest where there is heavy precipitation while there is less forest cover consisting of stunted trees in areas with little precipitation.
– Deep soils support luxuriant growth of trees while shallow and infertile soils have stunted trees.

3. a) ***What is horticulture?*** (2 marks)
– is intensive cultivation of fruits, vegetables and flowers for sale
b) ***Give three economic factors that influence agricultural activities.*** (3 marks)
– availability of capital
– market prices of products
– availability of accessible transport facilities
– Competition from other world producers
– Government subsidies on cost of inputs
– Government taxation policy

4. a) ***Name two places where limestone are found in Kenya***. (2 marks)
– Bamburi in Mombasa county
– Athi River in Kajiado county
– Some parts of West Pokot county
– Some parts of Wajir county
– Some parts of Homabay county
b) ***List three uses of soda ash.*** (3 marks)
– Raw material in the manufacture of glasses and bottles
– Manufacture of soap and detergents Refining of petroleum
– Water softener and treatment works
– De-sulphurizing steel
– Paper making industries
– Textile industries
5. a) ***What is a dead ground?*** (2 marks)
   Is the area/part of a photograph hidden from the view of a camera by an object
   b) ***Mention three uses of a photograph.*** (3 marks)
– To show actual objects as they appear in real life
– Vertical aerial photographs are used in drawing maps
– To study physical features and their distribution in an area
– To deduce huma activities, climate and vegetation
– Provides important information on land use and geography of an area

- To 'bring' unfamiliar and distant landscapes in a classroom.
- To create awareness and understanding on geographical phenomena

SECTION B (75 marks)

Answer question 6 and any other two questions

6. Study the photograph below and use it to answer question (a).

(a) ***(i) Identify the type of photograph shown above.*** (1 mark)

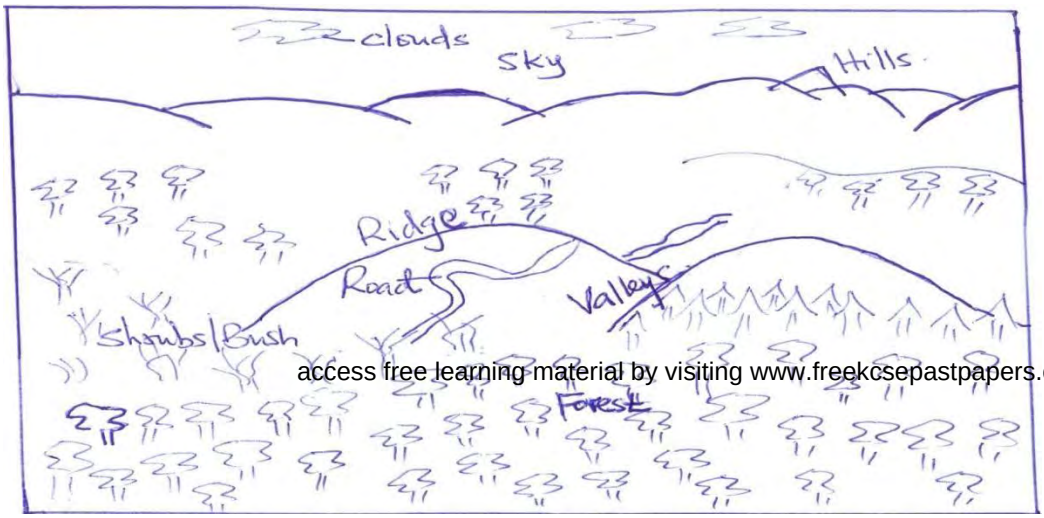
Ground oblique photograph

(ii) ***Describe the characteristics of the forest shown on the photograph.*** (4 marks)

- The forest has mixed species of trees.
- The forest in the foreground is dense/trees are close to each other.
- The forest in the foreground is natural.
- The forest has some shrubs/undergrowth.
- Trees are of different height.
- Some part of the forest has been cleared.

(iii) ***Draw a rectangle measuring 15 cm by 10 cm to represent the area by the photograph. On it sketch and label the main features shown on the photograph.***

(5 marks)



(b) ***(i) Name two indigenous softwood tree species in Kenya.*** (2 marks)

Podo
Cedar/Juniper
African pencil

(ii) ***Explain three problems facing forestry in Kenya.*** (6 marks)

- Rapid population increase has led to encroachment into the forested areas for settlement/agriculture leading to reduction of land under forest cover.
- Illegal logging by unlicensed timber merchants have led to depletion of indigenous tree species leading to their extinction.
- Prolonged drought have led to death of some tree species.
- Attack by pests/diseases have caused the destruction of valuable tree species.
- Occurrence of forest fires have led to destruction of large areas under forest cover.
- Excision of forest land by the government for settlement/human activities have led to reduction of land under forest cover.

(iii) ***State three factors favouring the development of softwood forests in Canada.*** (3 marks)

- The cool/cold climate/low temperature.
- Rugged/steep landscape in British Columbia
- Low population density
- Heavy rainfall on the windward slopes of the mountain ranges of British Columbia. Extensive land in Canada is available for the forest to grow.

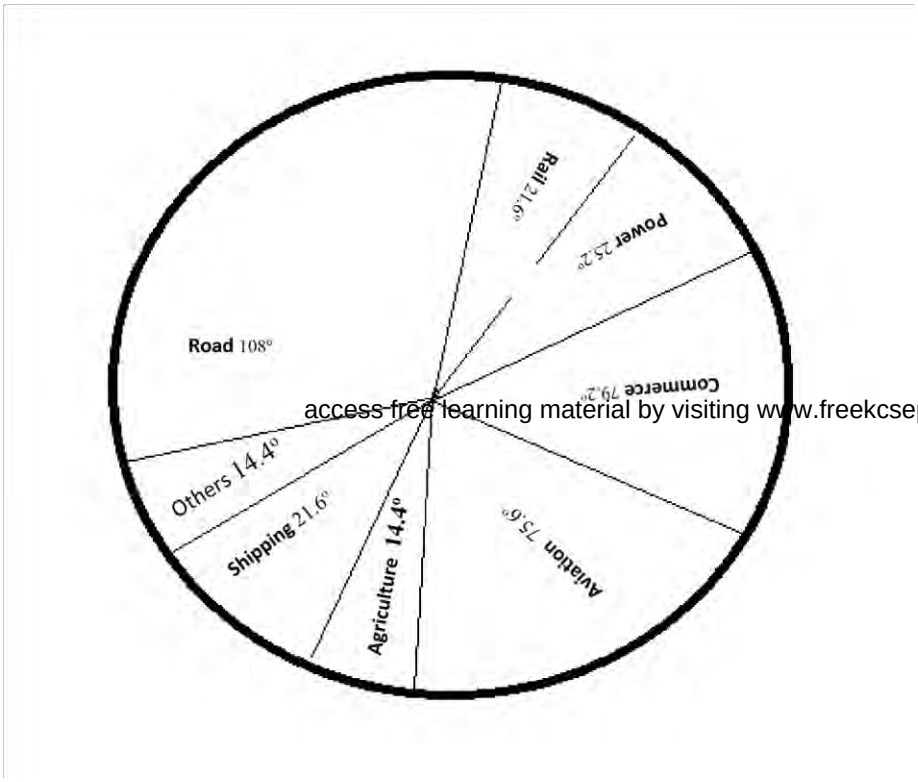
(c) ***Give four differences between softwood forests in Kenya and Canada.*** (4 marks)

- In Kenya harvesting of trees is done throughout the year while in Canada harvesting is done in winter and early spring.
- In Kenya harvesting is done selectively while in Canada clear/indiscriminate cutting of trees is done.
- In Kenya forest products are mainly sold locally while in Canada are mainly for export.
- Species: Most Kenyan softwoods are exotic while in Canada softwoods are indigenous.
- Areas where they are found: Most softwood forests are found mainly in the highlands while in Canada they are found both in the highlands and lowlands
- Maturity: Softwoods in Kenya grow faster due to the warm tropical climate while softwoods take longer to reach maturity due to the cool temperate climate.

7. ***Study the table below and answer the questions that follow***

a) i) Draw a simple pie chart to represent the information above. (6 marks)

Agriculture 4/100 x 360o = 14.4o
Aviation 21/100 x 360o = 75.6o
Commerce and industry 22/100 x 360o = 79.2o
Power 7/100 x 360o = 25.2o
Rail 6/100 x 360o = 21.6o
Road 30/100 x 360o = 108o
Shipping 6/100 x 360o = 21.6o
Others 4/100 x 360o = 14.4o



ii) ***What is the percentage of oil used in transport in the year 2010?*** (2 marks)
Transport sector = aviation + rail + road + Shipping
21 + 6 +30 + 6 = 63%

iii) ***Mention two demerits of using the method above to represent data.*** (2 marks)
Difficult to interpret if segments are many.
Tedious due to a lot of mathematical calculations and marking out of angles involved.
Can't be used to show trend/change over a certain period.
Small quantities or decimals may not be easily represented.

b) i) ***List three countries where oil is produced in the Middle East.*** (3 marks)

- Saudi Arabia
- Iraq
- United Arab Emirates
- Syria
- Kuwait
- Iran

ii) ***Explain three contributions of oil in the* economy of the countries in the Middle East** (6 marks)
- It generates a lot of revenue through export and also from royal1es
- It creates employment with high income hence raising the standards of living
- It s1mulates growth and development of urban centers
- It create very rich communi1es such as sheikdoms improving their living standards

c) ***Describe how petroleum oil is formed.*** (6 marks)
- Organic materials are transported to lowland and deposited in layers
- With time the layers accumulate to form sedimentary rocks
- Great heat and pressure is exerted on the rocks changing into petroleum
- Eventually petroleum is squeezed out through porous rocks
- Oil is then trapped in places between the rocks water and gas may also be trapped in rock layers

8. a) ***Name two wheat growing counties in Kenya*** (2 marks)
- Uasin Gishu
- Nakuru
- Narok
- Laikipia
- Trans Nzoia
- Nyandarua

b) ***State five conditions favouring wheat farming in Kenya.*** (5 marks)
- Warm temperatures in growing areas of 15-20◦c at least for three months which promotes growth of wheat and protects it against frost.
- Moderate rainfall of 1800-1270mm which promotes growth of wheat.
- High altitude of growing areas of 1500-2900m which reduces incidences by high humidity.
- Deep fertile volcanic soils which lead to high production.
- Gently or fairly level land for proper drainage and to allow mechanisation.
- Adequate labour for planting, weeding, application of fertilizers etc.
- Availability of transport facilities such as lorries and tractors to transport grains from the fields to the store and then to buying centres.

c) ***Describe wheat farming from planting to harvesting stage.*** (8 marks)
- Land is prepared by ploughing using tractor driven ploughs.
- It's then hallowed several times to allow weeds and stray wheat grains to be killed in the next harrowing.
- Manure and phosphate fertilizers are applied after the last harrow before sowing.
- Sowing is done using drills that are pulled by tractors or hands.
- Weeding is done by spraying or pulling using hands.
- The crop is regularly inspected for pests and diseases. Harvesting
- Wheat is harvested by cutting heads using sharp knifes for small scale farms or combined harvesters for large scale farms which also threshes the grain.
- The grain is pumped into trucks or tractors which move alongside the harvesters.
- It's taken to farm stores where it's passed through driers before it's packed for sale.

d) ***Give two selling points of wheat in Kenya.*** (2 marks)
- National Cereal and Produce Board
- Wheat millers
- Alcohol breweries
- Bakeries

e) ***Compare wheat farming in Kenya and Canada.*** (8 marks)
- There is mechanization in both countries.
- There are extensive farms in both countries.
- There is a dry sunny spell in both countries.
- Both countries experience the problem of pests and diseases.
- Wheat in both countries is grown in areas with gently sloping terrain.
- Wheat growing in both countries is affected by climatic hazards.
- In Kenya wheat is grown in highlands while in Canada it's grown in lowlands.
- In Kenya wheat is consumed locally while in Canada most of it is for export.

- Kenya experiences wheat shortage while Canada experiences overproduction.
- Canadian farmers specialize while Kenyan farmers carry out mixed farming.
- In Canada all work is mechanized while in Kenya there is usage of human labour.
- Kenya has no incentives such as subsidies such as in Canada.
- In Kenya farming is all year round but Canada experiences winters.
- In Kenya farming is carried out on plateaus while in Canada it's on plains.
- Canada produces more wheat grain than Kenya.
- Kenya grows spring wheat while Canada grows both spring and winter wheat.

9. ***a) Discuss nomadic pastoralism in Kenya under the following sub-headings***

i) The cattle breeds kept (2 marks)

The cattle breeds kept the pastoralists are mainly indigenous breeds such as Zebu and Boran.

ii) The pattern of movement (2 marks)

- Their movement is seasonal
- During the dry season the pastoralist migrate with the livestock to the highlands where there is pasture and water.
- During the wet season they move to the plains since pasture is available

iii) Marketing of the animals (3 marks)

- Some cattle are sold to slaughter houses/to individuals.
- Some pastoralists sell their livestock through community groups.
- Some livestock are sold to the livestock Marketing Department.
- Some pastoralists sell their animals to Kenya Meat Commission.

b) ***i) Give three reasons why nomadic pastoralists keep large heads of animals.*** (3 marks)

- It is a form of insurance against natural calamities such as diseases and drought.
- Animals are kept as a sign of wealth/prestige/social status.
- Animals are kept for use to pay dowry.
- Animals are used as a source of food/milk meat and blood.

ii) Explain four measures taken by the government of Kenya to improve beef cattle farming. (8 marks)

- It encourages the cross-breeding of traditional cattle breeds with exotic ones. This improves the quality of the animals/cross breeds are more resistant to diseases than pure exotic breeds.

- It strengthens community education to teach beef cattle farmers better livestock management.
- It sets up demonstration ranches for farmers to learn new trends in livestock management.
- It has constructed roads to make services accessible to farmers/make transportation of animals to markets easier.
- It encourages the replacement of the coarse grass with nutritious pasture to improve the quality of animals.
- It has sunk bore holes/dug wells/constructed dams to provide water for the animals.
- It has revived the Kenya Meat Commission (KMC), a government parastatal that buys animas from farmers for slaughter.

c) ***Give four challenges facing nomadic pastoralism in Kenya*** (4 marks)

- Shortage of water and pasture due to long dry spell.
- Pests and diseases which weaken animals
- Overstocking causing overgrazing leading to severe erosion.
- Lack of extension and veterinary services due to insecurity and constant movement.
- Low levels of education and culture leading to keeping pastures and poor quality animals.
- Poor pastures resulting from poor soils with most areas consisting of tuft grasses and bare land.
- Cattle rustling which causes loss of live and destruction of property.
- Inaccessibility of pastoral areas due to poor roads making the farmers unable to get their animals to the market.
- They rear indigenous cattle such as zebu and boran which mature slowly, yield little milk and have poor quality beef.
- Exploitation by middlemen due to lack of market information.
- Small local market due to sparse population.
- Competition from national parks leading to conflicts.

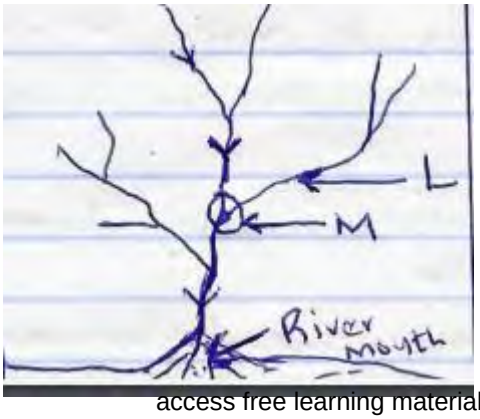
d) ***Name three indigenous breeds of dairy cattle reared in Kenya.*** (3 marks)

- Zebu
- Boran
- Sahiwal

MURANG'A SOUTH
312/1
GEOGRAPHY PAPER

SECTION A
Answer all the questions in this section

1. a) Name **two** planets without satellites. **(2mks)**
   b) State **three** characteristics of the inner core. **(3mks)**
2. a) Give **two** local winds that are found in Kenya. **(2mks)**
   b) State **three** conditions necessary for formation of dew. **(3mks)**
3. a) Define a lake. **(2mks)**
   b) State **three** reasons why some rift valley lakes have fresh water. **(3mks)**
4. a) Give **two** main components of soil. **(2mks)**
   b) State **three** factors that favour soil erosion. **(3mks)**
5. The diagram below shows a river and its tributaries. Use it to answer question 5(a)



a) Name the parts marked L and M. **(2mks)**
   L –
   M –
b) State **three** factors that influence river deposition. **(3mks)**

SECTION B
Answer question 6 and any other two in this section

6. Study the map of Kijabe provided (1:50,000) and use it to answer the questions that follow.
   a) i) State one method of representing relief used in the map extract.
      ii) Give the **six** figure grid reference of the cattle dip near Kenton. **(2mks)**
      iii) Give the longitudinal extent of the map extract. **(2mks)**
   b) i) Calculate the area to the south of the power line giving your answer in Km^2 **(2mks)**
      ii) Describe the settlement distribution in the area covered by the map extract. **(5mks)**
   c) Explain **three** factors favouring cattle rearing in the area covered by the map. **(6mks)**
   d) Draw a cross section from grid reference 270900 to 300960 using a scale of 1cm rep 20 Metres. On your cross section label and name
      - Tarmac road
      - Power line
      - R. Tongitongi **(8mks)**
7. a) i) Differentiate between weathering and mass wasting. **(2mks)**
      ii) Name **two** types of landslides. **(2mks)**
      iii) Other than water, identify three other weathering agents. **(3mks)**

   b) i) Explain how the following process of weathering take place.
   – Exfoliation **(3mks)**
   – Carbonation **(3mks)**

ii) Explain how the following factors influence mass wasting.
– Climate **(2mks)**
– Slope **(2mks)**
c) i) Describe the process of solifluction. **(3mks)**
ii) State two causes of soil creep. **(2mks)**
d) Students of Makuyu Boys carried out a field study on weathering in a limestone area.
i) Name **two** surface features they may have identified. **(2mks)**
ii) State **one** effect of weathering on human activities **(1mk)**

8. a) i) What is a piedmont glacier. **(2mks)**
b) Explain the following ways of ice movement.
i) Basal slip **(2mks)**
ii) Plastic flowage **(2mks)**
c) i) State **two** processes of glacier erosion. **(2mks)**
ii) Using a well labeled diagram describe the formation of crag and tail. **(7mks)**
iii) Apart from crag and tail state **two** glacial depositional features. **(2mks)**
d) Explain **three** positive effects of glaciations to human activities**.** **(6mks)**

9. a) i) Differentiate between orogenic and epeirogenic earth movement. **(2mks)**
ii) Describe the origin of continents according to the theory of plate tectonics. **(4mks)**
b) i) Apart from an over thrust fold, name three other types of folds. **(3mks)**
ii) Using well labeled diagrams, describe how Fold Mountains are formed. **(8mks)**
c) Explain **two** negative effects of folding to human activities. **(4mks)**
d) Students from your school intend to carry out a field study of a folded area.
i) State **two** preparations you need to do. **(2mks)**
ii) State **two** problems you are likely to encounter. **(2mks)**

10. a) i) Apart from stalagmites identify **two** underground features in a Karst scenery. **(2mks)**
ii) State **three** conditions necessary for the formation of a Karst landscape. **(3mks)**
iii) Describe the formation of a stalagmite. **(5mks)**
b) i) Name **two** water erosional features on a desert. **(2mks)**
ii) Describe the formation of a rock pedestal. **(5mks)**
c) Explain **four** significance of desert land forms to human activities. **(8mks)**

MURANG'A SOUTH
312/2
GEOGRAPHY PAPER 2

SECTION A: ANSWER ALL QUESTIONS IN THE ANSWER BOOKLET PROVIDED.

1 a) Apart from draining swamp, state **two** other methods used in reclaiming land in Kenya. 2mks
b) State **three** benefits that resulted from the reclamation of the Yala swamp. (3mks)
2. a) Define ecotourism (2mks)
b) Give **three** tourist attractions found in Turkana County. (3mks)
3 a) State **three** problems facing hydro-electric power projects in Kenya. (3mks)
b) State **two** ways in which Kenya has benefited from the development of geothermal power. (2mks)
4 a) State **three** physical conditions that favour large scale maize cultivation in Trans-Nzoia district in Kenya (3mks)
b) State **three** problems facing maize farming in Kenya (3mks)
5 a) Why is it necessary to conserve water? (2mks)
b) How does terracing help in water conservation (2mks)

SECTION B: Answer question 6 and any two other questions from this section

6. The photograph provided shows means of railway transport used in Kenya. Use it to answer questions a & b.

a i) What evidence in the photograph shows that it is a ground general view type of photograph (3mks)

ii) Draw a rectangle measuring 15cm by 10cm to represent the area of the photograph (1mk)

iii) On it sketch and label four main features (4mks)

b) i) Explain **four** reason why there are few rail links among African countries (8mks)

ii) Explain **three** measures which should be taken to improve inland water transport in Africa.

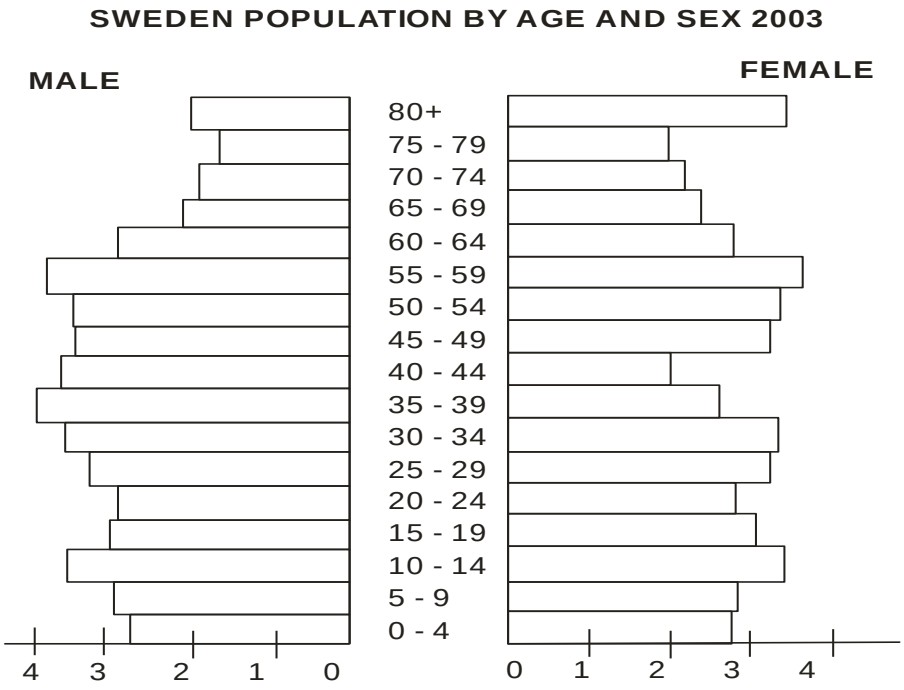
 (6mks)

iii) State **three** advantages of containenzation. (3mks)

7 a

i) Give **three** documents from where information on population data is obtained (3mks)

ii) The pyramid below represent population structure in Sweden



Describe the characteristics of population represented by the pyramid (3mks)

b i) Explain **four** positive effects of low population growth rate in a country. (8mks)
ii) Give **three** reasons it is necessary for the government of Kenya to carry out population census. (3mks)

c. Explain **four** causes of rural urban migration in Kenya (8mks)

8 a i) Name **three** manufacturing industries found in Thika town. (3mks)
ii) State **three** reasons why paper milling industries are located near rivers (3mks)

b i) Explain **four** causes of the decline in the textile industry in Kenya. (8mks)
ii) Outline **five** reasons why the County government of Murang'a should encourage foreign investors to establish Juakali industries in the county. (5mks)

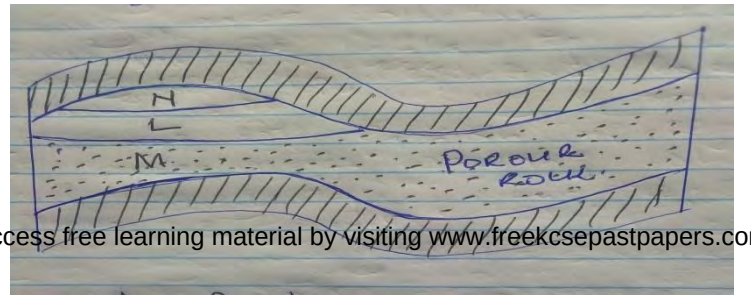
c) Explain **three** problems arising from industrialization in Kenya. (6mks)

9 a i) Define the term fisheries (2mks)
ii) Name **three** fresh water lake in Uganda where fishing takes place (3mks)

b) Explain how the following factors favour fishing along the coast of North West Atlantic fishing ground.
(i) Indented coastline (2mks)
(ii) Ocean Currents (2mks)

c i) Explain **four** reasons why in East Africa, fresh water fishing is more developed than marine fishing. (8 Marks)
ii) Outline **four** similarities between fishing in Kenya and Japan (8mks)

11. a) The diagram below shows the occurrence of petroleum in the earth's crust. Use it to answer question a (i)



i) Name the substance in the area, labeled L,M and N. (3mks)
ii) Give **three** by products obtained when crude oil is refined (3mks)

b) State five negative effects of open cast mining on the environment (4mks)

c i) Describe the stage involved in the processing of trona from lake Magadi. (7mks)
ii) Explain four ways in which Kenya has benefited from mining of trona on lake Magadi. (8mks)

MURANG'A SOUTH
321/1
GEOGRAPHY PAPER 1

MARKING SCHEME

1. a) Name two planets without satellites. (2mks)
– mercury
– venus (2×1=2mks)

b) State three characteristics of the inner core. (3mks)
– it is made up of iron
– it has very high temperatures estimated to be between 4500°C
– it has average density of between 16-17gm/cc/has very high density
– it is solid in nature (any 3×1mk=3mks)

2. a) Give two local winds that are found in Kenya. (2mks)
- anabatic winds
- katabatic winds
- sea breeze
- land breeze (Any 2×1mk=2mks)

b) State three conditions necessary for formation of dew. (3mks)
- day time should be warm to facilitate evaporation
- the air should be calm
- the temperatures should be low below dew point
- the sky should be clear/cloudless at night. (Any 3×1mk=3mks)

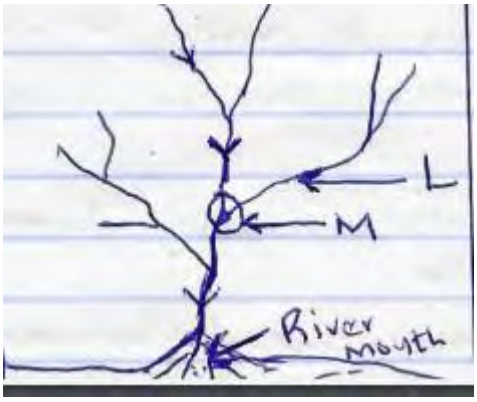
3. a) Define a lake. (2mks)
- It is a body of water which occupies a basin, depression or hollow on the earth's surface. (1×2=2mks)

b) State three reasons why some rift valley lakes have fresh water. (3mks)
- They have surface and subterranean outlets through which excess salts deposits are carried away.
- They have regular inflow of fresh water from rivers which dilute the salts, keeping the water fresh.
- They are situated in areas of high rainfall, which keep this water fresh
- They are isolated in areas of low temperatures, resulting in low rates of evaporation, therefore low salt concentration. (Any 3×1=3mks)

4. a) Give two main components of soil. (2mks)
- inorganic matter
- organic matter
- soil water/moisture
- soil/air (Any 2×1=2mks)

b) State three factors that favour soil erosion.
- Steep slope
- Fine textured soil e.g. volcanic ash
- Absence of vegetation cover
- High rainfall (Any 3×1=3mks)

5. The diagram below shows a river and its tributaries. Use it to answer question 5(a)



a) Name the parts marked L and M. (2mks)

L – Tributary

M – Confluence **(2×1mk=2mks)**

b) State three factors that influence river deposition. (3mks)

- Reduction/reduced gradient/velocity
- Decrease in river volume
- Nature and amount of load
- Presence of obstacles in the river channel
- Widening of the river channel
- River entering into a calm water body/lake/sea
- Freezing of river water. **(Any 3×1mk=3mks)**

SECTION B

Answer question 6 and any other two in this section

6. Study the map of Kijabe provided (1:50,000) and use it to answer the questions that follow.

a) **i) State one method of representing relief used in the map extract**.

- Contours
- Trigonometrical station and spot height. **(1×1mk=1mk)**

ii) Give the six figure grid reference of the cattle dip near Kenton. (2mks)

- 279014 **(1×2mks=2mks)**

iii) Give the longitudinal extent of the map extract. (2mks)

- From 36º 30ºE to 36º 45^{1}E **(1×2mks=2mks)**

b) i) Calculate the area to the south of the power line giving your answer in Km^2 (2mks)

- Full squares =16
- Half squares =28 =28/2=14 full squares.

Total area =16+14=30km^2 ($^{+}$0.5km^2) **(1×2mks=2mks)**

ii) Describe the settlement distribution in the area covered by the map extract. (5mks)

- There are no settlements within the Ewaso Kadong valley
- There are nucleated settlements in the markets/shopping centres/villages
- Some areas with steep slopes/ridges/river valleys/kijabe hill have fewer or no settlement
- There are fewer settlement within the forest

- Kinale/Kinari forest station has dense settlement.
- There are no settlements within the plantations
- There are few settlements to the west of Naivasha-Narok road.
- The area covered by the map is generally sparsely settled.
- There are linear settlements along some roads.

(Any 5×1mk=5mks)

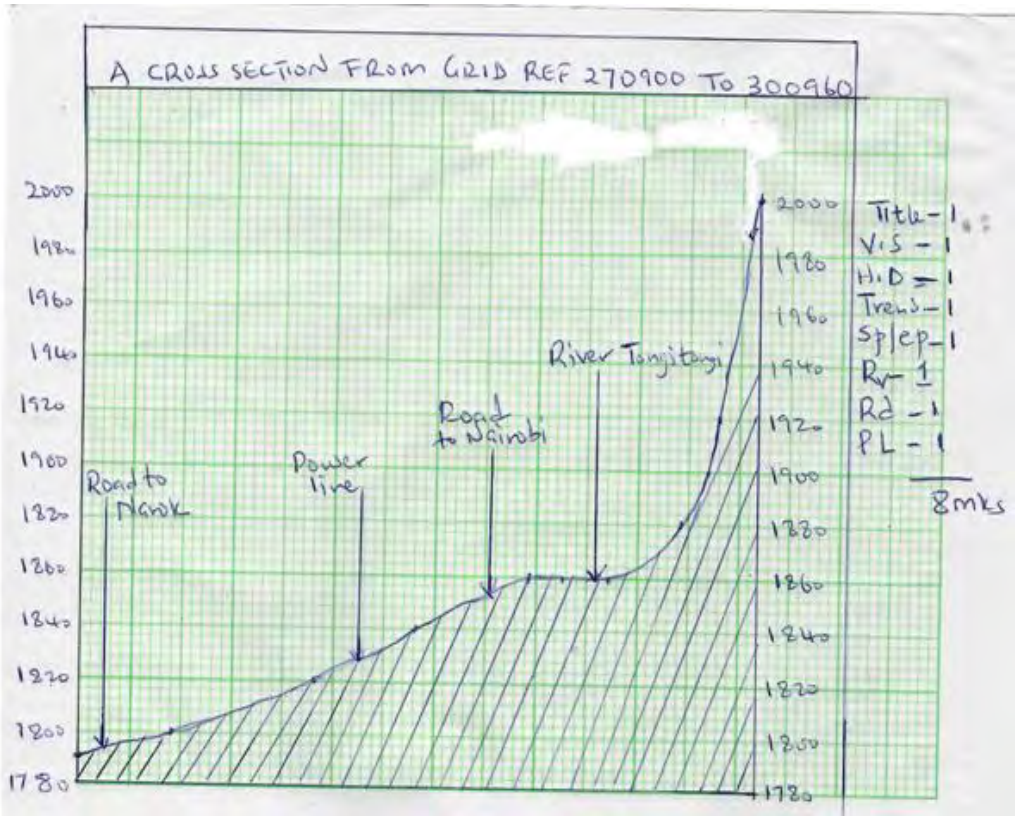
c) Explain three factors favouring cattle rearing in the area covered by the map. (6mks)

- The presence of scrub and scattered trees show that there is natural pasture for cattle.
- The presence of many rivers/sources of water show that there is adequate water for cattle.
- The area has high attitude/above 1000m which provide cool conditions suitable for cattle rearing.
- The many cattle dips for controlling ticks/parasites which attack cattle show that there is access to veterinary services.
- There are large tracks of land with few settlements ensuring extensive areas available for grazing.
- Availability of transport as evidenced by roads/railway line for movement of cattle/cattle products.
- Dense settlements in some areas provide market for cattle/cattle products

(Any 3×2mks=6mks)

d) Draw a cross section from grid reference 270900 to 300960. On your cross section label and name

- Tarmac rod
- Power line
- River Tongitongi



T- Title ,V.S- vertical scale, H.D- Horizontal distance, ST/EP- Starting point(1780- 1800m) And End point (2000m), Rv- River, Rd- road(Any road), PL- Power line

7. a) i) Differentiate between weathering and mass wasting. (2mks)

– Weathering is the mechanical breakdown or chemical decay of rocks in situ while mass wasting is the movement of weather rock materials down a slope under the influence of gravity. (2mks)

ii) Name two types of landslides. (2mks)

– slump
– debris slide
– debris fall
– rock fall
– rock slide (Any 2×1mk=2mks)

iii) Other than water, identify three other weathering agents. (3mks)

– heat
– dissolved substances
– plants
– animals
– people
– gases eg. Co_2, O_2 (Any 3×1mk=3mks)

b) i) Explain how the following process of weathering take place.
- Exfoliation

– During the day, the rock surface is heated more than the inner layers because rocks are bad conductor of heat. The surface expands more than inner layers creating a strain between the two layers.
– At night the surface cools faster than the inner layers.
– With time the outer layer develops cracks and later frees off and pieces of rock fall down by gravity. (3mks)

Carbonation

– Rain water mixes with carbon dioxide in the atmosphere to form a weak carbonic acid.

- The carbonic acid reacts with calcium carbonate in calcareous rocks (limestone, dolomite, chalk) to form calcium bicarbonate.
- Calcium carbonate is soluble and it is removed from the rock in solution. (3mks)

ii) Explain how the following factors influence mass wasting.

Climate

- Heavy rain or alternate freeze and thaw periods encourage movement of materials
- Areas with high rainfall records have wet materials which are easily moved under gravity.

(any 2×1mk=2mks)

Slope

- There is faster movement of materials on steep slopes compared to gentle slope/low lying plain.

(1×2mks=2mks)

c) i) Describe the process of solifluction. (3mks)

- it occurs in mountaneous and cold climate areas
- in cold seasons, the soil water get frozen. When the warm season sets in frozen water in the top soil thaws and subsoil remains frozen.
- The top soil gets saturated with water, making it slide over the frozen subsoil. This movement is called solifluction. (1×3mks=3mks)

ii) State two causes of soil creep. (2mks)

- Ploughing downhill cause soil to shift down slope.
- Earthquakes shakes the crustal rocks causing soil particles to move downwards
- Temperature changes makes soil particles to expand and contract
- Trampling and burrowing of animals. (any 2×1mk=2mks)

d) Students of Makuyu Boys carried out a field study on weathering in a limestone area.

i) Name two surface features they may have identified. (2mks)

- Grikes
- Clints
- Dolines
- Swallow holes/sink holes
- Uvala
- Polje
- Dry river valley. (Any 2×1mk=2mks)

ii) State one effect of weathering on human activities (1mk)

- It leads to formation of soils useful for agriculture.
- It may break rocks which contain minerals which man can exploit
- It produces clay and bauxite which can be used in pottery and manufacture of aluminium
- It weaken rocks which moltens quarrying easier (1MK)

8. a) i) What is a piedmont glacier. (2mks)

- This is a glacier formed when several valley glaciers flow and coalesce downhill to the lowland to form a large mass of ice. (2mks)

ii) State two conditions favouring the formation of glaciers

- existence of very low temperatures below 0°C which allow formation of ice and snow
- Abundant and constant supply of snow fall that exceeds snow melting. (2×1mk=2mks)

b) Explain the following ways of ice movement. (2mks)

i) Basal slip

- this is where a glacier slides/slips over the overlying rocks due to gravity
- Melt water at the base of the glacier resulting from pressure exerted by the glacier at the base acts as a lubricant between the ice and at the underlying rock. (2×1-2mks)

ii) Plastic flowage (2mks)

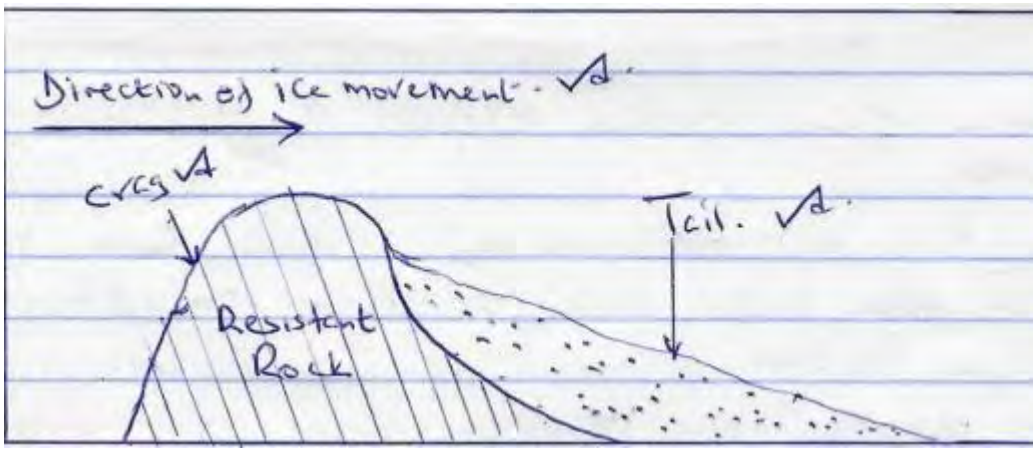
- This is the flow of ice as a viscous liquid resulting from thawing of ice in the lower layers caused by the weight of the overlying layers of ice. (1×2=2mks)

c) i) State two processes of glacier erosion. (2mks)

- Plucking
- Abrasion (2×1=2mks)

ii) Using a well labeled diagram describe the formation of crag and tail. (7mks)

- A resistant rock (crag) lib on the path of a glacier
- A glacier passes over and around the rock
- The glacier is only able to slightly erode the rock
- The materials that are carried by the glacier are deposited on the lee side of the resistant rock (downstream side)
- The upstream side of the resistant rock is eroded slightly forming the crag and the downstream side when there is deposition forms the tail



(Explanation 4mks diagram 3Mrks= 7Mks)

iii) Apart from crag and tail state two glacial depositional featutes. (2mks)

- Terminal moraine
- Drumlins
- Kame
- Outwash plain
- Esker
- Eratics
- Till/boulder clay
- Boulder train **(Any 2x1mk=2mks)**

d) Explain three positive effects of glaciations to human activities.

- Some till and outwash plains form part of the world's fertile areas for crops production eg the Canadian prairies.
- Some glacial lakes provide natural transportation routes eg the Great lakes of North America
- Waterfalls from hanging valleys can be used to produce hydroelectric power (HEP). The power can be used to run machines industries.
- Erosion by continental ice sheets expose minerals such as iron and gold in the Canadian Shield, for easier exploitation.
- Melt water from glaciers gives rise to rivers that provide water for irrigation, domestic/industrial use, products on of HEP
- Glaciated highlands especially mountains are attraction sites for tourists. Winter sports such as skiing are major attractions on the Alps in Switzerland.
- Sand for building and construction is excavated from outwash plains, eskers and kames. **(any 3x2mks=6mks)**

9. a) i) Differentiate between orogenic and epeirogenic earth movement. (2mks)

– orogenic earth movements are the horizontal/lateral displacements occurring within the crustal rocks due to tectonic forces while epeirogenic earth movements are the vertical displacements occurring within the crystal rocks due to tectonic movements. **(1x2mks=2mks)**

ii) Describe the origin of continents according to the theory of plate tectonics. (4mks)

– the earth lithosphere/crust is divided into several rigid blocks called tectonic plates.
– The plates float on semi molten mantle that lies beneath
– The plates move horizontally due to convectional currents within the mantle in three ways; towards one another, away from one another or side by side parallel to each other
– The plates form distinct boundaries along the plates margins. Each continent sits on a tectonic plate.

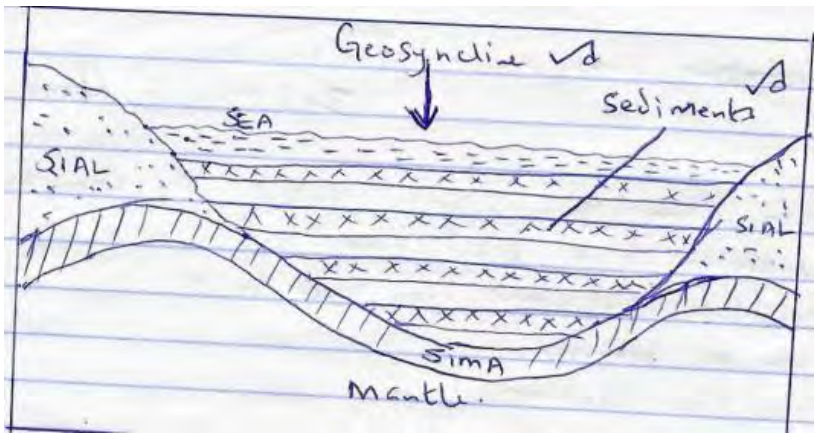
(4x1mk=4mks)

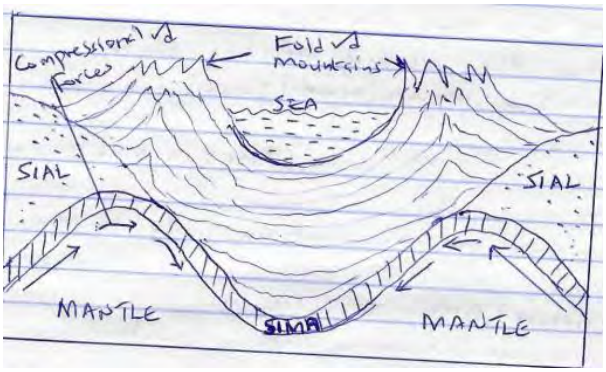
b) i) Apart from an over thrust fold, name three other types of folds.

– Simple fold/symmetrical fold
– Asymmetrical fold
– Over fold
– Isoclinals fold
– Recumbent fold
– Over thrust fold/nape fold
– Anticlinorium and synclinorium complex fold. **(3 x 1 = 3Marks)**

ii) Using well labeled diagrams, describe how Fold Mountains are formed. (8mks)

– Compressional force lead to the formation of a large depression called a geosynclines
– Water collects in the geosynclines to form a sea.
– Prolonged and extensive erosion occurs on the surrounding higher lands and the sediments are deposited in geosynclines forming a thick deposit
– The weight of the sediments causes subsidence of the geosyncline leading to accumulation of more sediments to great thickness.
– Further subsidence of the geosyncline triggers off compressional forces which cause the sediments to fold.
– The folded layers of sediments in the geosyncline are thrust upwards to form Fold Mountains along the edges of the geosynclines.





Text – 4
Diagrams – 4 = 8mks

c) Explain two negative effects of folding to human activities.

- Leeward slopes of fold mountains receive little or no rainfall/experience dry conditions which discourage settlement/crops farming.
- The rugged nature of folded landscape discourage settlement
- Fold mountains are barrier to transport/make construction of transport lines expensive/difficult.

(Any 2x2=4mks)

d) Students from your school intend to carry out a field study of a folded area.

i) State two preparations you need to do. (2mks)

- Seek for permission
- State the objectives
- Formulate the hypothesis
- Prepare a working schedule
- Divide the class into groups
- Gather the necessary tools/equipment
- Conduct a reconnaissance/previsit **(any 2x1=2mks)**

ii) State two problems you are likely to encounter. (2mks)

- Fatigue
- Accidents/falls
- Bad weather conditions eg heavy downpour
- Attack by dangerous animals/insects
- Uncomperative respondents.
- Difficulties in climbing activities. **(any 2x1mk=2mks)**

10. a) i) Apart from stalagmite Identify two underground features in a Karst scenery.(2mks)

- Limestone pillars
- Cave
- Stalagmite
- Stalactite **(any 2x1mk=2mks)**

ii) State three conditions necessary for the formation of a Karst landscape. (3mks)

- The surface rock should be thick limestone, chalk or dolomite to allow solubility of water.
- The rock should be hard, well jointed to allow rainwater to percolate through the lines of weaknesses
- The place should be hot and humid to facilitate chemical weathering/carbonating/solution to take place.
- The water table should be far below the surface to allow formation of features

(Any 3x1mk=3mks)

iii) Describe the formation of a stalagmite. (5mks)

- Rainwater dissolves/absorbs carbon dioxide (Co_2) in the atmosphere to form weak carbonic acid. (H_2CO_2)√
- Carbonic acid falls on a jointed limestone rock below which is a cave√.
- The carbonic acid percolates through the joints reacting with calcium carbonate in the limestone rock forming calcium bicarbonate/calcium hydrogen carbonate which is soluble.√
- The solution drips to the floor of the cave from the roof.√
- Some of the water evaporates and CO_2 is released leaving behind deposits of calcium carbonate which grows upwards from the floor of the cave.√
- With time, the calcium carbonate accumulate and eventually lead to the formation of fingerlike projections on the floor of the cave called stalagmites.√

(5mks) NB Sequence must be followed.

(At the last point must be mentioned to score max points)

b) i) Name two water erosional features on a desert. (2mks)

- Landscape
- Mesas/buttes
- Gorges/canyons
- Wadins
- Dry river valleys/laghas
- Inselbergs **(any 2x1mk=2mks)**

ii) Describe the formation of a rock presestal. (5mks)

- A rock with alternating hard and soft layers lies on the path of wind.
- Wind abrasion attacks the rock eroding the softer layers faster than the hard layers.
- Abrasion is greater near the ground due to the heavier materials transported by wind
- The softer layers are eroded to form hollows and the hard layers are left as protrusions
- This leads to the formation of an irregular rock pillar with a narrow base called a rock pedestal.

c) Explain four significance of desert land forms to human activities. (8mks)

- Desert features eg Zeugen, yardangs, rockpedestals, are tourist attraction sites. Tourists bring in foreign exchange.
- Deflation hollows may contain water used for domestic us, irrigation/watering livestock.
- Loess resulting from wind depositions forms fertile soils for crops farming.
- Seasonal streams in the deserts may be dammed to provide water for irrigation during dry seasons
- Desert landscape/areas are ideal sites for testing militants weapons and military training.
- Sand dunes may cover roads making transport difficult
- The wadis/bad lands make transport facilities difficult and expensive to construct.
- The desert has high solar isolation which can be harness for solar energy production. This can be used to light homes and run industries.
- Desert scenery provide good site for shooting films
- Flash floods in the desert areas cause deaths when people are carried away by water that furiously flow through the wadis
- Rocky deserts surfaces discourage settlements. **(any 4x2mks=8mks**)

M O K A S A 2 J O I N T E X A M I N A T I O N
312/1
GEOGRAPHY PAPER 1
DECEMBER 2021

SECTION A

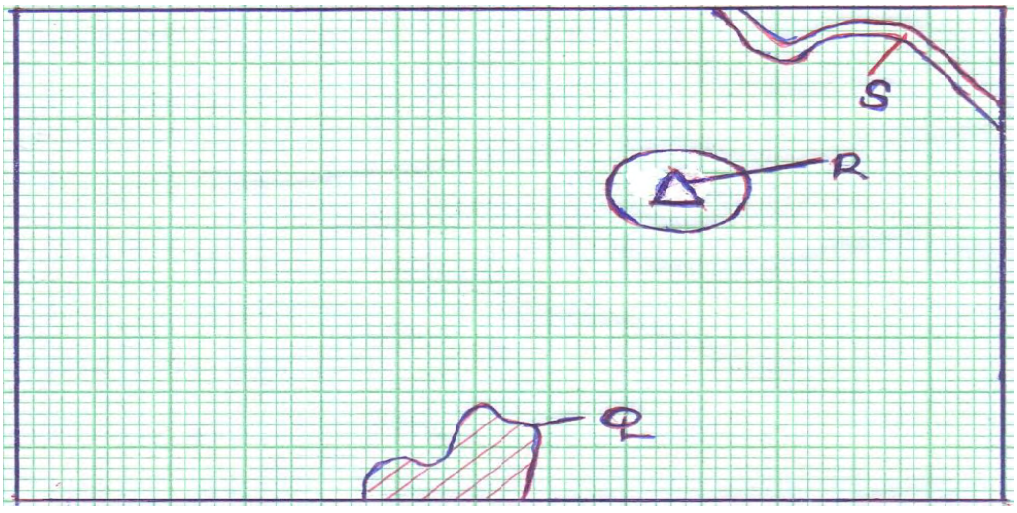
*Answer **all** the questions in this section*

1. (a) Define Physical Geography. **(2 marks)**
   (b) State **three** importance of studying Geography. **(3 marks)**
2. (a) Distinguish between weather and climate. **(2 marks)**
   (b) Give **three** characteristics of ITCZ. **(3 marks)**
3. (a) List **three** sources of sedimentary rocks. **(3 marks)**
   (b) Give **two** examples of mechanically formed sedimentary rocks. **(2 marks)**
4. (a) Describe **two** ways in which biological weathering takes place. **(2 marks)**
   (b) Identify **three** benefits of weathering to human activities. **(3 Marks)**
5. (a) What is a river confluence? **(2 marks)**
   (b) List **three** processes of river erosion. **(3 marks)**

SECTION B

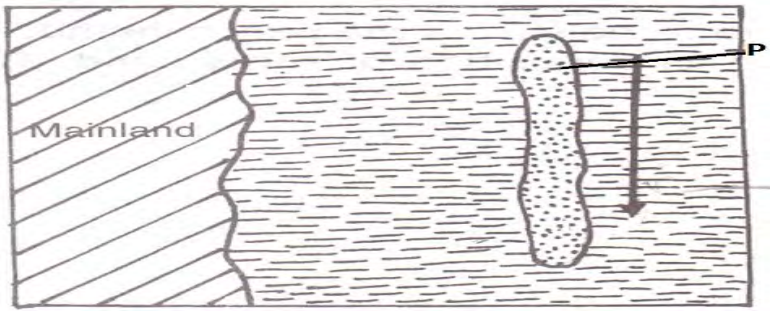
Answer question 6 and any other two questions in this section

6. Study the map of Yimbo 1: 50000 (sheet 115/1) provided and answer the following questions.
   (a) (i) Give the latitudinal extent of the map. **(2 marks)**
   (ii) What is the highest point of Usengi Hill? **(2 marks)**
   (iii) Measure the length of the provincial boundary to the North West of the area covered by the map. Give your answer in kilometers. **(2 marks)**
   (iv) What is the area of Western Province in the area covered by the map? **(2 marks)**
   (b) The rectangle below represents the area in the map extract bounded by Eastings 30 and 39 and Northings 90 and 96.



   Name the features marked **Q**, **R** and **S**. **(3 marks)**
   (c) Describe the characteristics of River Yala. **(6 marks)**
   (d) (i) Describe the relief of the area covered by the map. **(4 marks)**
   (ii) Explain **two** factors which have influenced the distribution of Settlement in the area covered by the map. **(4 marks)**
7. (a) (i) What is folding? **(2 marks)**
   (ii) State **three** factors that influence folding. **(3 marks)**
   (b) (i) Apart from over thrust fold, name four other types of rocks. **(4 marks)**
   (ii) With the aid of well-labelled diagrams, describe the formation of an Overthrust fold. **(8 marks)**
   (c) Explain **four** significance of Fold Mountains to human activities. **(4 marks)**

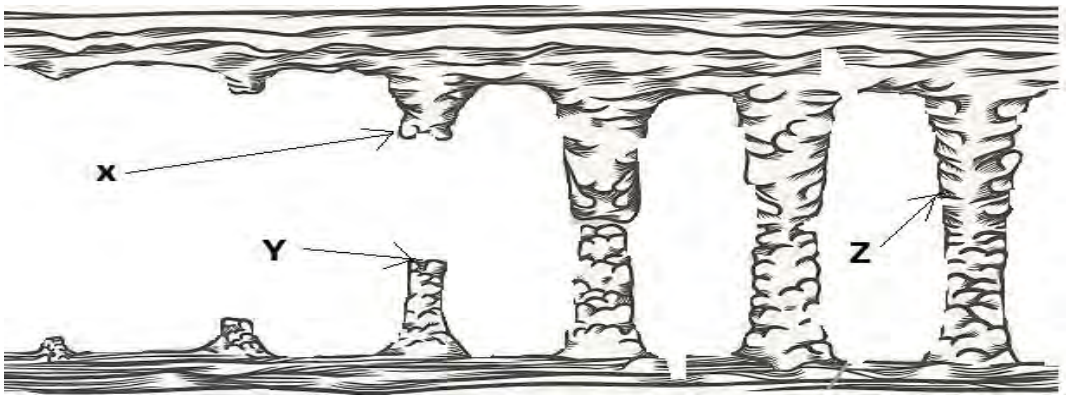
8. (a) Give **three** ways in which the shape of landmasses may influence the Movement of ocean waters. **(3 marks)**
   (b) Distinguish between Constructive waves and the Destructive waves . **(2 marks)**
   (c) Describe **three** processes of wave erosion along the coast. **(9 marks)**
   (d) The diagram below shows a wave deposition feature.



   (i) Identify the feature labelled **P**. **(1 mark)**
   (ii) State **two** factors that favors the formation of the feature named in (i) above **(2 marks)**
   (e) Students from Gedi Secondary School conducted a field study on coastal landforms.
   (i) Identify **three** objectives for their study. **(3 marks)**
   (ii) Give **three** preparations they made for their study. **(3 marks)**
   (iii) Mention **two** methods they might have used to collect information before the actual field study. **(2 marks)**

9. (a) (i) Define underground water. **(2 marks)**
   (ii) Explain how the following factors influence availability of Underground water. **(2 marks)**
   – Slope of the land
   – Vegetation cover
   (b) (i) State **three** conditions that are necessary for the formation of an Artesian well. **(3 marks)**
   (ii) State **three** problems that are associated with an artesian well. **(3 marks)**

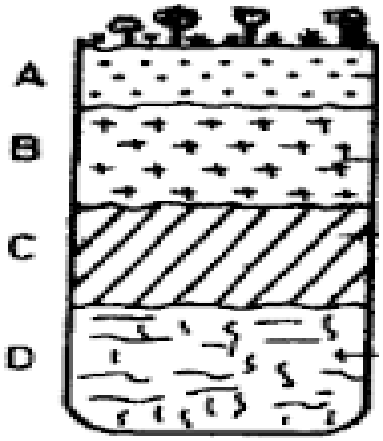
   (c) (i) Differentiate between a Karst scenery and Karst region. **(2 marks)**
   (ii) The diagram below shows the underground features in limestone areas.



   Identify the features marked **X**, **Y** and **Z**. **(3 marks)**
   (d) Form four students of a school are planning to carry out a field study on a Karst landscape around their school.
   (i) Name **two** surface features are likely to identify. **(2 marks)**
   (ii) Give **three** reasons why they needed a working schedule. **(3 marks)**
   (iii) Why was it necessary for them to divide into **groups** during their study? **(3 marks)**

10. (a) What is soil? **(2 marks)**
   (b) (i) Name **three** components of soil. **(3 marks)**
   (ii) Describe how the following factors influence the formation of soil.
   - Topography **(3 marks)**
   - Nature of the parent rock **(3 marks)**
   (c) (i) Define soil profile. **(2 marks)**

(ii) The diagram below represents a well-developed soil profile. State the characteristics of horizon **A**.
(4 marks)



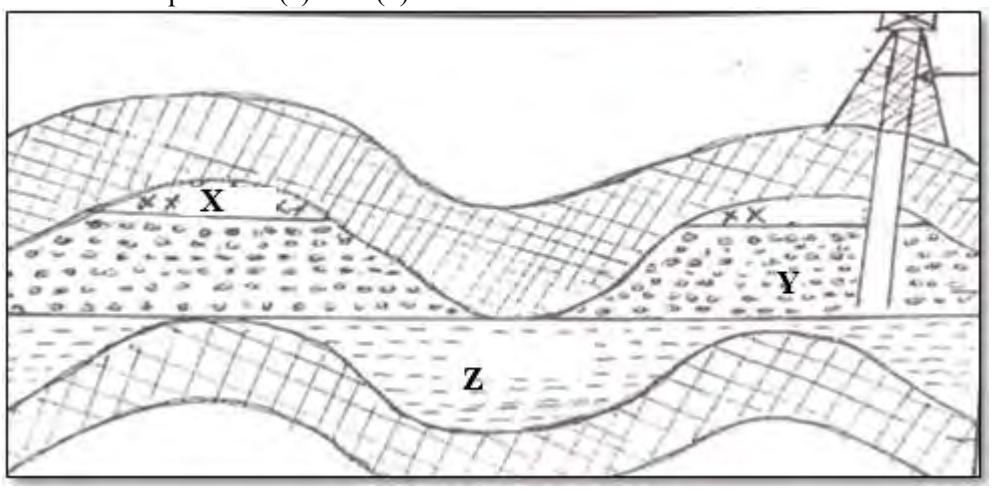
(d) Explain **four** ways in which farming practices may lead to loss of soil fertility. **(8 marks)**

MOKASA II EXAMINATION 2021
GEOGRAPHY PAPER 2
DECEMBER 2021

SECTION A:
Answer all questions in this section.

1. (a) What is human and Economic Geography (**2marks**)
   (b) Name **three** sub-branches of geography that makes up social sciences. (**3marks**)
2. The diagram below shows the occurrence of petroleum on the earth crust.

   Use it to answer questions (a) and (b)



   (a) Name the substance in the areas labeled **X**, **Y** and **Z** (**3 marks**)
   (b) Give **two** by products obtained when crude oil is refined. **(2 marks)**
3. (a) Name **two** indigenous softwood trees grown in Kenya **(2 marks)**
   (b) State **three** effects of deforestation in the environment. **(3 marks)**
4. (a) Diffenciate between fishing and fisheries **(2 marks)**
   (b) Name **three** types of fishing **(3 marks)**
5. (a) List **two** man-made hazards. **(3 marks)**
   (b). State **three** effects of diseases to the economy of Kenya **(3marks)**

SECTION B

Answer Question **6** And Any Other **Two** From The Remaining.

6. The table below represents agricultural crops exported from Kenya between 2009 - 2012

CROP /YEAR	***2009***	***2010***	***2011***	***2012***
HORTICULTURE	16,000	24,000	20,000	28,000
TEA	36,000	40,000	32,000	34,000
COFFEE	20,000	12,000	8,000	4,000

(a) Using a scale of ***1cm to represent 4,000 tones***, draw a comparative bar graph to represent the data. **(8marks)**

(b) (i) Describe the trend in coffee export earnings from **2009-2012**. **(2marks)**

(ii) Give **four** possible reasons for the trend observed. **(4marks)**

(c) (i) Identify **three** countries in Kenya producing coffee. **(3marks)**

(ii) State **four** physical problems faced by coffee farmers in Kenya. **(4marks)**

(d) Outline **four** importance of coffee farming in Kenyan economy **(4marks)**

7. (a) (i) Define land reclamation **(2marks)**

(ii) A part from irrigation name **three** other methods of land reclamation. **(3marks)**

(b) (i) Identify **two** aims of setting up Perkerra irrigation scheme **(2marks)**

(ii) State **three** physical factors that influences the establishment of Perkerra irrigation scheme **(3marks)**

(iii) State **three** problems facing Perkerra irrigation scheme **(3marks)**

(iv) Name **four** crops grown under Perkerra irrigation scheme. **(4marks)**

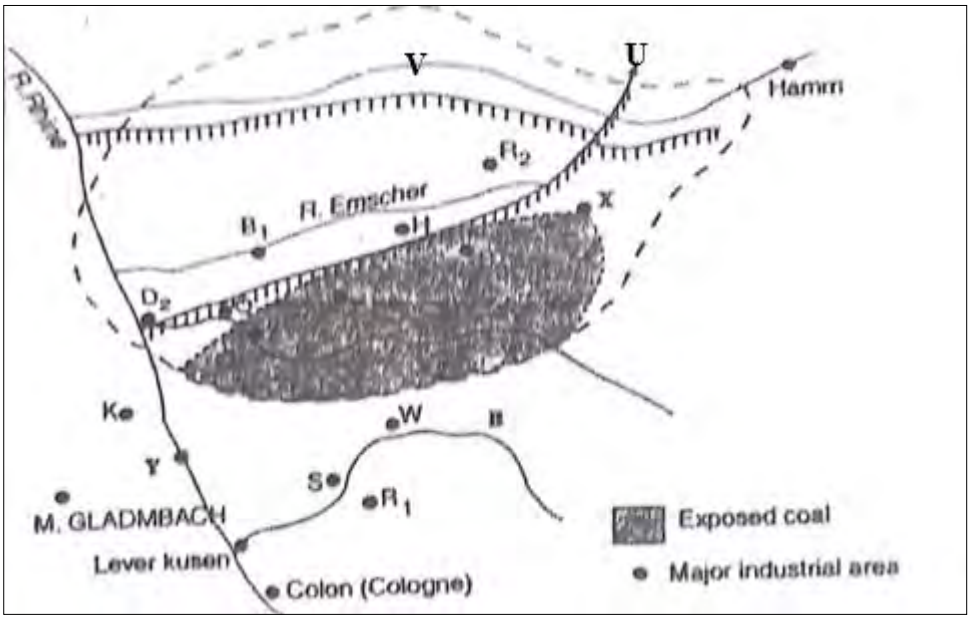
(c) Explain **four** differences between land reclamation in Kenya and Netherlands **(8marks)**

8. (a) (i) Define the term industrialization **(2marks)**

(ii). Give **four** characteristics features of cottage industry in India **(4marks)**

(iii) State **four** problems facing Jua kali industry in Kenya **(4marks)**

(b) Study the map of the Ruhr region below and answer the following questions.



(i) Name **four** minerals found within the Ruhur region **(4marks)**

(ii) Name **(3marks)**

– The canal mark **U**

– The river marked **V**

– The town marked **Y**

(iii) Explain **four** factors that led to the growth of iron and steel industry in the Ruhr region **(8marks)**

9. (a) (i) Define Ecotourism **(2marks)**
(ii) Distinguish between a national park and a game reserve **(4marks)**
(iii) Identify **three** main inland attractions in Kenya **(3marks)**
(b). Explain how the following problems affect tourism in Kenya
(i) Poaching **(2marks)**
(ii) Terrorism **(2marks)**
(iii) Environmental pollution **(2marks)**
(c) Give **three** similarities between tourism in Korea and Switzerland **(6marks)**
(d) Your geography class intend to carry out a field study in a national park in Kenya.
(i) State **two** hypothesis of study **(2marks)**
(ii) Give **two** methods they would use to record data during the study **(2marks)**

10. (a) (i) What is settlement **(2marks)**
(ii) Give **two** types of settlements **(2marks)**
(b. (i) State **five** functions of Kisumu City **(5marks)**
(ii) Explain **three** factors that influence the growth Thika town **(6marks)**
(c) (i) State **four** negative effects of urbanization **(4marks)**
(ii) Differentiate the ports Mombasa and Rotterdam under the following sub-headings:
- Transport **(2marks)**
- Mechanization **(2marks)**
- Size of the port **(2marks**

M O K A S A 2 J O I N T E X A M I N A T I O N
312/1
GEOGRAPHY PAPER 1
DECEMBER 2021

MARKING SCHEMES

SECTION A
Answer all the questions in this section

1. (a) Define Physical Geography. **(2 marks)**
– It is a branch of Geography that deals with the study of the natural physical environment of human kind.
(b) State **three** importance of studying Geography. **(3 marks)**
– It helps to develop skills.
– It enables learners to understand/appreciate different environmental influences.
– It encourages international awareness/co-operation.
– It helps learners to appreciate important social values.
– It promotes positive attitudes towards protection/conservation of the environment.
– It leads to development of career opportunities
– It enables learners manage time properly.
– It enables learners to explain the origin of the earth and landforms.

2.
(a) Distinguish between weather and climate. **(2 marks)**
Weather refers to the atmospheric conditions of a place at a specific time while Climate is the average weather conditions of a place over a long period of time.
(b) Give **three** characteristics of ITCZ. **(3 marks)**
– It is a region of low pressure belt.
– Moves with the apparent movement of the midday sun.
– Associated with high temperatures.
– It is a zone of convergence where trade winds meet. (NE and SE trade winds)

– It receives high rainfall.

3. (a) List **three** sources of sedimentary rocks. **(3 marks)**
– Pre-existing weathered rock.
– Mineral compounds.
– Remains of organisms (dead plants and animals.
(b) Give **two** examples of mechanically formed sedimentary rocks. **(2 marks)**
– Conglomerate
– Breccia
– Boulder clay
– Sandstone
– Mudstone
– Shale
– Claystone
– Siltstone
– Loess

4. (a) Name **two** ways in which biological weathering takes place. **(2 marks)**
– Through the action of plants
– Through the action of animals
– Through the action of people.
(b) Identify **three** benefits of weathering. **(3 marks)**
– Weathering leads to formation of soil used in Agriculture.
– Weathering produces other natural resources e.g. clay used in brick making and pottery.
– Weathering weakens rocks making them easier for people to exploit e.g. Quarrying or mining.
– Weathered rocks like the granitors are fascinating therefore act as tourist attraction.

5.
(a) What is a river confluence? **(2 marks)**
It is the point at which a tributary joins the main river.

(b) List **three** processes of river erosion. **(3 marks)**
– Hydraulic action/Quarrying process
– Corrasion/abrasion
– Solution
– attrition

SECTION B
Answer question 6 and any other two questions in this section

6. Study the map of Yimbo 1 : 50000 (sheet 115/1) provided and answer the following questions.

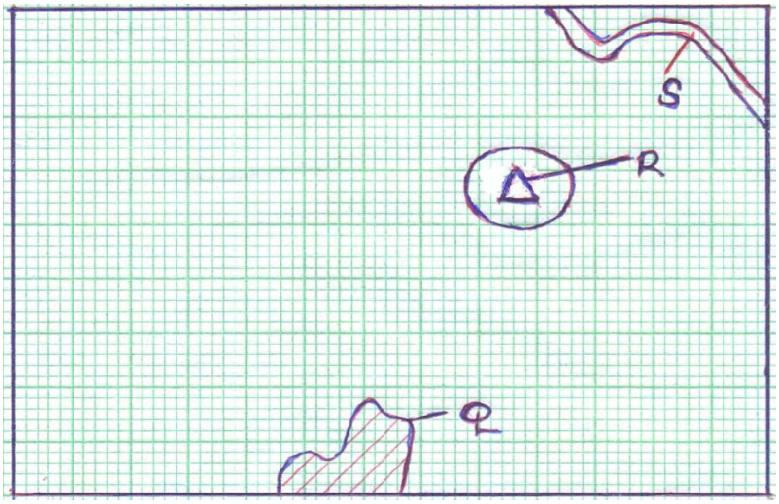
(a) (i) Give the latitudinal extent of the map. **(2 marks)**
$-0^0 00'$ to $0^0 15'S/15'$
(ii) What is the highest point of Usengi Hill? **(2 marks)**
-1269m above sea level
(iii) Measure the length of the provincial boundary to the North West of the area covered by the map. Give
your answer in kilometers. **(2 marks)**
– 6.1 km
(iv) What is the area of the Western Province in area covered by the map? **(2 marks)**
Complete squares – 5
Incomplete squares – 11

Area = $5 + \frac{11}{2}$

$= 5 + 5.5$

$= 10.5\ km^2$

(b) The rectangle below represents the area in the map extract bounded by Eastings 30 and 39 and Northings 90 and 96.



Name the features marked **Q**, **R** and **S**. **(3 marks)**

Q - River Yala
R - Usire Hill
S - Thicket

(c) Describe the characteristics of River Yala. **(6 marks)**

- It has many tributaries
- River Yala flows from East to West/ Eastern to Western
- The river has many meanders.
- The river flows on a wider river valley.
- The river is permanent.
- There are swamps/papyrus swamps and marshes in some part of the river valley.

(d) (i) Describe the relief of the area covered by the map. **(4 marks)**

- There are many hills in the area covered by the map.
- There are many wide river valleys in the area covered by the map.
- There is a depression occupied by Lake Sare/ L. Victoria.
- The land is flat in the area occupied by papyrus swamp.
- The land rises from the West towards the East.
- There are steep slopes on the slopes of Usengi hill.
- The highest point on the map is 1318m above sea level and the lowest point is 1140m above sea level.
- Lake Victoria has many islands.

(ii) Explain **two** factors which have influenced the distribution of settlement in the area covered by the map. **(4 marks)**

- There are no settlements in the swampy areas because it is difficult to construct houses/waterlogged which pose a health hazard to human life.
- There are no settlement on the steep slopes/hills because it is difficult to construct houses.
- There are many settlements/clustered around market centres due to easy access to social amenities/goods and services/economic activities.
- There are few/no settlements in the area covered by thickets because it is difficult/expensive to build houses.
- There are linear settlement along the roads/motorable/main tracks because of ease of movement.
- There are clustered/nucleated settlements at road junctions in order to access social amenities/to engage in trade activities.
- There are many/clustered settlements on the gently sloping/undulating land because it is easy to construct houses.

7. (a) (i) What is folding? **(2 marks)**

The process of crustal rocks distortion that causes rocks to bend upwards and downwards due to compressional forces.

(ii) State **three** factors that influence folding. **(3 marks)**

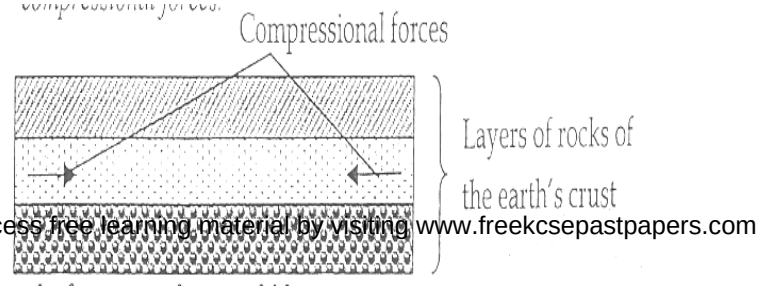
- The age of the sedimentary rocks
- The flexibility or elasticity of the rocks.
- The strength or intensity of compressional forces.
- The temperature within the rocks.

(b) (i) Apart from overthrust fold, name four other types of rocks. **(4 marks)**

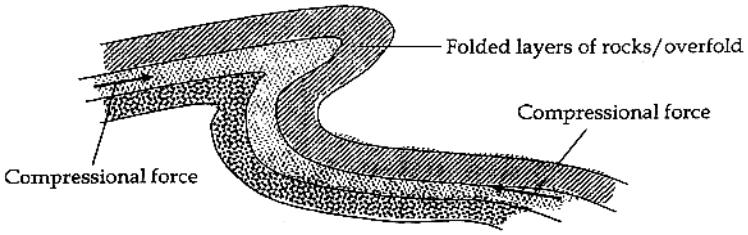
- Symmetrical fold
- Asymmetrical fold
- Overfolds
- Isoclinal folds
- Recumbent folds
- Anticlinorium folds
- Synclinorium folds

(ii) With the aid of well-labelled diagrams, describe the formation of an overthrust fold. **(8 marks)**

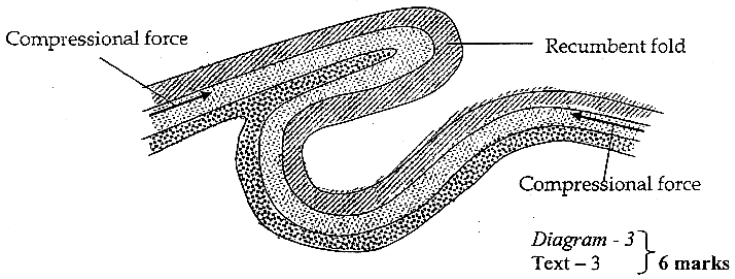
- Earth's crustal rocks are subjected to compressional forces.



- Increased compressional forces lead to formation of an overfold.



- Increased compressional forces on the overfold from a recumbent fold.



- Greater compressional forces lead to formation of a fracture along the axis of the recumbent fold to form a thrust plane.
- Compressional forces pushes the upper limb which will formed over the lower limb along the thrust plane to form an overthrustfold or nappe.

Diagram : ✓ 3 marks
Text : ✓ 5 marks

(c) Explain **four** significance of Fold Mountains to human activities .**(4 marks)**

- Fold Mountains may form unique scenery that may attract tourists; encouraging tourism which earn the country foreign exchange.
- The windward slopes of Fold Mountains receives high rainfall/encourages human settlement.
- The windward slopes of Fold Mountains may support the growth of forest encouraging forestry/wildlife.
- Windward slopes requires high rainfall which support arable farming/agriculture.
- Some Fold Mountains have exposed valuable materials encouraging mining.
- High rainfall on Fold Mountains or melting ice makes sources of rivers that provide water for domestic use/irrigation./industrial use.

8. (a) Give **three** ways in which the shape of the landmasses may influence movement of the ocean waters. **(3 marks)**

- May change direction of flow.
- May force ocean currents to flow along the coastline of the landmass.
- May split currents into two parts and flow in different directions.

(b) Distinguish between constructive waves and the destructive waves. **(2 marks)**

Construction waves; a wave whose swash is more powerful than backwash leading to deposition of materials at the shore while **Destructive wave;** a wave whose backwash is more powerful than swash leading to more removal of materials/erosion from the shore than is being deposited.

(c) Describe **three** processes of wave erosion along the coast. **(9 marks)**

✓P

Abrasion / Corrasion

- When the waves breaks, the swash carries pebbles, sand, boulder and other rock fragments from the shore.
- The materials are then hurled against the base of the cliff/the foot and the face of a rock by a breaking wave.
- The leads to under cutting and rocks break up.
- Some of these materials are dragged back into the water by back wash of the waves.
- Such materials, the heave ones also erode by <u>scratching</u> the ocean floor while the suspended materials in the back wash hit the rock face causing particles to break off. (3X1 =3 Marks)

<u>Solution</u>✓P

- Sea water has both corrosive and dissolving effects.
- Some oceans have coasts with soluble rocks which simply dissolve directly in ocean water.
- They are carried away in solution leaving hollows/cavities in the rocks/cliffs.
- Some oceans have coasts made of rocks that reacts with sea water to form soluble products that are washed away by the sea water.
- Carbon (IV) oxide dissolves in sea water forming weak carbonic acid.
- The weak carbonic acid reacts with minerals in some rocks in the ocean coast i.e. limestone.

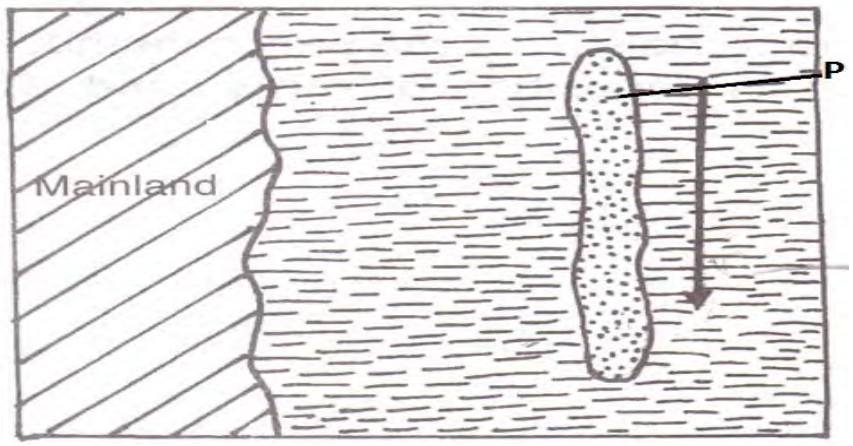
(3X1 =3 Marks)

Hydraulic action ✓P

- This is the erosion action caused <u>by the force of moving water.</u>
- In a breaking wave, <u>large amount of water</u> crush against the rock face/surface.
- Water continuously pound the rock face/cliff surface at intervals.
- This weakens the rock causing it to break into small particles which are carried by water.
- As water pounds the cliff/rock surface it may also <u>force air into the cracks</u>/crevices.
- Once inside the cracks, the air becomes compressed and increasing in pressure.
- This pressure causes widening of the cracks.
- As water retreats, the pressure is suddenly released causing the trapped air to suddenly expand explosively.
- This causes the rocks to fracture and the cracks to enlarge.
- When this process occurs repeatedly, it causes the shattering of rocks.

(3X1 =3 Marks)

(d) The diagram below shows a wave deposition feature.



(i) Identify the feature labelled **P**. **(1 mark)**

– Off shore bar

–

(ii) State **two** factors that favour the formation of the feature named in (i) above **(2 marks)**

– Very gently sloping coasts

– The coasts extends deep into the sea/ocean

– Presence of sand

(e) Students from Gedi Secondary School went out for a field study on coastal landforms.

(i) State **three** objectives for their study. **(3 marks)**

– To find out the wave erosional features at the coast.

– To find out the importance of coastal land forms

– To find out processes of wave transport along the coast.

(Any 3x1 = 3 marks)

(ii) Give **three** preparations they made for their study. **(3 marks)**

– Seeking permission

– Conducted reconnaissance/pre-visit.

– Preparing work schedule

– Divided themselves into groups

– Formulated/adjusted objectives and the hypothesis

(iii) Identify **two** methods they might have used to collect information before the actual field study. **(2 marks)**

– Observing films/photographs in the library

– Reading written materials about oceans/coasts from the internet.

9. (a) (i) Define underground water. **(2 marks)**

It is the water that exists beneath the earth's surface in pore spaces in soils and rocks.

(ii) Explain how the following factors influence availability of underground water.

(2 marks)

– **Slope of the land**

There is more underground water in flat and gently sloping areas because rain water has ample time to infiltrate while steeply sloping area have little underground water.

– **Vegetation cover**

Areas with thick vegetation have more underground water because plants break the speed of surface run-off of rain water, while areas with scanty vegetation cover have little underground water.

(b) (i) State **three** conditions that are necessary for the formation of an artesian well. **(3 marks)**

- Aquifer to be sandwiched between impermeable rocks to prevent evaporation and percolation.
- Aquifer to be exposed in a region which is a source of water e.g. rainy area or lake.
- Month of the well must be at a lower level than the intake area to develop hydraulic pressure to force water out.
- Aquifer to dip from a region of water intake and rock layers must form a bread syncline or basin.

(ii) State **three** problems that are associated with an artesian well. **(3 marks)**

- Water may be hot due to high temperatures.
- Water may be salty due to percolation through the salty water rocks.
- Water may fail to come out naturally when it is drawn faster than it is being replaced.

(c) (i) Differentiate between a Karst scenery and Karst region. **(2 marks)**

A karst region is where surface and the ground is covered with limestone rock while karst scenery are the unique features in karst region that are formed due to action of water.

(ii) The diagram below shows underground features in limestone areas.

Identify the features marked **X**, **Y** and **Z**. **(3 marks)**

Y - Stalagmite
X - Stalactite
Z - Limestone pill

(d) Form four students of a school are planning to carry out a field study on a Karst landscape near their school.
(i) Give **two** surface features in a Karst region that they identified. **(2 marks)**

- Grikes and clints
- Swallow holes
- Dry valleys
- Karst window
- Dolines/dolina
- Uvala
- Polje
- Limestone gorges
- Karst Bridge

(ii) State **three** reasons why they needed a working schedule. **(3 marks)**

- To provide an estimate of total time required for study.
- To ensure all important areas are covered and none is forgotten.
- Provides a framework to guide researcher's to stick to the topic.
- It indicates the specific time when each activity should take place.

(iii) Why was it necessary for them to divide into groups during their study? **(3 marks)**

- To create order during the study.
- To ease congestion in the area of study.
- To help participants collect data within the time given.
- To reduce fatigue among participants.

10. (a) What is soil? **(2 marks)**

- Naturally occurring thin layer of loose unconsolidated materials that overlies crustal rocks forming the earth's surface.
- The accumulation of minerals, rock particles, organic matter, water and air which found on the surface of the earth on which plants grow.

(b) (i) Name **three** components of soil. **(3 marks)**

- Organic matter/humes
- Inorganic matter/minerals
- Soil water/moisture
- Soil air/gases

(ii) Describe how the following factors influence the formation of soil.

- **Topography** **(3 marks)**

- Gentle slopes form deep, well drained and mature soils having clear profile.
- Steep slopes are heavily eroded forming thin and immature soils.
- Valley bottoms have deposition of weathered rock materials forming deep soils.
- Flat areas are waterlogged forming poorly drained soils

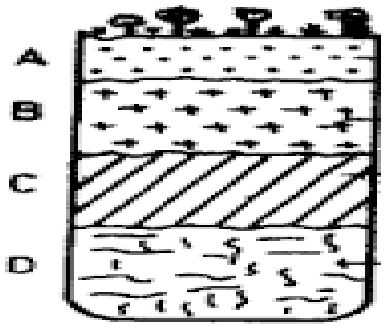
- **Nature of the parent rock** **(3 marks)**

- Rock minerals determine the fertility and chemical characteristics of the soil.
- Hard rocks weather slowly taking long time for formation soil/soft rocks weather faster to form soil.
- Rock texture determines soil structure, such that coarse grained rocks from coarse grained soil/fine grained rocks form fine soils.

(c) (i) Define soil profile. **(2 marks)**

The vertical arrangement of soil in layers/horizons from the earth's surface to the bedrock.

(ii) The diagram below represents a well-developed soil profile. State the characteristics of horizon **A**. **(4 marks)**



- Have intense chemical and bacterial activities.
- Dark in colour
- Contain humus
- Fine textual soil
- Has two soil layers.
- Zone of eluviation/leaching occurs

(d) Explain **four** ways in which farming practices may lead to loss of soil fertility. **(8 marks)**

- Overgrazing leads to removal of vegetation (over exposing the soil to agents of erosion removing the top fertile soil)
- Continuous irrigation cause soil nutrients to be leached making the top soil deficient of soluble minerals.
- Frequent ploughing weakens the soil structure making the soil easily eroded by agents of erosion.
- Ploughing up and down the slope creates channels for surface run-off which encourage soil erosion.
- Shifting cultivation makes the abandoned land open to erosion and loss of soil fertility.
- Monoculture makes soil nutrients exhausted.

SAMIA SUB-COUNTY JOINT EXAMINATIONS
GEOGRAPHY PAPER 1

SECTION A

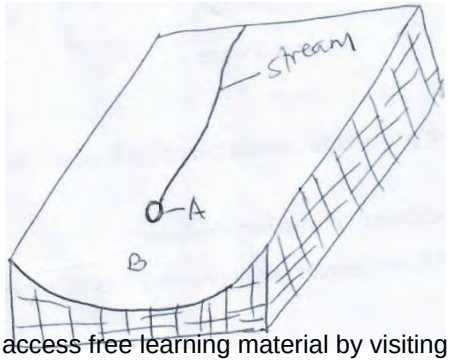
1 a) State the uniqueness of Geography as compared to other subjects. (2 marks)
b) Give three examples of human environment you know. (3 marks)

2 The table below shows rainfall and temperature figures for a given station. Study it and answer question (a)

Months	J	F	M	A	M	J	J	A	S	O	N	D
Rainfall (mm)	80	120	340	150	130	90	100	120	320	120	100	80
Temperature(^{O}C)	28	29	32	31	28	28	29	30	31	30	29	28

a. Calculate the annual temperature range for the station (1mark)
b. Describe the climate for the station (4marks)

3 a. The diagram below shows surface features of karst scenery.



Identify the features marked A and B. (2 marks)
b. State three conditions necessary for development of karst scenery. (3 marks)

4 a) Define an earthquake. (2 marks)
b) State three physical causes of earthquakes. (3 marks)

5 a) Distinguish between aridity and desertification. (2 marks)
b) State any three solutions to the problem of aridity. (3 marks)

SECTION B: Answer question 6 and any other two questions in this section.
Answer question 6 and any two questions

6 Study the map of KIJABE 1:50,000 (Sheet 134/3) provided and answer the following questions.

a. Use of marginal information.
i) Give the representative fraction scale of the map. (1 marks)
ii) Identify the vertical interval of the map. (1 mark)
iii) What type of road is D398. (1 mark)
iv) What is the six-figure grid reference for Mai Mahiu school. (2marks)

b. Measure the distance of the railway line from the level crossing near Kijabe post office to Kijabe station (2marks)

c. Describe vegetation of the area covered by the map. (2 marks)

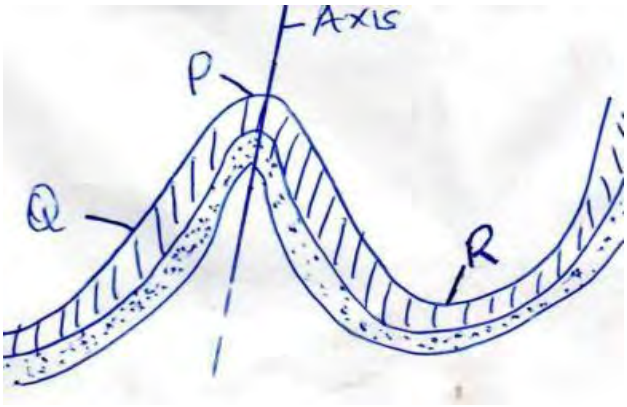
d. Draw a rectangle measuring 10 x 6 cm to represent the area bounded by eastings 30 and 40 and northing 94 and 00. (2 mark)
i) On it show; Thicket vegetation, railway line and quarry. (3 marks)
ii) Calculate the new scale of the area you've drawn in (b) above. (2 marks)

e. With evidence identify **three** social services offered in the area. (6 marks)

f. Name any three artificial drainage features found in the area. (3 marks)

7 a. i. Distinguish between glacial till and fluvio-glacial till. (2 marks)
ii. Give two reasons why there are no ice sheets in Kenya (2 marks)
b. Explain three factors that influence the movement of ice from the place of accumulation. (6 marks)
c. Describe how the following glacial erosional features are formed.
i) Arete is formed (4 marks)
ii) Glacial trough (4 marks)
d. You carried out a field work on glaciated lowlands.
i) Mention two methods of data collection you used. (2 marks)
ii). Name three glacial depositional features you identified. (3 marks).
Give two follow up activities that you carried out. (2 marks)

8 a. Differentiate between folding and faulting (2 marks)
b i. Apart from rift valley, name three features resulting from faulting (2 marks)
ii. Using well labeled diagrams, describe the formation of the rift valley by tensional forces. (8marks)
c. i) The diagram below shows a fold. Name the parts marked P, Q and R. (3 marks)



ii) Name the fold mountains found in; (4 marks)
North west Africa
South America Western North America Asia
d. State and explain any three effects of fold mountains on the climate of a place. (6 marks)

9. a) (i) State three wind erosion processes (3 marks)
(ii) Give three factors leading to development of deserts. (3 marks)
b) Explain two ways through which wind transports materials in the deserts (4 marks)
c) Describe formation of:-
(i) Wadi (3 marks)
(ii) Seif dune (3 marks)
(iii) Rock pedestal (3 marks)
d) Explain three negative effects of desert land forms (6 marks)

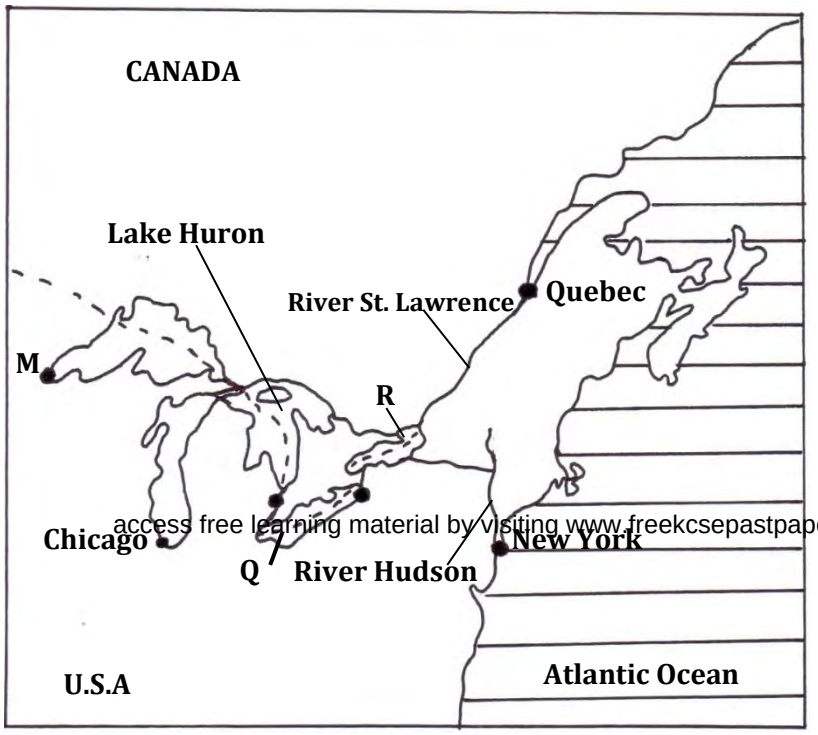
10
a. i. Give three determinants of soil colour (3 marks)
ii. State four ways in which humus improve the quality of the soil (4 marks)
iii. Name two types of soil according to structure. (2 marks)
b. Explain how the following factors influence formation of soil (4 marks)
- Living organisms
- Topography
c. Explain four causes of soil degeneration (4 marks)
d. You intend to carry out a field study on soil erosion around your school.
i. Give two methods of data recording you will use (2 marks)
ii). Identify two causes of soil erosion you are likely to come across

SAMIA SUB-COUNTY JOINT EXAMINATION
312/2
GEOGRAPHY PAPER 2
DECEMBER, 2021

SECTION A (25 MARKS)
ANSWER ALL THE QUESTIONS IN THIS SECTION

1. a). Define the term energy crisis (2mks)
   b) State **three** limitations of using solar energy (3mks)
2. a) Give **two** problems facing river transport in African. (2 marks)
   b) The diagram below shows the Great Lakes and the St. Lawrence sea way.

   Use it to answer the questions below.



   Name the lakes **M**, **Q** and **R**. (3mks)

3. a) Apart from tropical hardwood forests name two other types of natural forests (2mks)
   b) State **three** problems experienced in exploitation of tropical hardwood forests (3mks)
4. a) Give **three** physical factors that favour coffee growing in Kenya highlands (3mks)
   b) State **two** problems facing coffee farming in Kenya (2mks)
5. a) Give **three** types of fish (3mks)
   b) List **two** traditional methods of fishing (2mks)

SECTION B
Answer question 6 and any other two questions from this section

6. The table below shows crops production in Kenya for a period of five years in 1000 kilograms. Use it to answer question (a)

CROP/YEAR	2005	2006	2007	2008	2009
Coffee	1000	900	800	700	800
Tea	700	700	600	680	600
Cotton	500	400	300	600	350
Pyrethrum	300	200	300	440	450

   (a) (i) Using a scale of 1 cm represent 200 kilograms present the above data using a compound bar graph. (9 marks)
   (ii) List **two** advantages of using a compound bar graph to represent statistical data. (2mks)
   (b) (i) Other than Ghana, name other two countries West Africa where cocoa is grown (2mks)

(ii) State **three** physical conditions that favor the growth of cocoa in Ghana. (3mks)

(c) Describe how cocoa is processed in Ghana (6mks)

(d) Give **three** importance of cocoa production to the economy of Ghana .(3mks)

7 . Study the photograph shown below and use it to answer the following questions.

a) i) Identify the type of the photograph shown above. (1mks)

ii) Identify **two** characteristic of the photograph shown above. (2mks)

iii) Give **three** parts of a photograph. (3mks)

b) Name the type of mining method shown above. (1mks)

c) Explain how the method named above (b) is carried out. (6mks)

d) Explain **four** negative effects of the above method of mining on the environment. (8mks)

e) Draw a sketch diagram to represent the photograph shown above. (4mks)

8. a) i) Define the term land rehabilitation (2 marks)

ii) Apart from irrigation, name ***three*** other methods of land reclamation in Kenya. (3 marks)

b) Explain ***three*** problems facing irrigation farming in Kenya. (6 marks)

c) Describe the stages of polderization in the Netherlands (5 marks)

d) You intend to carry out a field study on irrigation farming in Mwea Tebere irrigation scheme

i) Identify the **two** types of hypothesis you would develop for the study (2mks)

ii) Name **five** crops grown in the scheme that you are likely to identify (5mks)

iii) Give **two** reasons why you need to sample the area of study (2mks)

9. (a) i) Define the term industrial inertia (2mks)

ii) **Give three** causes of industrial inertia (3mks)

b) Name **three** agricultural non-food processing industries in Kenya (3mks)

c) i) What is cottage industry (2mks)

ii) List **four** ways in which Jua Kali industries is important to the Kenyan economy (4mks)

d) i) **State three** problems facing cottage industry in India (3mks)

ii) Explain **four** factors that led to the development of iron and steel industry in the Ruhr region of Germany (8mks)

10. a) i) What is environmental management (2mks)

ii) Give **four** reasons why it is necessary for Kenya to conserve her environment (4mks)

b) Explain **four** measures that can be taken to combat pollution (8mks)

c) i) Name **five** types of wastes found in urban areas (5mks)

ii) Explain three ways in which wastes in urban centres can be managed (6mks)

SAMIA SUB-COUNTY JOINT EXAMINATIONS
312/1
GEOGRAPHY PAPER 1

MARKING SCHEME

1. a. Uniqueness of Geography as a subject

- It emphasizes spatial distribution of things on earth's surface and maps them to show their relationships/patterns.
  1×2 = 2mks

b. Give three examples of human environment you know.
Buildings, trade, bridges, farming, forestry, mining, industry any 3x1= 3 marks
Mark Any other relevant

2 a. Temperature range
$32^{O}C - 28^{O}C = 4^{O}C$

b. Describe the climate of the station 1×1 = 1mk

- rainfall is received throughout the year/no real dry month
- highest rainfall received in March 340mm
- the lowest rainfall received in December/January 80mm
- double maximum rainfall regime/two rainy seasons per year
- temperature range is $4^{O}C$

3 Identify the features marked A and B.
A sink hole/ swallow hole 1 mark
B dry valley 1 mark

b) State three conditions necessary for development of karst scenery.

- The rocks should be hard limestone or chalk
- The rock should be well jointed
- The climate should be hot and humid to accelerate chemical weathering.
  Any 3x 1 = 3 marks

4) a) Define earthquake.
Is the sudden and rapid movement of crustal rocks due to seismic waves. 2 marks
*Award 2 mks even if the student has not said 'due to seismic waves'

b) State three physical causes of earthquakes.

- Collision of tectonic plates
- Gravitative force which tend to pull everything towards the centre of the earth
- Volcanicity due to displacement of magma.
- Isostatic adjustment due to disruption of balance between SIMA n SIAL.
  Any 3x 1 = 3 mks *They must be statements to score

5. a) Distinguish between aridity and desertification.
Aridity is the state of land being deficient in moisture leading to scanty or no vegetation while desertification is the encroachment of arid conditions into productive land. 2 marks
Both must be correct for a student to score

b) State any three solutions to the problem of aridity.

- Afforestation and reafforestation.
- Irrigating dry land.
- Control industrialization by setting laws to govern pollution.
- Controlled grazing/ keeping manageable herds of animals.
- Planting drought resistant crops.
- Use of alternative fuel sources to avoid relying on wood fuel.

Any 3x 1 = 3 marks

Section B: Answer question 6 and any other two questions in this section.

6) a

i) Give the representative fraction scale of the map. **(1 marks)**
1:50000

ii) Identify the vertical interval of the map. (1 mark)
20 metres

iii) What type of road is D398. (1 mark)
Dry weather road

iv) Grid reference 315906 **(2 mark)**

b. distance 4.3±0.1km

c. Describe vegetation of the area covered by the map.

- There area has a thicket to the south
- Forests exist to the east.
- Scrubs are there to the west
- Woodland vegetation exist between Kijabe and Magina

d. Bamboo vegetation are found to the north of the forest. 5x1 = 5 marks

e. i) Reduction
title 1mk
rectangle
1 mk
features 3 marks
total 5 marks

ii) Calculate the new scale of the area you've drawn in (b) above.
2*50000 = 1: 100 000 2 mark

f. Social services

- Education services – schools
- Medical /health services – dispensary
- Veterinary services – cattle dip.

- Religious service – Churches
- Welfare services – welfare centre
- Communication service – post office/telephone line

Give any other relevant service 3x2= 6 mks

g. Three artificial drainage features found in the area.

- Borehole
- Water trough
- Water tank
- Pump house

7) a. i. distinguish Glacial Till and fluvio-glacial till

Glacial till is the moraine directly deposited by ice on melting in a stratified manner while fluvio-glacial till is moraine that is deposited by water from melting ice in a stratified manner. **1 ×2=2mks**

ii. Reasons why there are no ice sheets in Kenya

- Kenya experience high temperature under which ice-sheets cannot form
- Most parts of Kenya have low attitudes where ice cannot form
- Kenya is found at low latitude /tropics

2 ×1=2mks

C i. Formation of an arête

- Two adjacent cracks exist on a mountain side
- Two hollows cracks are filled with ice
- The ice erodes the sides through picking & deepens the hollow by abrasion
- Eventually the hollows cirques are separated by a knife edged ridge called an arête. 4 ×1=4mks

N/B: Sequence must be followed

ii glacial trough

- a preexisting river valley is filled with ice/ glavier
- as ice moves, tributary glaciers increase the amount of ice in the main valley.
- Glacier erodes V shaped valley by plucking and abrasion.
- Interlocking spurs are trimmed into truncated spurs.
- The glacier deepens, widens and straightens the valley floor forming a u shaped glacial trough.

4 ×1=4mks

N/B: Sequence must be followed

d. i) Methods of data collection

- Administering questionnaires
- Interviews/ asking questions
- Observation
- Taking photographs
- Content analysis
- Sampling(2x1= 2 marks)

ii depositional features (3 marks)

- outwash plains
- boulder trains
- till
- erratics
- kames and eskes
- terminal moraine
- drumlins

iii followup activities(2 marks)

- reading more on the topic
- displaying photographs

- writing reports
- accessing the information against hypothesis.
- Discussion/ comparing notes
- calculating measures of central tendencies
- drawing graphs/ charts

(any two 2x1 2mks)

8) a. Differentiate between folding and faulting

- Faulting is the fracturing / cracking of crustal rocks due to tectonic forces while faulting is the bonding of crustal rocks due to compressional forces.

b.

- Fault blocks/Tilt blocks
- Fault scarps/escarpments
- Fault steps
- Block mountains/horst blocks

1 ×2=2mks First 3×1=3mks

ii.

- Rock layers are subjected to tensional forces
- Continued tensional forces result to development of adjacent parallel normal faults in the rocks
- Increased tensional forces cause side blocks to more apart, and the middle block sinks to form the floor of the rift valley
- Steep faulting may occur on the sides.

4×1=4mks – Explanation 3×1 = 3mks – Diagrams

c. i. P- crest
Q- limb
R- Trough

ii)
- North west Africa --Atlas
- South America - Andes
- Western North America -Rockies
- Asia - Himalayas

d. State and explain any three effects of fold mountains on the climate of a place. (6 marks)
- Windward side of fold mountains receive heavy rainfall
- Leeward side are dry and cool
- Mountaineous areas have low temperatures/ are cooler
- Mountain areas have low pressure

Must be well explained

9. a (i) State three wind erosion process
- Abrasion
- Deflation
- Attrition

(ii) Give three factors leading to development of deserts
- Excessive overgrazing by large herds of cattle.
- Indiscriminate cutting of trees / deforestation.
- Poor farming methods such ploughing down the slope / mono cropping
- Industralisation
- Continentality
- Cold ocean currents.
- Raid shadow effect. 3x1=3mks

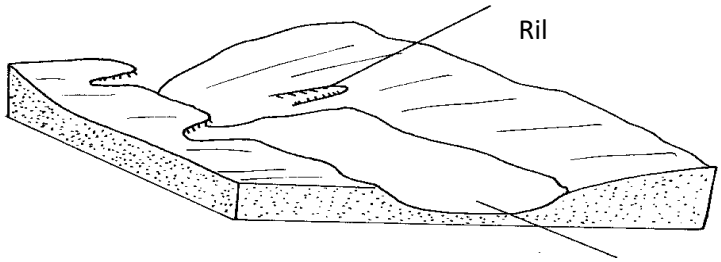
b) Explain two ways through which wind transports materials in the deserts.

- Suspension where fine dust is transported by wind as suspension in the air reducing of the area they pass.
- Traction where fairly heavy particles which cannot be lifted are rolled on the land surface as the wind blows across the land.
- Saltation whereby the materials are transported in the deserts through a series of hops jumps where the materials are fairly heavier and cannot be air borne.

2x2=4mks

c. Describe formation.

(i) Wadis.
- Flashfloods in deserts cut out rills on steep sided undulating landscape
- The rills are enlarged to form gullies which are further joined by other minor
- Gullies forming wide- steep sided valley called wadi.

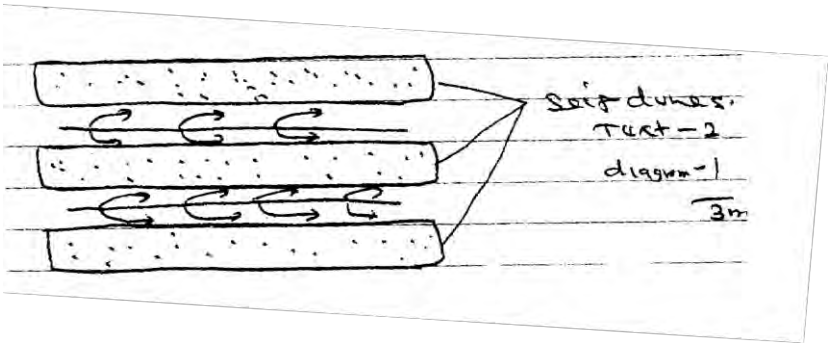


Text 1
diagram 2

(ii) Seif dunes

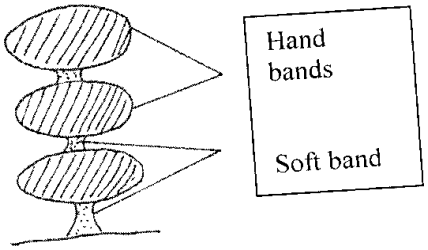
- Forms where strong winds interrupts prevailing wind.

- The cross winds breaks crescent shaped barchans forming longitudinal steep sided ridges known as seif dunes



(iii) Rock 7edestal

- Forms through the process of wing abrasion which arodes / attacks alternating layers of hard and soft rocks
- The softer rocks are aroded faster while harder rocks are eroded least forming rock outcrop of different shapes called rock pedestal.



Text – 2
Diagram – 1

c. Explain three negative effect of deserts landforms

- Sandunes can cover roads making transportation difficult 3mks
- Desert landscape makes construction of transport network difficult due to presence of mesa, Wadis yardang etc.
- Sandstorms can burry people and destroy properties.

3x2=3mks

10 a. i. Determinants of soil colour

- Chemical rock
- Chemical composition
- Organic matter present
- Drainage of the area.

ii Ways in which humus improves the quality of soil (4 marks)

- Determine the soil pH
- Provide habitat for bacteria that assist in aeration
- Determine the soil colour
- Provides food and minerals to plants
- Water retention
- Development of soil structure
- Contribute to further weathering of rock

iii. Types of soils according to structure

- Granular /crumb
- Platy

- Prismatic
- Columnar/blocks

2×1 = 2mks

Living organisms

- Breakdown animals & plant venous to form humus
- Help in soil creation
- Help in mixing of soil nutrients.

2×1 =2mks

Topography

- Maximum soil formation process occurs on gentle slopes due to reduced soil erosion on step fool to reach maturity due to increase surface erosion

Causes of soil degeneration

- Poor land use practices such as overgrazing and poor cultivation practices
- Drought
- Heavy rainfall that may cause leaching / soil erosion
- Deforestation 4×1 = 4mks

i. **Labeling photographs**

- Labeling samples
- Filling tables
- Filling questionnaires
- Tape recording

ii. **Deforestation**

- Poor cultivation practices

2×1 = 2mks

SAMIA SUB-COUNTY JOINT EXAMINATION
312/2
GEOGRAPHY PAPER 2
DECEMBER, 2021

Marking scheme

1. a). Define the term energy crisis (2mks)

Is a situation where the demand for oil is higher than the amount being supplied leading to high oil prices.

b) state three limitations of using solar energy (3mks)

- Solar energy is unable to run heavy machinery
- Batteries used for storing solar energy are cumbersome and are to be replaced oftenly.
- Quality solar panels are quite expensive to manufacture.
- Installation of solar panels require technical skills which are undeveloped in most people.
- Solar energy depends on weather patterns which makes its use unreliable.

2. (a) Give two problems facing river transport in Africa. (2 marks)

- Inadequate capital to develop waterways, ports and for the purchase of vessels.
- Fluctuation of water levels which makes sailing difficult as a result of rivers passing through dry areas.
- Presence of rapids and waterfalls which hinders the vessels' movement.
- Siltation of rivers which makes their channels shallow hence hindering movement of vessels.
- Presence of floating vegetation or swamps which makes it difficult for vessels to sail due to narrowing of the river channel.
- Most rivers pass through unproductive zones hence its uneconomical to develop river transport.
- Rivers flow across political boundaries which may require negotiation in order for the countries involved to use them for transport.
- Some rivers meander through their flood plains which increase the distance.
- Some rivers originate/pass through areas that experience long periods of drought leading to changes in the river regime.

(b) The diagram below shows the Great Lakes and the St. Lawrence sea way. Use it to answer the questions below.

Name the lakes **P**, **Q** and **R**.

M -Lake Superior
Q -Lake Erie
R -Lake Ontario

3. a) Apart from tropical hardwood forests name two other types of natural forests (2mks)

- Temperate hardwood forests
- Coniferous forests /temperate softwoods
- Montane forests
- Mangrove forests

b) State three problems experienced in exploitation of tropical hardwood forests (3mks)

- Presence of tree climbers
- Attack by wild animals
- Trees are found in mixed stands
- Dense/thick forests making penetration into the forest hard.
- The roads are muddy making transport difficult/ impassable roads.
- The trees take long to mature.

4. a) Give three physical factors that favour coffee growing in Kenya highlands (3mks)

- Deep well drained volcanic soils.
- High rainfall throughout the year.
- Well distributed rainfall throughout the year.
- Gentle sloping landscape.
- Warm climates

b) State two problems facing coffee farming in Kenya (2mks)

- Attack by pests eg lady bird, aphids and diseases eg CBD, Leaf rust hence low yields
- Fluctuation of coffee prices in the world market reducing the profit margins.

- Delayed payments hence demoralizing the farmers.
- Low payments hence discouraging farmers.
- Mismanagement of coffee cooperatives.

5. a) Give three types of fish (3mks)

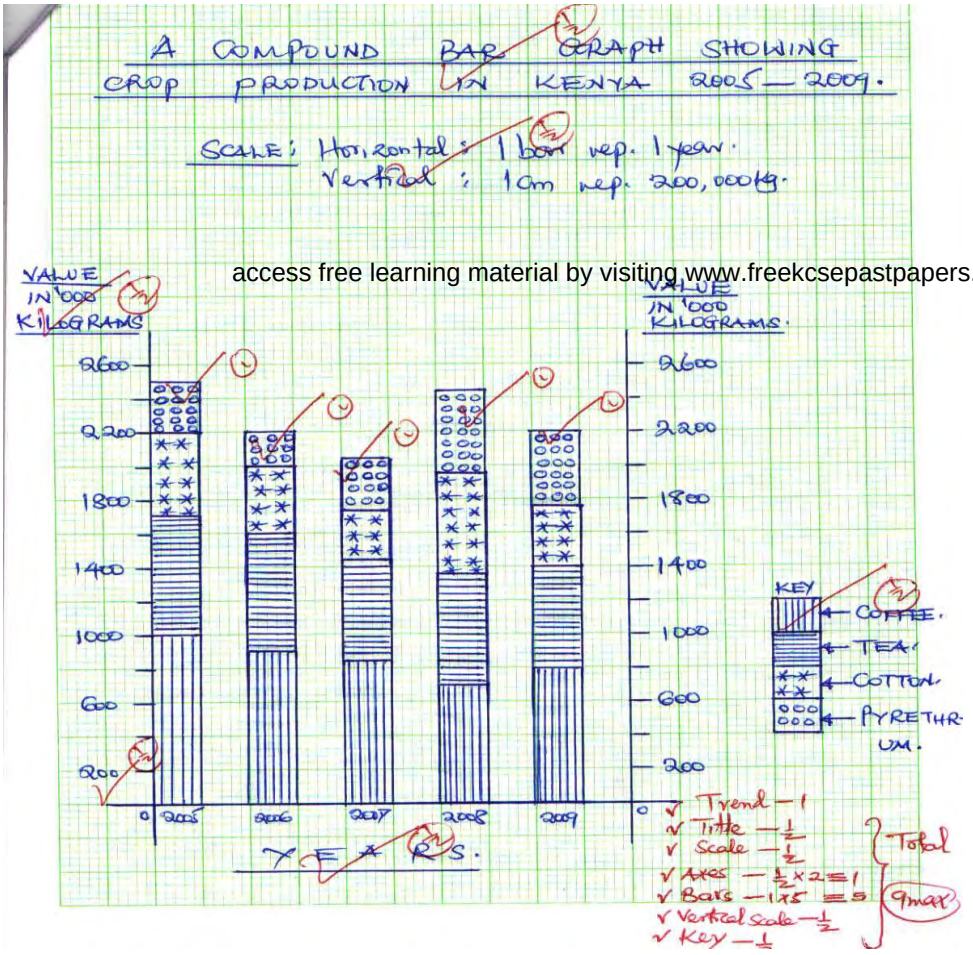
- Salt water fish
- Fresh water fish
- Anadromous fish

b) List two traditional methods of fishing (2mks)

- Basket
- Spear and arrow method
- Barriers
- Herbs
- Lamp and net
- Hook and line method
- Use of gill nets

SECTION B:

6. (a) (i)



(ii) Advantages of using a compound bar graph to represent statistical data. (2 marks)

- Facilitates comparison of data
- A number of variables can be represented in one bar
- Changes /trend is easy to trace
- Good visual impression (any 2×1=2 marks)

(b). (i)Other than Ghana, name two countries in West Africa where cocoa is grown. (2 Marks)
- Nigeria
- Cote -de -voire
- Cameroon (Any 2×1=2 marks)

(ii) Physical conditions that favor the growth of cocoa in Ghana. (3 mks)
- High/ well distributed rainfall, ✓exceeding 1200mm p.a.
- High temperatures✓ /between 24^0c-30^0c
- High relative humidity✓ throughout the year
- Deep✓ ,fertile ✓well drained soils✓
- Low altitude/below 700m a.s.l. ✓ 3×1=3 marks)

(c) How cocoa is processed in Ghana (6 mks)
- Beans are fermented✓ for 5-6 days and dried✓
- The fermented beans are washed / cleaned
- The beans are roasted ✓
- The roasted beans are then crushed✓to extract cocoa butter
- Cocoa is blended ✓and mixed with sugar (1 mark×6= 6 marks)

(d) Importance of cocoa production to the economy of Ghana. (3 mks)
- Has contributed to development of industries which use cocoa as raw materials✓
- Earn the country foreign exchange since most of it exported ✓
- Provide employment opportunities to people working in the cocoa farms and distributing it. ✓
- Has contributed to development of infrastructure in the country✓
- Has attracted foreign investments into the country✓ (Any 4×1=4 marks)

7. a)

i) Identify the type of the photograph shown above. (1mks)
Ground oblique photograph

ii) Identify two characteristic of the photograph shown above. (2mks)
Taken from the ground with camera focused on general scenery

iii) Give three parts of a photograph. (3mks)
- Foreground
- Middle ground
- Background

b) Name the type of mining method shown above. (1mks)
Panning method

c) Explain how the method named above (b) is carried out. (6mks)
- The method involves digging out the sand/gravel which contains mineral particles
- The particles are mixed with water from the river in a shallow pan.
- The mixture is then whirled.
- The lighter particles of sand/gravel are pushed on the sides of the pan.
- The heavier mineral particles remain at the bottom of the pan.
- The minerals are easily removal by hand as the waited mineral.

d) Explain four negative effects of the above method of mining on the environment. (8mks)
- Leaves the land with depression which are dangerous to animals and people.
- Make land unsuitable for agriculture.
- Breeding grounds for mosquitoes. that cause diseases such as Malaria
- Makes the land susceptible to landslides etc any 3x2=6mks

e) Draw a sketch diagram to represent the photograph shown above. (4mks)
- The rectangle should be of the same size as the photograph—1mk
- Insert the features in their exact positions-1mk
- Label the important features people and the deposits-1mk
- Give the sketch a suitable title-1mk

8. a) (i) Define the term land rehabilitation (2 marks)
This is the process of restoring land that was once productive back to its productive state.

ii) Apart from irrigation, name three other methods of land reclamation in Kenya. (3 marks)
Draining of swamps

Control of pests
Introduction of drought resistant crops
Afforestation.
Reforestation
Use of manures and fertilizers.

b) Explain three problems facing irrigation farming in Kenya (6marks)

- Disease incidences such as bilharzia and malaria transmitted by vectors in stagnant waters.
- Payment of low prices to the farmers which kills morale of the farmers.
- High cost of production making the farmers to sell their produce at high costs
- Mismanagement of irrigation bodies leading to losses, lack of credit and low prices.
- Shortage of labour during planting, weeding and harvesting giving the farmers the burden of hiring labour at high cost.
- pest infestation which lowers production eg Quelea birds.
- low water levels in the rivers during dry season
- water weeds which compete with crops for nutrients
- siltation in the canals reduces the amount of water

c) Describe the stages of polderlization in the Netherlands (5 marks)

- Protective dykes/sea walls are constructed enclosing the part of the sea to be reclaimed.
- Rings canals are constructed.
- Pumping stations are installed to pump out sea water from the area enclosed by the dyke.
- Water is pumped out of the area enclosed by the dyke
- Drainage ditches and more pumping stations are made on the land being reclaimed.
- Drainage pipes are laid below the soil.
- The area is divided into rectangular portions using. Inner dykes and ring canal.
- The drained land is flushed with fresh water to remove salt from the soil.
- Soils are treated with chemicals to remove salinity
- Pumping water from the polders is a continuous process to prevent water from accumulating in the reclaimed land.

d) You intend to carry out a field study on irrigation farming in MweaTebere irrigation scheme

i) Identify the two types of hypothesis you would develop for the study (2mks)

- Null hypothesis
- Alternative hypothesis

ii) Name five crops grown in the scheme that you are likely to identify (5mks)

- Maize
- Rice
- Beans
- Tomatoes
- Vegetables

iii) Give two reasons why you need to sample the area of study (2mks)

- To save on time spent during fieldwork.
- To minimize biasness during the study.
- To reduce cost of the study.

9. (a)

i) Define the term industrial inertia (2mks)

It is the tendency 0f an industry to remain in a particular area even when the locational factors no longer exist

ii) Give three causes of industrial inertia (3mks)

- availability of experienced workers
- availability of well developed transport and communication system already in place
- It is expensive to move to a new site
- Industrial independence.

b) Name three agricultural non-food processing industries in Kenya (3mks)

- leather industry

- sisal industry
- pyrethrum industry
- textile industry
- timber industry
- tobacco industry

c) i) What is cottage industry (2mks)
is an industry located in villages and people's homes using locally available raw materials, simple tools and skills to produce valuable items.

ii) List four ways in which Jua Kali industries is important to the Kenyan economy (4mks)
- creates employment opportunities
- Source of income to many Kenyan raising their standards of living.
- Saves on foreign exchange earned
- Earns the country foreign exchange through exports.
- Produce cheaper goods.

d) i) State three problems facing cottage industry in India (3mks)
- Inadequate funds among people in rural areas
- Stiff competition for the market.
- High danger of exploitation from middlemen
- Production of similar goods
- Competition from manufactured goods.

ii) Explain four factors that led to the development of iron and steel industry in the Ruhr region of Germany (8mks)
- Availability of coal which is the main source of energy
- Availability of limestone and iron ore as raw materials
- Availability of energy
- Availability of adequate water from river Rhine
- Centrality of Germany in Europe/Accessibility of Germany
- Availability of capital
- Availability of ready market
- Availability of skilled labour

10. a)

i) What is environmental management (2mks)
- These are the measures /controls taken to ensure sustainable utilization of resources in a given environment.
- This is the planning and implementation of effective and proper utilization of the available resources in the environment.

ii) Give four reasons why it is necessary for Kenya to conserve her environment (4mks)
- To maintain source of food supply/ to maintain soil fertility..
- For modification of climate.
- For keeping air clean.
- To prevent desertification.
- Protect water catchment areas.
- For its aesthetic value.
- To sustain the sources of raw materials.
- For maintaining natural habitat for wild animals.

b) Explain four measures that can be taken to combat pollution (8mks)
- Control of soil erosion to reduce the amount of silt getting into rivers, wells, lakes and other water bodies.
- Treating of sewage and industrial effluents before being released into the environment.
- Carrying out regular inspections of factories to ensure that toxic fumes are not released into the atmosphere.
- Use of unleaded fuel to promote a cleaner environment as well as to reduce pollution released by the cars.
- Establishing recycling plants to recycle the different categories of wastes and make them user friendly to the environment.
- Setting up proper garbage collection and management programmes.

c) i) Name five types of wastes found in urban areas (5mks)

- Industrial wastes
- Biomedical/clinical wastes.
- Household wastes
- Agricultural wastes
- Commercial/business waste
- Construction wastes
- Sewage/sludge waste.
- E-waste/Electronic waste

ii) Explain three ways in which wastes in urban centres can be managed (6mks)

- By recycling wastes so as to produce useful products from the wastes.
- By asking companies /firms to treat wastes prior to disposing it off to the local surrounding.
- Discourage the use of plastic bags that are non-biodegradable and thus a serious pollutant to the land.
- Place many waste collection bins so as to reduce haphazard manner of disposal of waste.
- By creating awareness on the significance of sound waste management practices by the urban population.
- By ensuring that the county government do not allow accumulation of waste in the urban centres.

KIRINYAGA CENTRAL SUB-COUNTY
312/1
Geography Paper 1

SECTION A (25MKS)

1. a) Distinguish between environment and habitat. (2mks)
   b) State three reasons why the study of geography is important. (3mks)
2. a) Define the term solar system. (2mks)
   b) Give any three theories explaining the origin of the solar system. (3mks)
3. a) Differentiate between magma and lava. (2mks)
   b) Name two volcanic features found in the Rift valley of Kenya. (2mks)
4. a) What is weathering? (2mks)
   b) Describe how exfoliation occur? (4mks)
5. a) Define the term rock. (2mks)
   b) State three characteristics of minerals. (3mks)

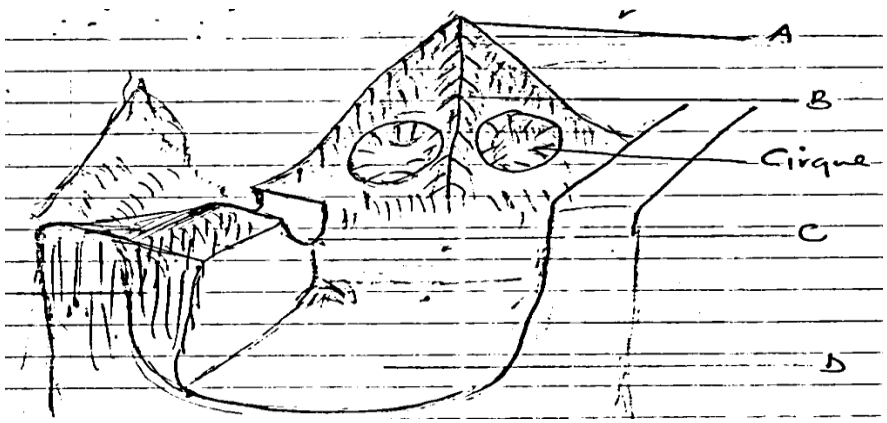
SECTION B :
ANSWER QUESTION 6 AND ANY OTHER TWO QUESTIONS IN THIS SECTION

6. Study the map of Kijabe 1: 50000(Sheet 134/3) provided and answer the following questions.
   a) i. Give the six figure grid reference of principal photo point on the south western corner. (2mks)
      ii. What is the bearing of the pump house in grid square 3198 from the cattle dip in grid quare 2701. (2mks)
   b) i. Give the vertical interval as provided for in the map sheet. (1mk)
      ii. Draw a rectangle 16 by 10 centimeters enclosing area bound by easting 30 to 38 and lying between northings 90 to 94. (2mks)

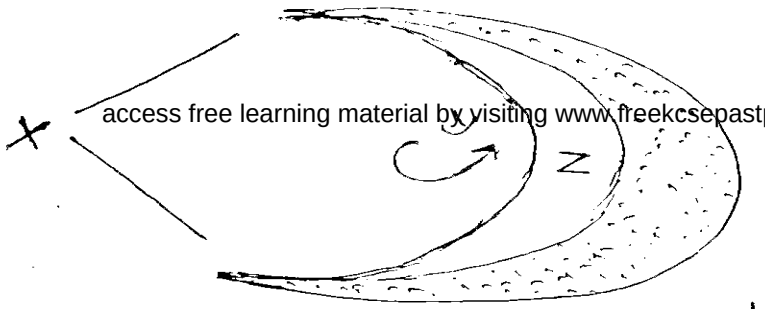
      On the rectangle you have drawn, sketch and label.
      - Thicket vegetation (1mk)
      - Dry weather road (1mk)
      - Upper Ewaso Kedong river (1mk)

   c) Citing evidence from the map, identify two social services offered in the area. (2mks)
   d) Briefly describe the relief of the area covered by the map. (5mks)
   e) Citing evidence from the map, explain any four factors that may have influenced livestock keeping in Kijabe. (8mks)
7. a) What is climate? (2mks)
   b) Explain how the following factors influence climate:-
      i. Latitude (4mks)
      ii. Altitude (4mks)
      iii. Ocean currents (4mks)
   c) i. Distinguish between aridity and desertification (2mks)
      ii. State any four natural causes of aridity and desertification. (4mks)
   d) Student from your school carried out a field study on weather.
      i. Name two challenges they were likely to encounter during the field study. (2mks)
      ii. State three follow – up activities they undertook. (3mks)
8. a) i. Distinguish between a normal fault and a reverse fault. (2mks)
      ii. Identify 3 lakes found in the Eastern section of the East African Rift valley and in Kenya. (3mks)
   b) i. Apart from compressional forces, name two other forces that may cause faulting. (2mks)
      ii. With the aid of well labelled diagrams, describe how the Rift valley was formed through compressional forces. (8mks)
   c) State four ways in which faulting may influence the drainage. (4mks)
   d) Students from your school carried out a fields study of an area affected by faulting.
      i. State three reasons why it is was important to undertake a pre – visit of the area of study. (3mks)
      ii. One method of data collection they used was direct observation.
      State three disadvantages of observation they could have encountered. (3mks)

9. a) i. Name three types of glacier. (3mks)
   ii. State two factors that influence glacial erosion. (2mks)
   b) i. Name two features found in an outwash plain. (2mks)
   c) Study the diagram below which shows glaciated highland features as



   i. Name the features marked (4marks)
   ii. Describe how features A and D are formed.
   A. (3mks)
   D. (3mks)
   d) Explain four significance of upland glaciated features to human activities. (8mks)
10. a) i. Name two major deserts found in Africa. (2mks)
   ii. The diagram below represents features from wind erosion in a desert. Use it to answer questions.



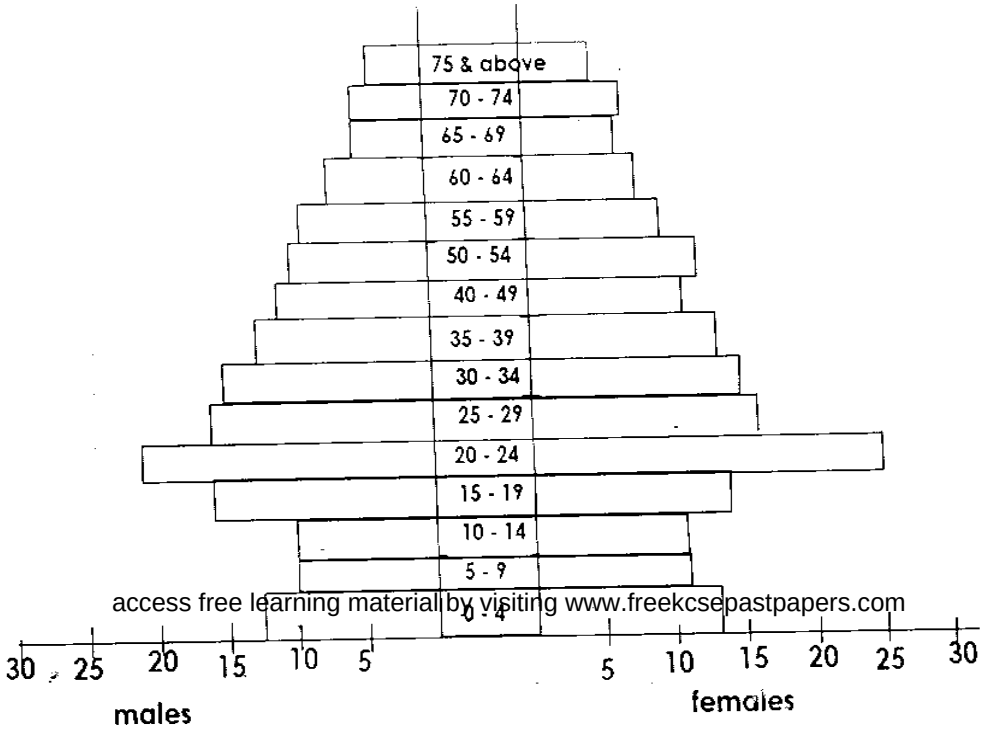
   Name : i. X. (1mark)
   ii. Y. (1mark)
   iii. Z (1mark)
   b) Describe the three processes through which wind transports its load. (6mks)
   c) Using a well labelled diagram describe how a rock pedestal is formed. (6marks)
   d) Explain four ways in which desert features are of significance to human activities. (8marks)

KIRINYAGA CENTRAL SUB-COUNTY
312/2
GEOGRAPHY PAPER 2
DECEMBER 2021

SECTION A : (25mks)
(Answer all the questions)

1. a) Give two main sources of population data. (2mks)

b) The pyramid below shows population structure of a country. From the pyramid given, determine the characteristics of the population presented. (3mks)



2. a) Name two forms of renewable energy that are being commercially developed in Kenya other than hydro – power. (2mks)

b) State three positive effects arising from energy crisis. (3mks)

3. a) What do you understand by the term regional trade. (2mks)

b) State three challenges facing trading blocs in the world. (3mks)

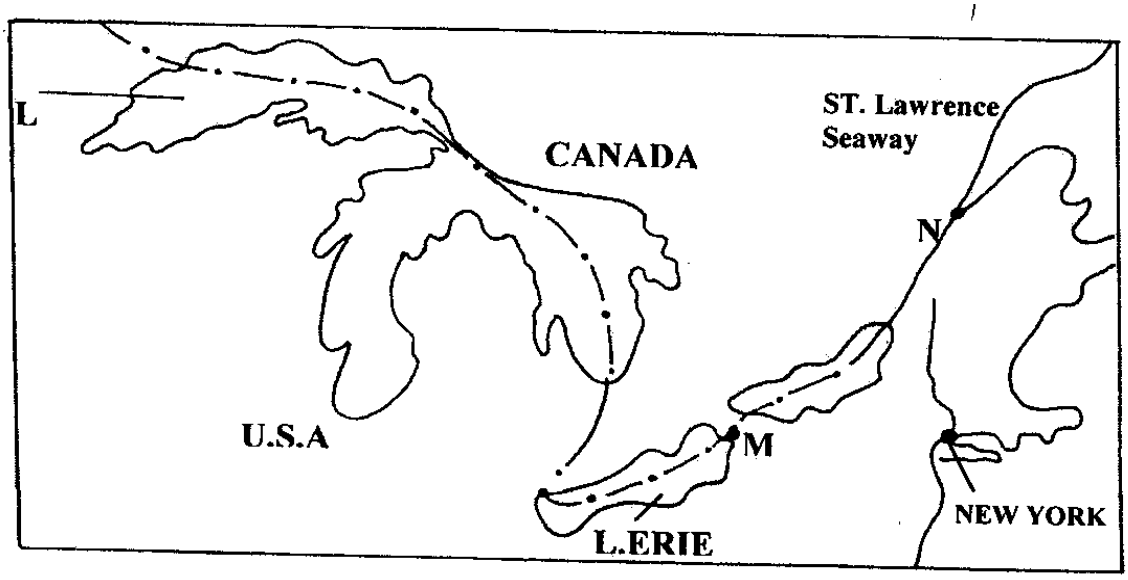
4. a) State any 3 negative effects of Covid – 19 on the tourism industry in Kenya. (3mks)

b) The following are some problems facing tourism in Kenya. Suggest a solution to each of the stated problem.

i. Negative altitude towards domestic tourists. (1mk)

ii. Adverse publicity of Kenya Abroad. (1mk)

5. Below is a sketch of the great lakes and the St. Lawrence water way.



a) Name ;
   i. Lake L (1mk)
   ii. Waterfall M (1mk)
   iii. Port marked N (1mk)

b) State two measures that were taken to improve the great lakes and a St. Lawrence water way for navigation. (2mks)

SECTION B.

Answer question 6 and any other two questions in this section.

6. The table below shows the value of minerals exported from Tanzania between 2000 – 2003. Use it to answer question (a) and (b).
   Value of Tanzania mineral exports(million ksh).

Year / Mineral	2000	2001	2002	2003
Gold	680	700	500	400
Diamond	1000	800	700	900
Mica	400	100	400	100

a) i. Using a scale of 1cm to represent 50 million kshs draw a cumulative bar graph to represent the data shown. (10mks)
   ii. State three disadvantages of using cumulative bar graphs to represent statistical data. (3mks)

b) Calculate the percentage change in the value of Mica exported between the years 2002 and 2003. (2mks)

c) Describe the opencast method of mining. (4mks)

d) Explain how the following factors influence the exploitation of minerals.
   i. Quality of ore. (2mks)
   ii. Methods of extraction. (2mks)
   iii. Technological advancement . (2mks)

7. a) i. Differentiate mixed farming from Arable farming. (2mks)
   ii. State three characteristics of mixed farming. (3mks)

b) i. Name three counties where tea is grown in Eastern highlands of Kenya. (3mks)

ii. State four human factors that favour tea growing in Kenya. (4mks)
iii. Describe how tea is processed. (6mks)

c) Your class carried out a field study on a horticultural farm in your county.
i. State two objectives of the study. (2mks)
ii. Name three types of flowers they could have identified. (3mks)
iii. Give two methods you would use to record the data during the field study. (2mks)

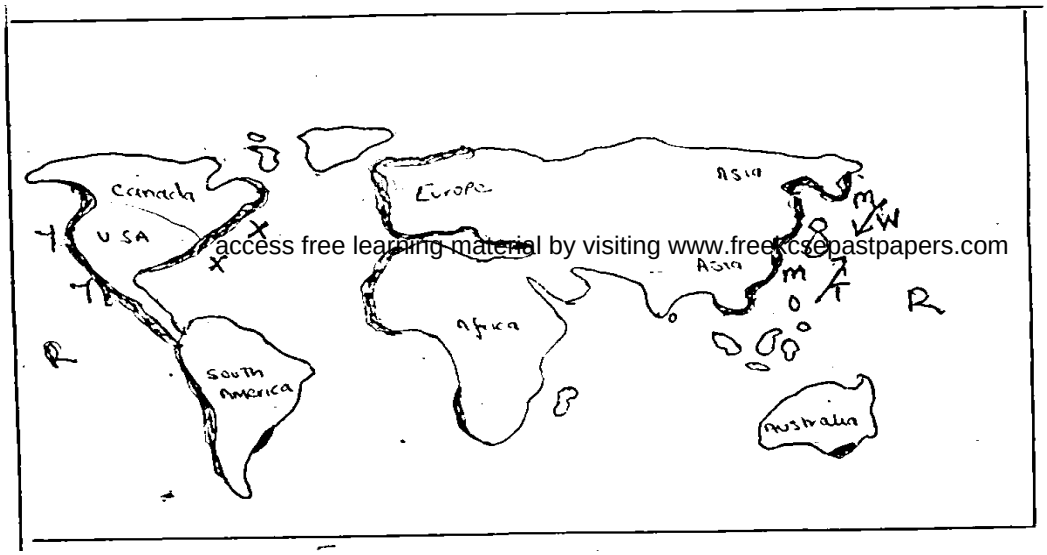
8. a) i. Define the term irrigation. (2mks)
ii. Apart from canal irrigation mention three methods of irrigation used in Kenya. (3mks)
iii. State two benefits of irrigation over natural water supply. (2mks)

b) i. Identify three crops grown at Perkerra irrigation scheme . (3mk)
ii. State three physical conditions that favoured establishment of Perkerra irrigation scheme. (3mks)
iii. Explain the problems facing irrigation farming under the following sub – headings.
– Human diseases. (2mks)
– Siltation. (2mks)
– Floods. (2mks)

c) i. Give two methods used to reclaim land in the Netherlands. (2mks)
ii. Explain two factors that favoured land reclamation in the Netherlands. (4mks)

9. a) i. Apart from pelagic fish name other two types of fish. (2mks)
ii. State three characteristics of pelagic fish. (3mks)

b) Study the map of the world provided showing the major fishing grounds and answer questions bi, ii, iii and iv.



i. Name the fishing ground marked
X (1mk)
Y (1mk)

ii. Identify the ocean currents.
W (1mk)
T (1mk)

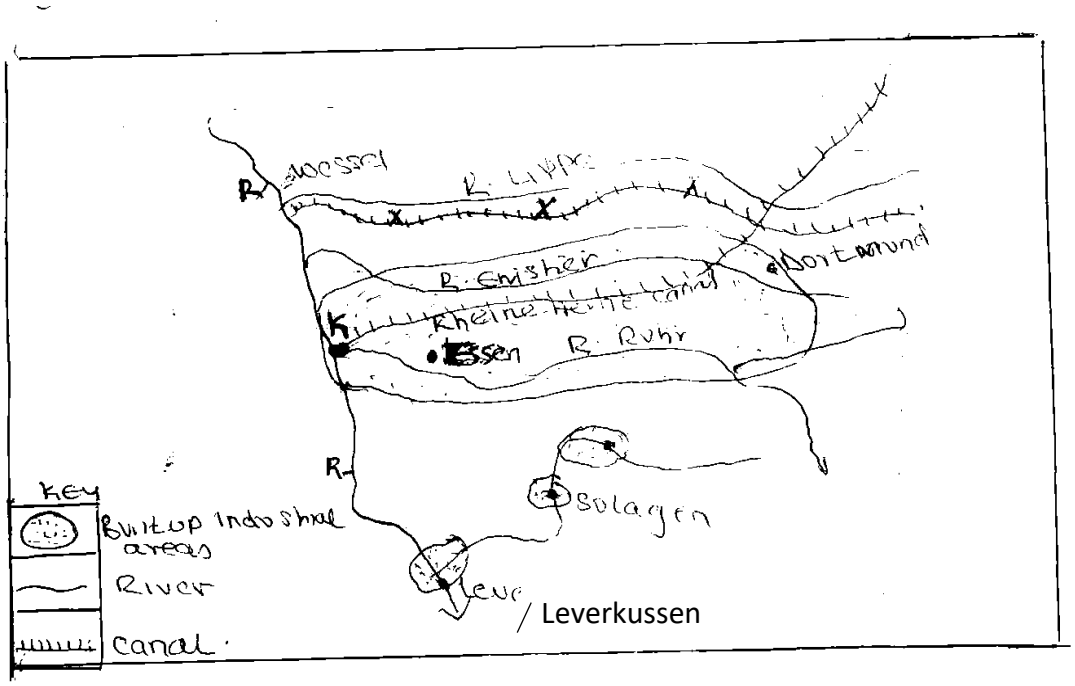
iii. Name ocean
R (1mk)

iv. Explain four physical factors that favour development of fishing ground M. (8mks)

c) i. Apart from drifting method, name other two modern methods of fishing. (2mks)
ii. Describe how drifting method is used to catch fish. (5mks)

10. a) i. Apart from industrial inertia, state two factors which influence industrial location. (2mks)
ii. State two factors that may cause industrial inertia. (2mks)
iii. Apart from manufacturing industries name another type of industry. (1mk)
iv. Name two items assembled in Kenya. (2mks)

b) Below is a sketch map of the Ruhr industrial region of Germany use it to answer question I, ii and iii.



Name

i. River R (1mk)
ii. Town K (1mk)
iii. Canal x (1mk)

c) i. List three types of coal found in the Ruhr industrial region of Germany. (3mks)
ii. Explain three reasons that caused the decline in the use of coal as source of energy in the Ruhr region of Germany. (6mks)
iii. Other than iron and steel industries, name two types of industries located in the Ruhr region of Germany. (2mks)

d) i. State two reasons why Kenyans scrap metal Jua Kali industries are located in urban centres. (2mks)
ii. List two problems hindering decentralisation of industries in Kenya. (2mks)

KIRINYAGA CENTRAL SUB-COUNTY
GEOGRAPHY PAPER 1

MARKING SCHEME

1. a) Environment refers to all the external conditions that surround an organism and influence its behaviour while habitat is the home of an organism and life in the biosphere. (1 x 2 – 2mk)

b)
- Its a career subject in fields like survey.
- It creates international awareness.
- It imparts practical skills like; map reading, data collection, reading and analysis.
- It imparts values like patriotism thus a tool to better citizenship.
- Geography imparts values like environmental conservation thus conserving it.

(Any 3 x 1 – 3marks) Accept any correct answer)

2. a) Solar system refers to the sun and the heavenly bodies like planets moving around it. (2marks)

b) The passing star theory
- The Nebular cloud theory
- The big bang theory
- The creation theory (Any 3 x 1 - 3marks)

3.

a) Magma refers to the igneous materials originating from the interior of the earth but still beneath the earth surface while lava refers to the igneous materials originating from the interior of the earth nut looses some gases upon reaching the surface. (2 x 1) – 2marks)

b) geysers/ hot springs/ fumaroles, volcanic mountains, lakes (3marks)

4. a) Weathering refers to the break up/ disintegration/ break down of rocks near the surface due to chemical, physical or biological elements in sim. (2marks)

b) Exfoliation – It's a type of physical weathering that affects homogenous rocks - occurs in places with a large diurnal temperature range. During the day, the thin outer surface of rocks expands. At night, due to terrestrial radiation, the rock contracts. Repeated contraction and expansion exerts strain on the rock. The rock peels off in thin layers like an onion. This process is called exfoliation .(2marks)

5.

a) Rock refers to the aggregate of mineral particles that forms the solid part of the earth. (2marks)

b)

- Some minerals have streak – break along specific lines.
- Minerals have specific colours e.g gold is yellowish brown.
- Some minerals are made up of one elements while others are made up of more than one element.
- Minerals have a specific density/ gravity.
- Minerals vary in their tenacity – some are ductile others are malleable and others are brittle.
- Some minerals are opaque, others are translucent and others are transparent.
- Minerals vary in their degree of hardness – e.g diamond is very hard while talc is very soft.

(Any 3 x 1 – 3mks)

SECTION B.

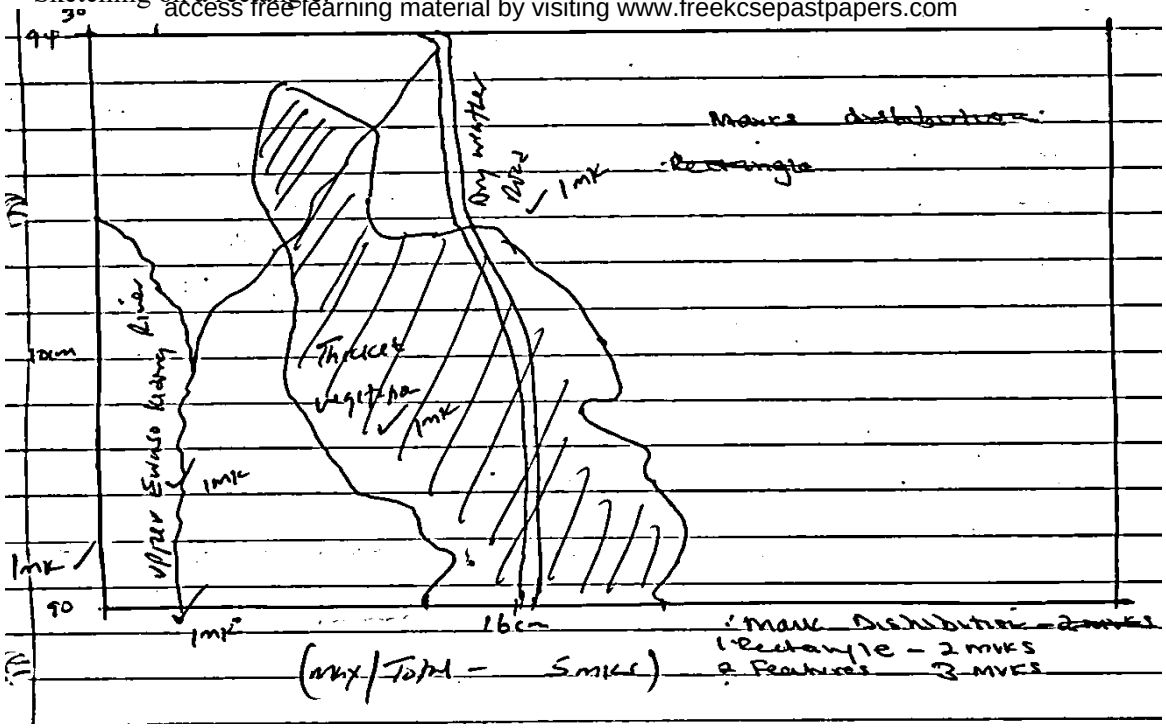
6. a) i. Six figure grid reference of Principal photo print on the S.W corner. 245904 (1mk)

ii. Bearing of pump house(3198) from the cattle dip in (2701)

$133^{o} \pm 1^{o}N$ (2marks)

b) i. Vertical interval is 20 meters. (1mk)

ii. Sketching on a rectangle.



(Max/ Total = 5mks) Mark distribution

1. Rectangle – 2marks
2. Features - 3marks

c) **Social services in Kijabe.**

- Education services due to presence or schools e.g in 2600.
- Security service as shown by the police station in arid square 3097.
- Healthy services as shown by the presence of a dispensary e.g in grid square 3700.
- Religious services as shown by presence of a church in grid square 3990.
- Water services – pump horse - 3993.

Any 2 x 1 with proof – (2 marks) Accept any correct answer.

d) **Relief of Kijabe.**

- There are hills in the area e.g. Kijabe hill.
- There are numerous river cut valleys in the area covered by the map.
- South western part of the area is gently sloping – as shown by the widely special contours.
- Part of the Northwest has dissected relief.
- Altitude of the highest point is above 2680meters.
- Eastern part of the area covered by the map is relatively steep. (there are closely drawn contours)
- There are some interlocking spurs on the eastern part of the area covered by the map.
- There is a river pass where River Waasia flows through.
- Escarpment.

(Any 5 x 1 – 5marks) Accept any correct answer where you can obtain proof from the map.

e) **Factors that have influenced livestock keeping in Kijabe**.

- Presence of water for livestock to drink from numerous rivers in Kijabe e.g River Ewaso Kedong.
- Sparse population in the western part of the area providing vast grazing areas.
- A well developed road network providing efficienly transport for livestock and their products.
- Dense settlement in parts of Kijabe providing market and labour for the livestock industry.
- Scrub vegetation providing pastures for beef cattle in western parts of a Kijabe.
- Cool conditions in eastern part of Kijabe as shown by the presence of the forest suitable for dairy cattle.
- Presence of facilities like cattle dip for pest control e.g ticks, cattle keeping.

(Any 4 x 2 = 8marks) Accept any factor with evidence.

7. a) **What is climate?**

Climate is the average weather conditions of a place over a long period of time usually 30 – 35 years.

(2marks)

b) **Factors influencing climate.**

i. **Latitude.**

- Latitude influences temperature – as latitude increases temperature decreases. On low latitude, sun rays travels a short distance leading to high temperature.
- On high latitude, sun rays travels a long distance leading to more heat loss thus lowering air temperature.
- On low latitude, sun rays covers a small surface area thus concentrating sunlight over a small area raising air temperature.
- On high altitude, sun rays covers a wider surface area thus lowering air temperature. (Any 2 x 2 = 4mk)

ii. **Altitude** affects climatic elements like : Rainfall, temperature and air pressure.

- Air pressure.
- On low altitude, the thick column of air above a point exerts more pressure- raises air pressure.
- On high pressure, thin atmosphere has less weight at a point lowering air pressure.

Temperature.

- On low altitude, thick atmosphere traps more terrestrial radiation raising air temperature.
- On high altitude, atmosphere is thin thus more heat is lost to the outer atmosphere lowering air temperature.

Rainfall.

- On high altitude , air cools adiabatically thus leading to condensation thus higher rainfall.
- On low lands, air is relatively warm thus lowering the relative humidity lowering amount of rainfall falling – thus lowlands have lower rainfall than highlands. (Any 2 x 2 explained – 4 marks)

iii. **Ocean current**.- mainly affects rainfall and temperature.
- Where wind blows over a warm ocean current, wind picks more moisture leading to high rainfall along the coast.
- Where wind blows over a cold ocean current, wind is cooled, condensation occurs over the sea, the wind reduce the the coast is cold and dry causing low rainfall.(Any 2 x 2 explained 4 marks)_

c) i. Aridity is the state of inadequate moisture supply leading to scanty vegetation cover while desertification is the process by which desert like conditions spread into places with potential for arable farming.
(1 x 2 = 2marks)

ii.
- Presence of cold ocean currents causes aridity along the coast.
- Presence of relief barriers like mountains causes aridity on lee ward slopes.

iii. Location of places far into antiwatal interior causes aridity.
iv. Presence of high temperature increases the rate of evaporation leads to aridity.
Low rainfall is an area leads to aridity. (4 x 1 = 4mks)

d) **Field study.**

i. Challenges during the field study.
- Poor visibility due to conditions like fog.
- Rainfall interrupting then field study.
- Faulty instruments thus giving wrong value.

(Any 2 x 1 = 2mks)

ii. **Follow up activities after the field study.**
- Analysing data collected/ presenting data collected.
- Writing reports after the field study.
- Displaying photos/samples after the field study. (3marks)

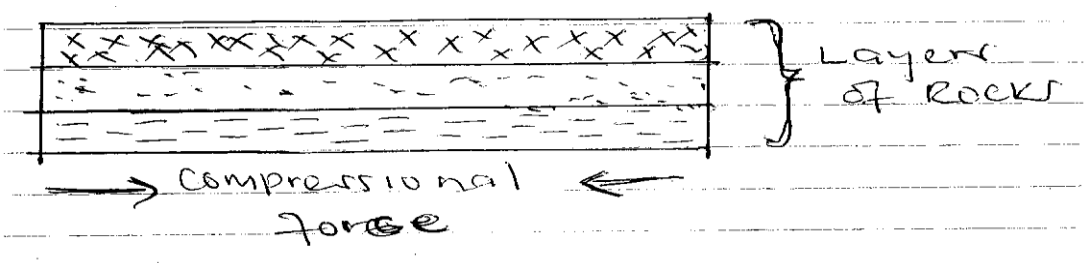
8. a) i. A normal fault forms when rocks are subjected to intense tensional forces while reverse fault is caused by strong intense compressional forces.

ii. **Identify 3 lakes found in the Eastern branch of rift valley in Kenya.**
- Lake Turkana
- Lake Bogoria
- Lake Baringo
- Lake Nakuru
- Lake Naivasha
- Lake Elementaita
- Lake Magadi (any 3 x 1 = 3marks)

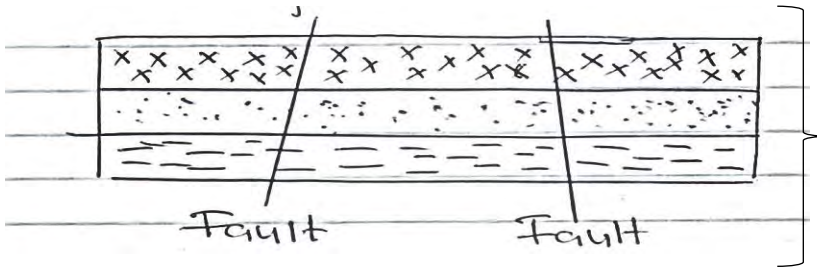
b) i. **Apart from compressional forces name two other forces that may cause faulting.**
- Tensional forces.
- Tear/shear/slip forces. (2 x 1 = 2marks)

ii. **With the aid of a well, labeled diagram describe how the Rift valley was formed through compressional forces.** (6 marks)

Layers of rocks are subjected to compressional forces.



Two parallel lines of weakness develop and these reverse faults.



Compressional forces may push the outer blocks towards each other and rocks fracture forming reverse faults. The outer block ride over the middle block and the middle block sinks or subsided or may remain stable. The sunken middle part forms a depression called a rift valley. Over time, the overhanging escarpment are worn off by agents of denudation.

R.V – RIFT VALLEY
F – FAULT
E –REMOVED BY DENYDATION

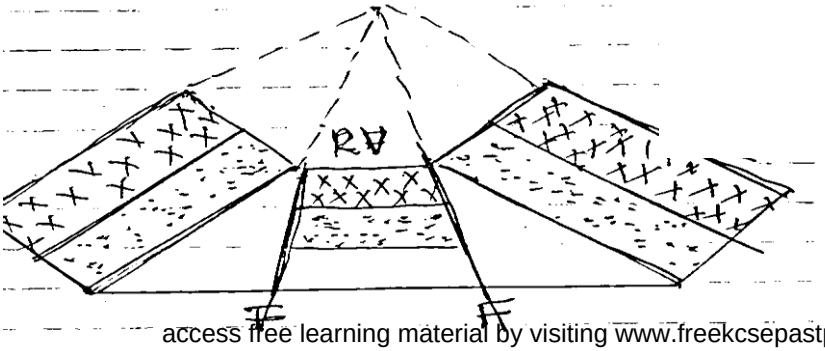


Diagram – 3 marks
Description – 3marks
TOTAL - 6marks

c) **Explain three ways in which faulting may influence drainage system.** (6marks)

- Some rivers may end up flowing along faults lines, thus forming a afault guided drainage pattern.
- Uplifting of land which follows faulting may block a river. This may cause it to reverse / change its direction of flow.
- When faulting occurs across a river valley, it may cause the river to disappear into the group through a fault line.
- If the rift valley occur in an enclosed area a basin may be formed. When rivers flow into the basin a lake may be formed. This basin may become an area of inland drainage.
- When faulting occurs across a river valley, vertical displacement of land may occur. The river forma a waterfall where it descends the newly formed escarp.
- Faulting may lead to the formation of escarpments with spring forming at the base due to exposure of water table. (3 x 2 = 6 marks)

d) i. **State three reasons why it is important for the student to have a previsit of the area.** (3marks)

- To enable them draw up study objectives/ hypothesis.
- To enable them draw a route map.
- To enable them identify / sort out relevant tools or equipment for the study.
- To identify suitable method of data collection.
- To seek permission from the occupants of their site of study.
- To enable them prepare financially. (3 x 1 = 3marks)

ii. **Give three disadvantages of direct observation in the study of such an area.** (3marks)

- It is expensive when one has to travel long distances.
- It is time consuming.
- It is tiresome to conduct.

- It is limited only to direct sources/ primary sources.
- It is only suitable to the sighted people. (3 x 1 = 3marks)

9. a)

i. **Name three types of glacier.**

- valley glacier.
- continental glacier/ ice sheet.
- piedmont glacier.
- cirque glacier. (3 x 1 = 3marks)

ii. **State two factors that influence glacial erosion.**

- Where the gradient is steep, speed of glacier increases, increasing the rate of glacial erosion.
- Where the rocks are well jointed and less resistant, the rate of glacial erosion increases.
- Where hard load is embedded is the glacier, the load acts as a tool of abrasion increasing the rate of glacial erosion.
- Heavy thick glacier exerts more pressure in the rock thus increasing the rate of erosion.

b) **Name two factors found in an outwash plain.**

Kames, Eskers, till/ morrain, kettle lakes (any 2 x 1 = 2marks)

c) i. **features**; a) pyramidal peak (1mark)

b) Arete (1mark)

c) Hanging valley (1mark)

d) U- shaped valley/ Glacial trough (1mark)

ii. **Formation of a pyramid peak.**

- There exist several shallow depression on the mountain sides.
- Falling snow fills the depression. The accumulating snow compacts snow beneath forming a thick glacier. Due to force of gravity, the snow moves down slope thus erodes.
- The plucking action of the ice enlarges the hollow so that more ice collects in them.
- Freeze and thaw action of the ice leads to the expansion of cracks/ hollows making them large basins which are called cirques.

- Nivation into backwalls of the hollows make them recede into the mountain side the cirques recede towards each other.
- Steep sided, knife edged ridges/ aretes converge at the top of the mountain forming a jagged peak/ horn (surrounded by corries/ cirques.

(Any 3 x 1 = 3marks)

Feature D formation.

- A pre-existing V- shaped river valley is filled by falling snow, that compacts into ice/ glacier.Due to weight and gravity, the glacier moves..
- The glacier erodes the V- shaped valley by abrasion and plucking process vertically and lateral erosion.
- The end spurs are truncated/ trimmed/ cut.
- The ice melts away leaving U- shaped valley. This feature is called a glacier trough.

(Any 3 x 1 = 3marks)

d) **Explain the significance of upland glaciated features to human activities.** (6marks)

- The warm glaciated valley are suitable for livestock farming/ cultivation.
- Glacial upland areas form magnificent features that encourages recreation and tourism.
- Glaciated mountains encourage the growth of forests hence lumbering is practiced.
- Waterfalls formed in glaciated uplands provide suitable sites for hydro – electric power production.
- Corrie lakes / tarns offer suitable areas for trout fishing.
- U- shaped valleys form natural route ways.

10. a) i. **Name two major deserts found in Africa.** (2marks)

Sahara
Kalahari
Namib (2 x1 = 2marks)

ii. x – Horn
y – Eddy current
z – steep concave leeward slope (3mks)

b) **Describe the processes through which wind transports its load.** (6marks)

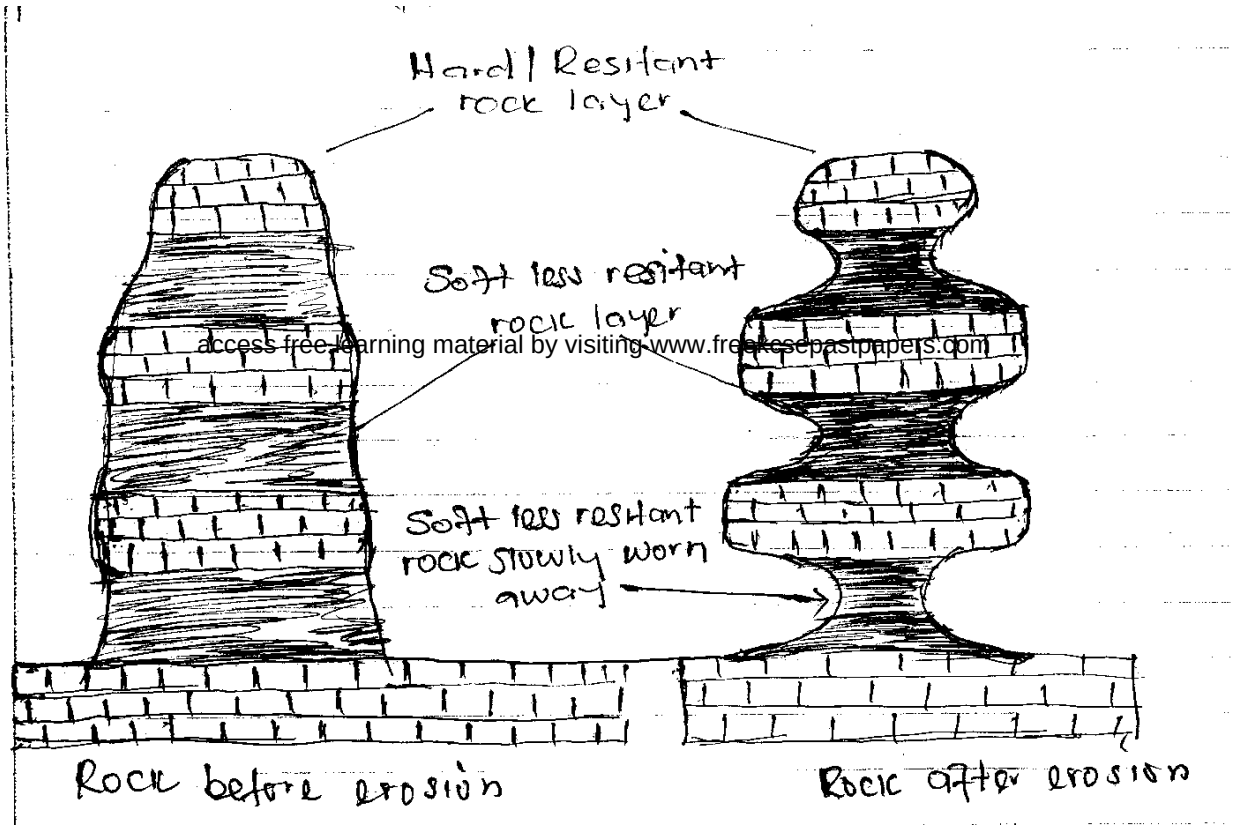
Saltation. Its movement of moderately heavy wind load.
It is where coarse grained sand particles are transported through a series of bouncing/ jumping along the surface.
(2 x 1 = 2marks)

Suspension. Its movement of lightest wind load.
It is where very fine material is picked by wind raised high and blown over long distance.
(2 x 1 = 2marks)

Surface creep/ rolling. Its movement of the heaviest wind load.
It is where large / heavy materials are rolled and pushed forward by wind along the surface.
(2 x 1 = 2marks)

c) **Using a well labelled diagram described how a rock pedestal is formed.** (6marks)

- They are formed where the rock consists of alternating layer of hand and soft rocks.
- The layers lie horizontal and in the path of the wind.
- The rocky mass is eroded by abrasion.
- The soft layers are worn faster than the hard layers.
- There is greater erosion near the ground by abrasion.
- This gives the rock mass which is irregular in shape with protruding layer that alternate with hollows called rock pedestal. (4 x 1 = 4marks)



EXPLANATION 4mks
DIAGRAM 2mks

d) **Explain four ways in which desert features are of significance to human activities.** (8 marks)

- Desert features form good sites for tourist attraction thereby earning foreign.
- Wind deflation hollow/ oasis are sources of water for domestic / agricultural use.
- Wind deposited sands / loess form fertile plains for farming.
- Salty flats are economically used for salt production.
- Shifting sand dunes / hinder transport activities.
- Desert sceneries are ideal for film making.
- The vast sand sea are ideal for military / nuclear testing.

(Any 4 x 2 = 8 marks)

KIRINYAGA CENTRAL SUB-COUNTY EFFECTIVE 40 EXAMINATION 2021
GEOGRAPHY PAPER 2
MARKING SCHEME

1. a) Sources of population data.
- National census/ census reports.
- Sample survey.
- Registration of births and deaths/ marriages/ migration.

(any 2 x 1 = 2mks)

b) Characteristics of the population.
- Low fertility rate as show by short bars at the base.
- Low mortality rate.
- Increased life expectancy/ ageing population.
- Declining birth rate.
- Low dependency ratio.
- Equal sex ratio/ ratio of males to females almost equal .
- Low infancy mortality rate.

(any 3 x 1 = 3mks)

2. a) forms renewable energy being commercially developed in Kenya.
- Solar energy.
- Wind power.
- Geothermal energy. (any 2 x 1 = 2mks)

b) Positive effects of energy crisis.
- Encourages the controlled use and conservation of available energy resources / Encourages efficiency in energy use lowering consumption of power..
- Encourages the exploitation and development of new oil fields to meet the demand or to reduce
- importation.
- Makes exporting countries to enjoy and earn more foreign exchange.
- Has led to exploration / establishment of cheaper sources of energy to supplement or replace oil.

(any 3 x 1 = 3mks)

3. a) What do you understand the term regional trade?
- Regional trade refers to trade among countries in the same geographical region.

(2 x 1= 2mks)

b) Problems facing trading blocks.
- Political differences among members thus weakening the trading blocs.
- Some member states who belong to more than 1 trading block thus minimizing their participation to a
- certain trading block.
- Some countries exiting a trading blocks e.g U.K existimg in EU.. (3 x 1 = 3mks)

4. a) Negative effects of Covid – 19 pandemic on tourism industry in Kenya.
- It has increased the cost of living hence reducing the amount available for domestic and international tourism.
- Had led to travel ban by countries overseas and thus has reduced the number of tourists.
- It has led to closure of local hotels that accommodate tourists and loss of employment.
- The curfew hours had discouraged movement within the countries and this had discouraged domestic tourism.
- Adverse publicity abroad due to Covid – 19 has portrayed Kenya as an unsafe tourist destination.
- This had scared away tourists.
- Increased inflation/ cost of living had increased the traveling and accommodation cost had reduced the number of tourist.
- Low earnings as a result low traveler confidence over safety issues. (any 3 x 1 = 3marks)

b) Solution to problems facing tourists.
i. Negative altitude towards domestic tourism.
- Increased awareness through the media on tourist attraction in Kenya / increased public campaigns.
- Lowering charges in hotels during the tourist off peak seasons.
- Lowering entry fees to parks to Kenyans.
- Proper maintenance of roads in the parks.

- Holding festivals to attract domestic tourists / Trade fairs that showcase tourism products thus attracting tourists from new markets. (any 1 x 1 = 1mark)

ii. Adverse publicity abroad.

- Increased public campaigns abroad to promote Kenya as a tourist destination.
- The ministry of Tourism/ Kenya Tourism Board to attend seminars and workshops so as to market the Kenya Tourism, correct the misconceptions.
- Strengthening co-operation between countries.
- Online tourism marketing.
- Establishing Travel protocols for tourists to feel safe to travel.

(any 1 x 1 = 1mark)

5. a) i. Lake L – Lake Superior (1 x 1 = 1mark)

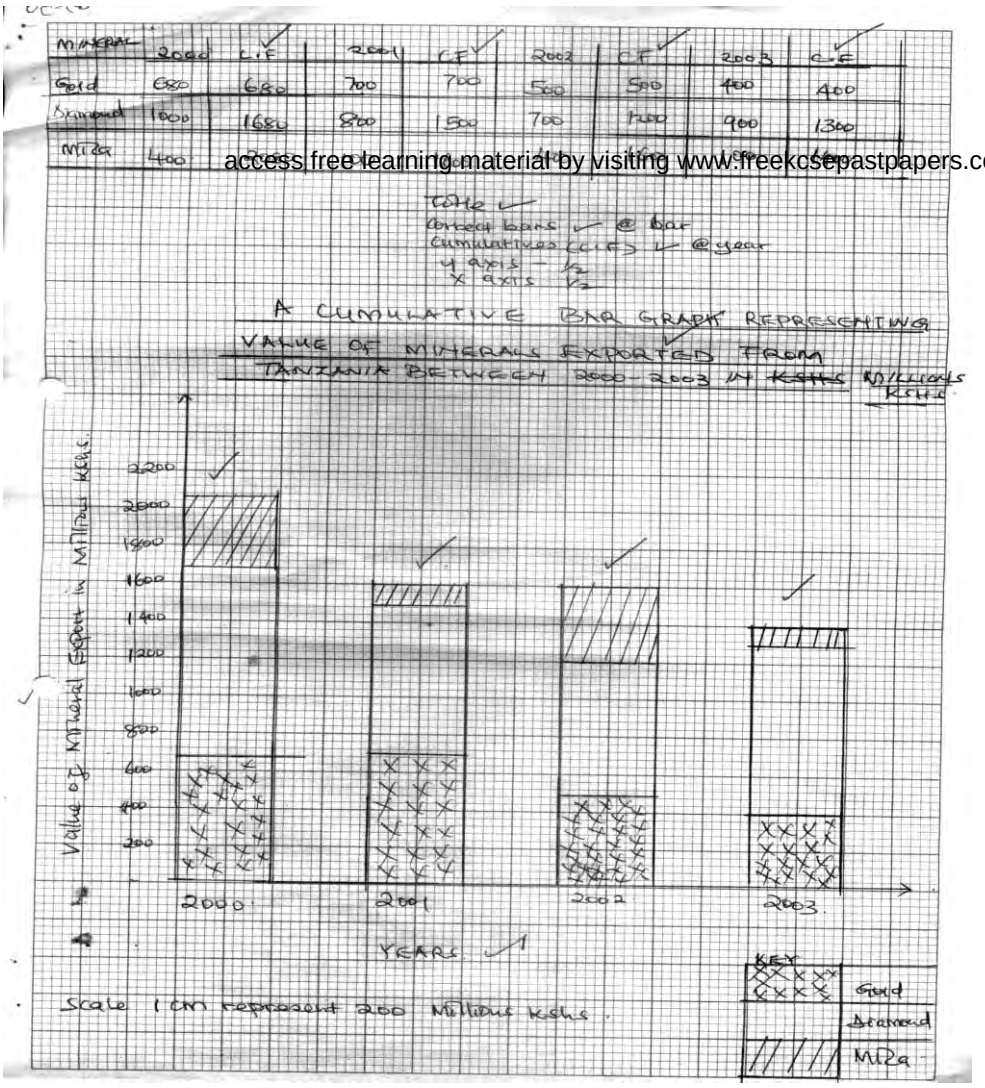
ii. Waterfall M = Niagara falls (1 x 1 = 1mark)

iii. Port N - Quebec (1 x 1 = 1mk)

b) Measures taken to improve the great lakes and the St. Lawrence sea way.

- construction of canals to pass obstacles / rapids and waterfalls and connect lakes.
- Deepening of the shallow parts of th sea way by dredging.
- Construction of reservoirs/ dams to remove rapids and waterfalls.
- Construction of locks to raise the water levels, thus overcoming problem of gradient along the watering.
- Removal of rocky islands by blasting.
- Introduction of ice breakers in winter to keep the route open at the seaward end.
- Installation of radars and lights on ships to avoid accidents at the time of fog and mist at the mouth of St. Lawrence river. (any 2 x 1 = 2mks)

6. a)



ii. Disadvantages of cumulative bar graphs.

- Are difficult to construct.
- Construction procedure involves a lot of calculation.
- Difficult to interprete the graphs because the bars are cumulative.
- Variables of different kinds are placed on one bar giving false impression.
- The number of components that can be represented on a single bar are limited.
- Tedious to determine the actual values of individual components from the graph.
- Difficult to see fluctuation over a period of time at a glance.

(any 3 x 1 = 3mks)

b) Percentage change in the value of mica exported between 2002 and 2003.

2002 – 400 2003 – 100

% change $\frac{100 - 400}{400} \times 100$

$= {}^{-300}/_{400} \times 100 = -75\%$

= -75% or 75% decrease (2mks)

N/B (-) or decrease must be indicated on score full marks.

c) Opencast method of mining.

- The unwanted materials / overborder lying on top of the mineral are removed. The soft mineral ore is removed by digging/ quarrying/ stripping.
- Any hard rock/ mineral ore is broken by blasting.
- Huge power shovels are used to dug up mineral deposits.
- The mineral ore is loaded onto trucks/ railway wagon to the processing plant.

NB(The procedure must flow to award) 1 x 4 = 4marks

d) Factors influencing the exploitation of minerals.

i. Quality of ore.

- High quality ore are more economical mica and they yield a large amount of metal.
- Minerals that are concentrated within small areas of rock are easier and more economical to mine.
- Low quality ores are not exploited because their metal content is low.
- Minerals that are concentrated within small areas of the rock are easier and cheaper to mine.

(any 1 x 2 = 2mks)

ii. Methods of extraction.

- The mining method used by a mining company will depend on the mode of occurrence of the mineral.
- Opencast mining method is cheaper than other methods of mining.
- Deep shaft/ underground mining is used where minerals occur at great depth in the earth's crust is very expensive. (any 1 x 2 = 2mks)

iii. Technological advancement.

- Advanced technology allows for effective exploration of minerals leading to reduced wastage.
- High level of technology reduces the destruction of environment.
- Low level of technology limits exploration, exploitation and low quantity is mined.
- Advanced technology improves mining operations leading to high quality/ large quantity mineral products.
- High level technology allows for effective exploration of minerals leading to accurate location of minerals.

(any 1 x 2 = 2mks)

7. a) i. Differentiate mixed farming from Arable farming.

- Mixed farming is the growing of crops and rearing animals on the same piece of land while Arable. farming is growing of crops for subsistence or commercial purposes. (1 x 2 = 2mks)

ii. State three characteristics of mixed farming.

- Farms are small in size.
- A variety of crops are grown on the same farm.
- Few animals are kept and zero grazing is practiced in some farms.
- Labour intensive in most activities.
- Animals are kept and crops grown for both food and cash.
- Manure or fertilizer are applied.
- Low mechanization is used in a few farms. (3 x 1 = 3mks)

b) i. Name three counties where tea is grown in Eastern highlands.

- Meru
- Embu
- Nyeri
- Kirinyaga
- Murang'a
- Kiambu
- Nakuru (3 x 1 = 3mks)

ii. State four human factors that favour tea growing in Kenya.

- Availability of labour for the tea picking from a high population.
- Availability of capital/ credit facilities for farmers to buy inputs.
- Large local and export markets / tea products.
- Processing factories near the tea growing areas that buy and process the tea leaves.
- A well developed network of feeder roads to transport tea to the factories / markets.
- Extension services offered to teach farmers modern tea growing methods for high yields and quality.

(4 x 1 = 4mks)

ii. Describe tea processing.

- Green leaves are transported in airy baskets to collecting centres.
- Leaves are sorted out and then weighed.
- Leaves are then transported to processing factories by lorries filled with airy bags.
- At the factory leaves are weighed again.
- Leaves are then spread out on long wire bags.
- Leaves are dried or withered by passing warm air beneath the trays.
- Dried leaves are chopped or crushed using a set of rollers to control moisture and mountain taste.
- Leaves are fermented in large containers to reduce tanic acid which changes them to grey brown colour.
- Leaves are roasted by passing them through a conveyor belt to a tunnel with high temperatures.
- The leaves dry up and turn black in colour and are then cooled for 24 hours.

- Leaves are sifted, tasted and graded for classification.
- Graded leaves are weighed and packed in tea chests or ion small packages (sequence important)

(6 x 1 = 6marks)

c) Your class carried out field study on a horticultural farm in your county.

i. State two objectives of the study.

- To find out types of crops grown in the farm.
- To investigate on problems experienced in the farm.
- To find out where horticultural products are sold. (2 x 1 = 2marks)

(Award any relevant objective)

N/B Must start with 'To' study/investigate/establish/find out……

ii. Name three types of flowers you could have identified.

- Roses
- Orchids
- Carnations
- Gladioli
- Lilies
- Arthurium
- Chrysanthemums
- bulbuous flower (Any 3 x1 = 3mks)

iii. Give two methods you would use to record the data during the field study.

- Photographing/ Fuming
- Note taking.
- Filling in the questionnaires.
- Sketching
- Tape recording.
- Labelling samples. (2 x 1 = 2marks)

8. a) i. Define the term irrigation.

This is controlled artificial application of water to agricultural land for growth of crops in areas with insufficient rainfall. (1 x 2 = 2 marks)

ii. Apart from canal irrigation mention three methods of irrigation used in Kenya.

- Water lifting method.
- Furrow irrigation.
- Drip irrigation
- Trickle irrigation.
- Sprinkler or overhead irrigation.
- Flood irrigation or basin irrigation. (3 x 1 = 3 marks)

iii. State two benefits of irrigation over natural water supply.

- it ensures a steady and reliable water supply.
- Irrigation makes cultivation possible in arid areas.
- River water when used for irrigation brings silt which is good for crops.
- Cultivation can be done throughout the year and this maximizes use of land resources.
- When dams are created they become multipurpose; flood control, water storage and generation of H.E.P.

(2 x 1 = 2mks)

b) i. Identify three crops grown at Perkerra irrigation scheme.

- Seed maize
- Onions
- Chillies
- Pawpaws
- Watermelons (3 x 1 = 3marks)

ii. State three physical conditions that favoured establishment of Perkerra irrigation scheme.

- Gently sloping land allows mechanization and easy flow of irrigation water by gravity.
- Availability of irrigation water supplies from River Perkerra for continuous growth of crops.
- Presence of deep fertile soils ,loam or alluvial soils suitable for growth of variety of crops.

- Semi arid or low rainfall causing dry conditions making it necessary to irrigate the area.
- Extensive land that is sparsely populated which allows expansion of the scheme.

(3 x 1 = 3marks)

iii. Explain the problems facing irrigation farming under the following sub - headings. Human diseases.

The stagnant water in the plots and canals encourages the breeding of snails and mosquitoes which spread bilharzias and malaria respectively. That affects farmers and even kill them.

(1 x 2 = 2marks)

Siltation.

Siltation in the canals and reservoirs causes blockage which reduces water flow in the plots and is expensive to dredge/ reduces water available for irrigation farming. (1 x 2 = 2maks)

Floods.

Some irrigation schemes such as Bunyala in Busia and Hola in Tana River are affected by flood water during the rainy season which destroys crops and transport network of people. (1 x 2 = 2marks)

c) i. Give two methods used to reclaim land in the Netherlands.

- Building of dykes
- Planting reed/ vegetation to speed up drying of land.
- Cutting drainage ditches or canals to drain away water back to sea.
- Pumping water out of the polders to the sea.
- Constructing underground drainage pipes.
- Treating the soil with chemicals to reduce acidity.
- Flushing the land with flesh water to reduce excess salts.

(2 x 1 = 2 marks)

ii. Explain two factors that favoured land reclamation in the Netherlands.

- The gently sloping or flat lowland coast which facilitated easy mechanization.
- The deep, boulder clay soils at the coast suitable for growing horticultural crops.

- Availability of skills and technology that was employed to build dykes and other facilities in the project.
- Availability of capital from the government and rich merchants that was invented in the construction of dykes, canals and pumping stations.
- The invention of diesel and electric pumps that enabled pumping of water from the reclaimed areas.
  (2 x 2 = 4 marks)

9. a) i. part from pelagic fish, name other two types of fish.

- Dermasal fish
- Anadromous fish
- Fresh water fish (2 x 1 = 2 marks)

ii. State three characteristics of pelagic fish .

- Lives near the water surface or in shallow waters in the sea.
- Are small in size.
- Live and move in shoals or large groups.
- Migrate from place to place within the sea. (3 x 1 = 3 marks)

b) i. Name the fishing grounds marked

x – North west Atlantic (1 x 1 = 1 mark)
y – North East pacific (1 x 1 = 1 mark)

ii. Identify the ocean currents.

W – Oyashio cold currents (1x 1 = 1 mark)
T- Kurashio warm current (1x 1 = 1 mark)

iii. Name ocean

R- Pacific ocean (1 x 1 = 1 mark)

iv. Explain four physical factors that favour development of fishing ground M.

- Broads and shallow continental shelf provides suitable conditions for growth of planktons which are food for fish.
- Low temperature or cool waters favourable for fish survival.
- Rugged or mountainous landscape limit agricultural activities leaving fishing as an alternative economic activity.
- The indented or irregular coastlines provide ideal fishing breeding sites and sheltered bays ideal for setting up fishing valleys and ports.
- Convergence of warm Kurashio and cool Oyashio ocean currents results into upwelling of ocean water which brings minerals to the water surface for growth of planktons which is food for fish or upwelling of water increases oxygen supply for fish hence their survival or the warm Kurashio ocean current makes area ice free which encourages fishing throughout the tear or the currents moderate temperature which favour growth of plankton. (4 x 2 = 8marks)

c) i. Apart from drifting method name two modern methods of fishing.

- Purse seining/ seining method.
- Trawling
- Long lining (2 x 1 = 2 marks0

ii. Describe how drifting method is used to catch fish.

- A large net stands vertically like a tennis net in sea water attached to a drifter ship or boat.
- It has floats on the upper side to keep it floating in water.
- It has weights on the lower side to make it sink and stand vertically below the water surface.
- The fish that try to swim through the net are trapped by their gills and cannot move forward or backwards due to the small net mesh.
- After enough fish has been trapped the net is pulled by the drifter ship to the shore.
- The fish is then removed from the net and taken for processing.
- The net is then returned back into the sea for more catch. (5 x 1 = 5marks)

10. a) i. Apart from industrial inertia state two factors which influence industrial location.

- Availability of power.
- Availability of capital.
- Availability of water
- Availability of raw materials.
- Availability of market.
- Availability of power.
- Government policy.

- Availability of skilled labour.
- Availability of transport and communication (2 x 1 = 2 marks)

ii. State two factors that may cause industrial inertia.

- Availability of skilled or experienced workers who are unwilling to move away makes investors reluctant to relocate.
- Development of alternative energy sources use H.E.P which can be used after depletion of local power resources .
- Presence of well developed transport and communication network in the original area makes investors reluctant to move to new sites.
- The high cost of building new plant, new buildings and buying new machinery.
- Interdependence of industries as some new industries depending on the original one could have developed offering a ready market. (2 x 1 = 2 marks)

iii. Apart from manufacturing industries name one other type of industries.

- Service industry
- Processing industry (1 x 1 = 1 mark)

iv. Name two items assembled in Kenya.

- Electrical appliances: Radios, TVs, Computers.
- Vehicles - cars/ trucks/motorcycles
- Bicycles (Each item x 1mark) (2 x 1 = 2marks)

b) Name

River R – River Rhine (1 x 1 = 1 mark)
Town K – Duisberg (1 x 1 = 1 mark)
Canal X – Lippeseite canal (1 x1 – 1 mark)

c) i. List three types of coal found in Ruhr region of Germany.

- Bitiminous coal or cooking coal
- Anthracite coal
- Lignite coal or brown coal
- Peat coal (3 x 1 = 3 marks)

ii. Explain three reasons that caused decline in use of coal as source of energy in Ruhr region.

- competition from the use of other clean energy sources like HEP and natural gas has led to closure of small coal mines.
- Exhaustion of more accessible coal seams made it expensive to exploit the deeper mines and its expensive to open new ones.
- Coal is bulky and expensive to transport compared to other energy types which are easier and cheaper to transport.
- Steel is increasingly made from sever metal reducing use of coal for smelting iron ore.
- Mining and use of coal led to environmental degradation, depletion of land and pollution that discouraged its continued use.
- Reduced exploration of Ruhr coal mines as new iron and steel industries are located at the coast where they use imported coal and iron ore. (3 x 2= 6marks)

iii. Other than iron and steel industries , name two types of industries located in the Ruhr industrial region.

- Engineering industries.
- Chemical industries.
- Textile industries.
- Oil refining.
- Electronic industry.
- Food processing.
- Fertiliser making industries.
- Service industries like banking etc
- Cutlery and surgical instruments industry. (2 x 1 = 2 marks)

d) i. State two reasons using most Kenya's scrap metal Jua Kali

- The great access of hydro - electric power to run machines in urban areas.
- The large and readily available scrap metal in the urban centres.
- The large market for the finished products among the large urban population.
- The large population of cheap labourers.
- The high chances of technology transfer from formal industries located in urban areas.
- The high chances of credit facilities from financial institutions.
- The high entrepreneurial skills by the urban population.
- The willingness of the urban residents to be self – employed to earn a modest livelihood.(2 x 1 = 2 marks)

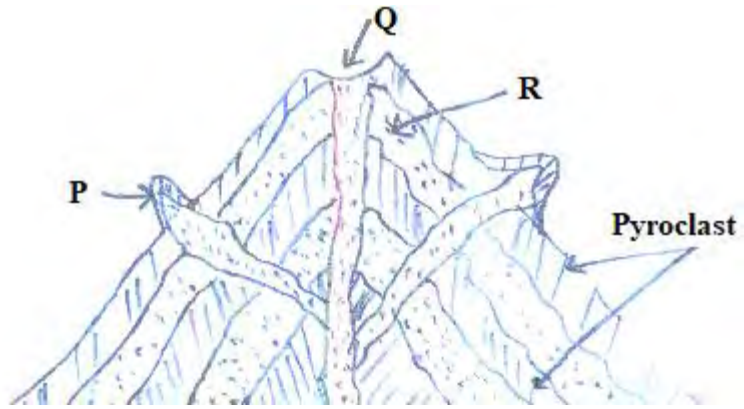
ii. List two problems hindering decentralization of industries in Kenya.

- Insecurity in some areas discourage investment in such areas.
- Inadequate market in rural areas discourage investors from relocating industries away from urban centres.
- Some industries depend on each other for raw materials/ market/ services hence it is difficult to separate or relocate them. (2 x 1= 2marks)

KIRINYAGA WEST
312/1
GEOGRAPHY PAPER 1
DECEMBER 2021

SECTION A. (25 marks)Answer all the questions in this section.

1. (a) Apart from the sun, name two other heavenly bodies. (2 marks)
   (b) State **three** effects of revolution of the earth around the sun. (3 marks)
2. (a) Name **two** planetary winds in the Northern hemisphere. (2 marks)
   (b) State **three** natural causes of climate change. (3 marks)
3. (a) What is an earthquake? (2 marks)
   (b) Give **three** human causes of earthquake. (3 marks)
4. Use the diagram below to answer questions 4(a) and (b)



   (a) Name the parts marked **P, Q** and **R**. (3 marks)
   (b) State **two** characteristics of the rock material above. (2 marks)
5. (a) Name **two** type of mass wasting. (2 marks)
   (b) State **three** factors that influence movement of materials in mass wasting. (3 marks)

SECTION B. (75 marks)
Answer question 6 and any other 2 in this section.

6. Study the map of Kijabe (1:50000) provided and use it to answer the questions that follow.
   (a) (i) What is the contour interval (V.I). (2 marks)
   (ii) Name **two** types of roads on the area covered by the map. (2 marks)
   (b) (i) What is the six figure grid reference of the Pump House near Githoito. (2 marks)
   (ii) Mention **one** hydrographic feature in the map extract. (1 mark)
   (iii) What is the bearing of the trigonometrical station SKP209 from the quarry near Kiabogo? (2 marks)
   (c) Draw a rectangle measuring 12 cm by 8 cm enclosed by eastings 29 and 35 and northings 90 and 94. (1 mark)
   On it mark and label. (4 marks)
   - Thickets
   - Power line
   - River Upper Ewaso Kedong
   - All weather road bound suface

   (d) Citing evidence from the map, explain **three** physical factors influencing the growth of coffee in the area covered by the map. (6 marks)
   (e) Describe the relief of the area covered by the map. (5 marks)
7. (a) (i) What is a rock? (2 marks)
   (ii) Give **three** examples of hyperbyssal rocks. (3 marks)
   (b) (i) State **three** characteristics of sedimentary rocks. (3 marks)
   (ii) Describe how mechanically formed sedimentary rocks occur. (3 marks)
   (c) Explain **four** benefits of rocks to the economy of Kenya. (8 marks)
   (d) Students of Amu Secondary school carried out a field study on rocks within their school

environment.

(i) Give **two** reasons why they needed a working schedule. (2 marks)

(ii) Suggest **two** solutions to the problem they are likely to encounter during the study. (2 marks

(iii) State **two** follow up activities they undertook after the field study. (2 marks)

8. (a) Mention **two** types of earth movement. (2 marks)

(b) Explain how the following factors causes earth movement:-

(i) Gravitational force (2 marks)

(ii) Convectional currents in the mantle (2 marks)

(c) (i) Apart from fold mountains, name three other features resulting from folding. (3 marks)

(ii) With the aid of a labeled diagram, describe the formation of a thrust fold. (5 marks)

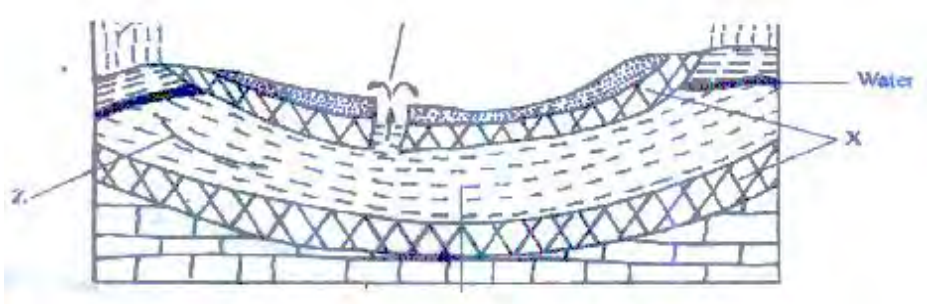
(d) Explain **four** effects of fold mountain on human activities. (8 marks)

(e) You are supposed to carry out a field study of an area affected by folding:-

(i) Give **one** reason why you would need a map of the area of study. (1 mark)

(ii) Identify **two** methods you would use to collect data during the field study. (2 marks)

9. The diagram below represents an artesian basin. Use it to answer question (a)



(a) Identify:-

(i) The layers marked **X** and **Y** (2 marks)

(ii) The process marked **Z**. (1 mark)

(iii) State **four** ideal condition for the formation of artesian well. (4 marks)

(b) Explain how the following factors influence the amount of underground water in limestone areas.

(i) Rainfall (2 marks)

(ii) Vegetation cover. (2 marks)

(c) (i) Apart from stalagmites, name three other underground features formed in limestone areas. (3 marks)

(ii) With the aid of a diagram, describe how a stalagmite is formed. (8 marks)

(d) Give three reasons why there are few settlements in karst landscape. (3 marks)

10. (a) (i) Define the term soil. (2 marks)

(ii) Mention **three** components of soil. (3 marks)

(b) (i) Differentiate between Eluviation and Illuviation. (2 marks)

(ii) Explain how the following factors influence soil formation.

- Climate (2marks)
- Organic factors (2 marks)

(c) (i) State **two** factors that influence the formation of soil catena. (2 marks)

(ii) Explain **three** effects of soil erosion. (6 marks)

(d) Explain **three** ways of conserving soils. (6marks)

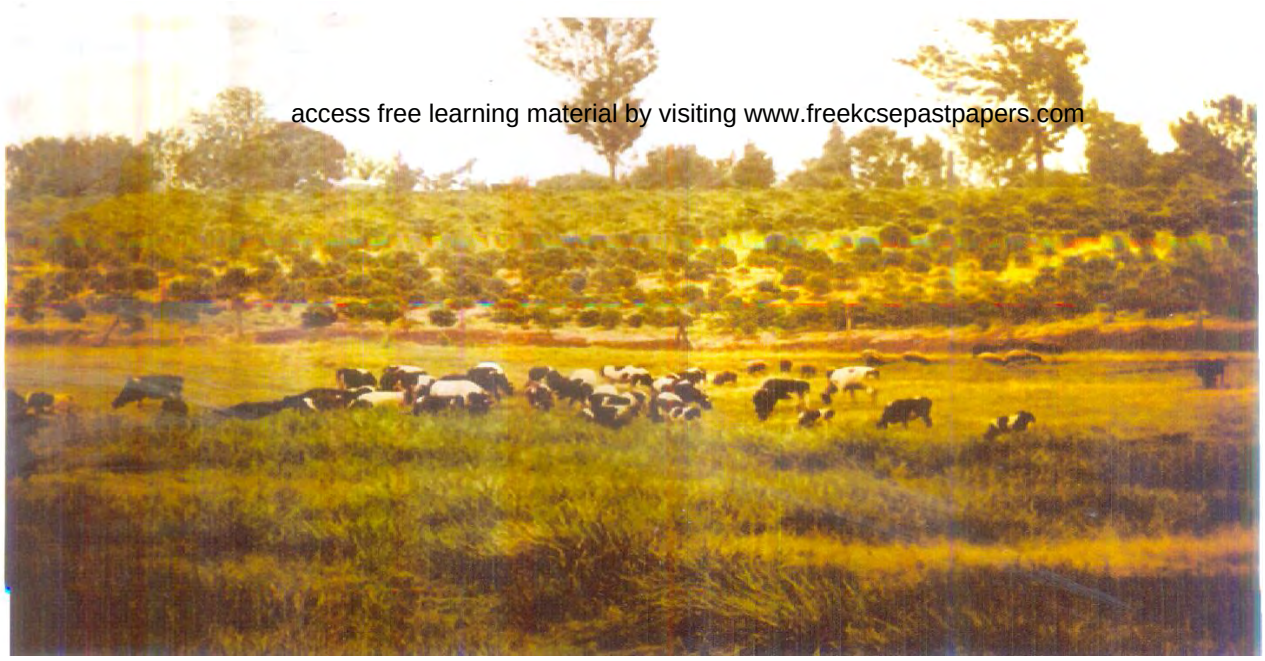
KIRINYAGA WEST
312/2
GEOGRAPHY PAPER 2
DECEMBER 2021

SECTION A. (25 marks)
Answer all the questions in this section.

1. (a) Name **two** breeds of dairy cattle reared in Kenya. (2 marks)
   (b) State **three** physical factors that favour dairy farming in Kenya. (3 marks)
2. (a) Differentiate between renewable and non-renewable sources of energy. (2 marks)
   (b) State **three** advantages of using solar energy. (3 marks)
3. (a) Define the term transport. (1 mark)
   (b) Identify **four** factors that hinder the development of railway lines among African countries. (4 marks)
4. (a) Distinguish between population distribution and population density. (2 marks)
   (b) Name **three** type of information that can be obtained from an age-sex population pyramid. (3 marks)
5. (a) Give **two** methods of placer mining. (2 marks)
   (b) State **three** uses of diamonds. (3 marks)

SECTION B. (75 marks)
Answer question 6 (compulsory) and any other 2 questions from this section.

6. Study the the photograph below and use it to answer the questions that follow.



   (a) (i) Name the type of the above photograph. (1 mark)
   (ii) Identify the type of agriculture shown in the photograph. (1 mark)
   (b) (i) Draw a rectangle measuring 12 cm by 10 cm to represent the area covered by the photograph. On the rectangle mark and label the following:- (4 marks)
   - Cows
   - Coffee trees
   - Grass

   (ii) State **three** advantages of the type of farming shown in the photograph. (3 marks)
   (c) Explain **four** problems facing dairy farming in Kenya. (8 marks)
   (d) Explain **four** differences between dairy farming in Kenya and Danmark. (8 marks)
7. (a) (i) State **three** factors that influence exploitation of minerals. (3 marks)

(ii) Name **two** countries in the Middle East which are important oil producers. (2 marks)

(b) (i) State **two** ways in which open cast mining affects the environment. (2 marks)

(ii) Explain **three** ways in which exploitation of Trona in lake Magadi is important to the economy of Kenya. (6 marks)

(c) Name the **main** gold mining area in South Africa. (1 mark)

(d) Identify **four** problems facing diamond mining in South Africa. (4 marks)

(e) Your class intends to carry out a field study on the effects of open cast mining on the environment within your area.

(i) State **four** preparations you will make for the study. (4 marks)

(ii) Give **three** method you will use to present the data collected. (3 marks)

8. (a) (i) Give **two** methods used to drain swamps in Kenya. (2 marks)

(ii) State **three** factors that influence the location of Perkerra Irrigation Scheme. (3 marks)

(b) (i) Apart from rice, name two other crops grown in Mwea Irrigation scheme. (2 marks)

(ii) Explain **three** benefits that resulted from reclamation of Mwea scheme. (6 marks)

(c) (i) State **four** benefits of land reclamation in the Netherlands. (4 marks)

(ii) Outline **four** comparison of land reclamation in Kenya and the Netherlands. (8 marks)

9. (a) (i) Define the term fisheries. (2 marks)

(ii) Give **three** reasons why fresh water fishing is more developed in East Africa than marine fishing. (3 marks)

(b) (i) Name **three** methods of fishing used in deep sea fishing. (3 marks)

(ii) Explain **four** ways in which fisheries in Kenya can be conserved. (8 marks)

(c) (i) Explain **three** physical factor's that favour fishing in Japan. (6 marks)

(ii) Outline **three** reasons why the government of Kenya should encourage fish farming in Kenya. (3 marks)

10. (a) (i) Apart from lighting name **two** other environmental hazards associated with climatic conditions. (2 marks)

(ii) Explain **three** effects of land pollution to the environment. (6 marks)

(b) (i) Give **two** effects of each of the following environmental hazards:-

(i) Lightning (2 marks)

(ii) Pests and diseases. (2 marks)

(ii) Outline **three** measures that may be taken to combat pollution. (3 marks)

(c) (i) Give **two** causes of radiation pollution. (2 marks)

(ii) Identify **two** ways in which farming activities contributes to water pollution. (2 marks)

(iii) Explain **three** reasons why water resources should be managed and conserved. (6 marks)

KIRINYAGA WEST
GEOGRAPHY PAPER 1

MARKING SCHEME

SECTION A

1. Apart from the sun, name two other heavenly bodies. (2 mks)

– Stars
– Natural satellites eg moon
– Comets
– Meteors
– Meteorites
– Asteroids Any first 3 x 1 = 3 mks

(b) State three effects of revolution of the earth around the sun.(3 mks)

– Causes lunar eclipse
– Causes change in the position of the midday sun at different times of the year.
– Causes varying length of the day and night at different times of the year.
– Causes four seasons i.e winter, summer, utrum and spring.

Any first 3 x 1 = 3 mks

2. (a) Name two planetary winds in the Northern hemisphere.(2 marks)

– The North East trade winds

- The westerlies (South West Westerlies)
- The polar estuaries. Any first 2 x 1 = 2 mks

(b) State three natural causes of climate change. (3 mks)
- Variation in atmospheric carbon dioxide.
- Variation in solar output.
- Variation in the earth's orbital characteristics.
- Volcanic eruptions. Any first 3 x 1 = 3 mks

3. (a) What is an earthquake?(2 mks)
This is a sudden and rapid movement of the earth's crust caused by shock waves that originate below surface of the earth. üü
(2 mks)

(b) Give three human causes of earthquake. (3 mks)
- Underground - nuclear tests.
- Construction of large water reservoirs.
- Movement of trains and heavy vehicles.
- Use of explosives in mining.
- Freaking for oil.
- Geothermal operations and research experiments.

Any first 3 x 1 = 3 mks

4. (a) Name the parts marked P, Q and R (3 mks)
P - connate / parasitic cone
Q - crater
R - lava layer (3 mks)

(b) State two charactristics of the feature drawn above.(2 mks)
- Some have crater at the top.
- Has steep slopes

- Has side vent
- Has alternating layers of lava and pyrodast. (2 x 1 = 2 mks)

5. (a) Name two type of mass wasting. (2 mks)
- Slow mass wasting
- Rapid mass wasting (1 x 2 = 2 mks)

(b) State three factors that influence movement of materials in mass wasting. (3 mks)
- Nature and weight of materials.
- Amount of water
- The angle of slope
- Climate Any first 3 x 1 = 3 mks

6. Map work.
(a) (i) What is the contour interval (CI) (2 mks)
20 metres.üü

(ii) Name two type of roads on the area covered by the map. (2 mks)
- Dry weather road.
- All weather road bound surface
- All weather loose surface Any first 2 x 1 = 2 mks

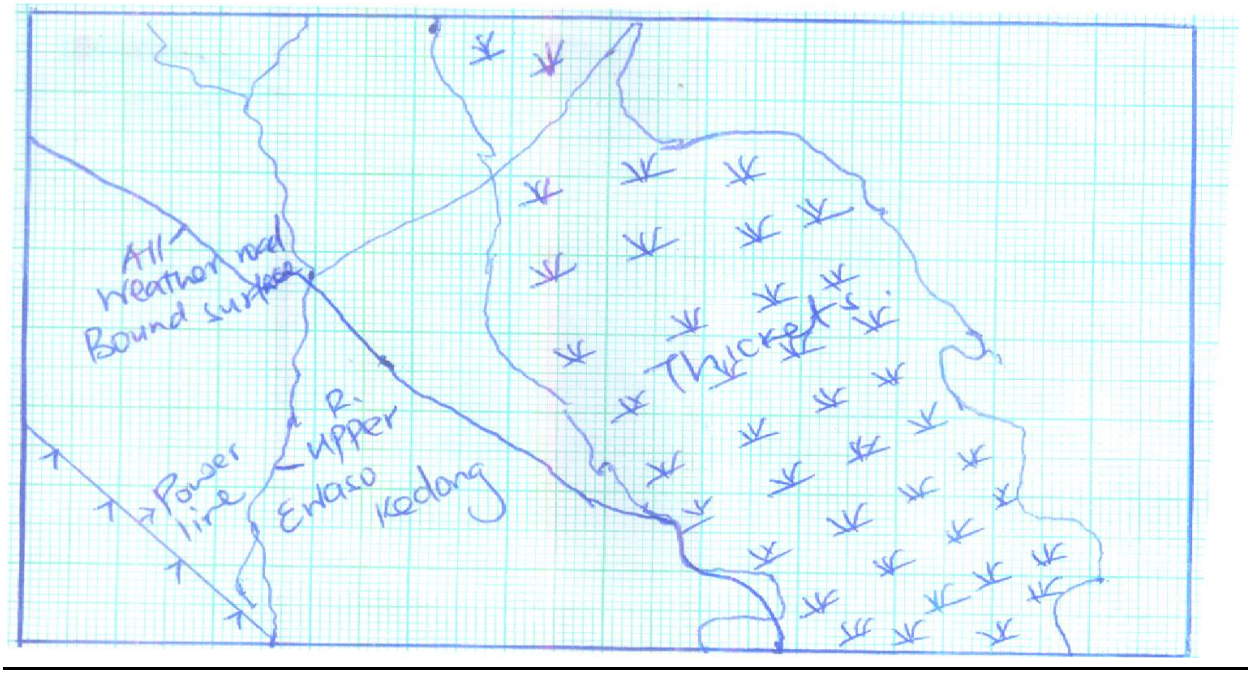
(b) (i) What is the six figure grid reference of the pump house near Githoito (2 mks)
390934

(ii) Mention one hydrographic feature in the map extract. (1 mk)
- Rivers
- Water reservoirs

Any first 1 x 1 = 1 mk

(iii) What is the bearing of the trigonometrical station SKP209 from the quarry near Kiabogo?(2 mks)

(c) **Draw a rectangle measuring 12 cm by 8 cm enclosed by easting 29 and 35 and northing 90 and 94. On it mark and label.**ü



- Thickets ü
- Power lineü
- River Upper Ewaso Kedongü
- All weather road bound surfaceü.

(5 mks)

(d) Citing evidence form the map, explain three physical factors influencing the growth of coffee in the area covered by the map. (6 mks)

- High altitude evidenced by contour height of 200 m and above is ideal for the growth of coffee.üü
- Moderate to high temperature evidence by high altitude is suitable for coffee growing.üü
- High rainfall well distributed throughout the year evidenced by presence of many permanent rivers ensures continuous supply of water for the coffee.üü
- Deep, well drained soils due to spaced contours of the gentle slopes hence provide the required anchorage for the coffee trees.üü Any first 3 x 2 = 6 mks

(e) Describe the relief of the area covered by the map (5 mks)

- The area generally slopes from the North West to the South West
- The area is generally a highland
- The is an escarpment
- There are several hills e. g Kijabe hills.
- There are steep slopes towards the Eastern side of the map and gentle slopes towards the Western.
- There is a valley - Ewaso Kedong valleys
- The highest contour height is 2729 m an the lowest is 1780 m
- The area is dissected by many rivers valleys. Any first 5 x 1 = 5 mks

7. (a) (i) What is a rock? (2 mks)

A naturally occurring agglomeration of mineral points that form part of the earth's crust.üü 2 mks

(ii)

- Porphyry
- Dolerite
- Quartz Any first 2 x 1 = 2 mks

(b) (i) State three characteristics of sedimentary rocks. (3 mks)
- Most are noncrystalline
- Some contain fossils
- Have cleavage / foliated / have planes
- Are stultified / horizontal layer Any first 3 x 1 = 3 mks

(ii) Describe the formation of mechanically formed sedimentary rocks.
- Weathering of pre-existing rocks.
- Transportational of sediments of wind water or ice takes place.
- The sediments are deposited on land or sea bed and compact over a long period of time.
- Sediments are cemented to form mechanically formed sedimentary rocks.

4 max 4 mks

(c) Explain four benefits of rocks to the economy of Kenya.(8 mks)
- Some rocks forms spectacular sceneries that act as tourist sites earning foreign exchange.
- Rocks provide parent material for soil formation used for agriculture
- Minerals and other and other valuable substances extracted from rocks are exported earning a country foreign exchange e. fluorspar.
- Stone carving provide employment opportunity and incomes which helps people improve their living standards.
- Some rocks are used in the building and construction of roads which facilitate movement of good and people.

first 4x 2 = 8 mks

(d) Students of Amu Secondary school carried out a field study on rocks within their school environment.
(i) Give two reasons why they needed a working schedule.(2 mks)
- To give ample time for each activity.
- To make the research main without the scope of the topic.
- Provides an estimate of time required for the study.
- Provides a basic of evaluation the fieldwork while it is in progress. Any first 3 x 1 = 3 mks

(ii) Suggest two solutions to the problem they are likely to encounter during the study. (2 mks)

Problem	Solutions
– Unexpected weather changes e.g sudden rainfall	- Carry umbrellas
– Inaccesible areas due to rugged terrain	- Avoid such areas
– Uncooperative student	- Take on the importance of the study before the actual study
– Attack by wild animal / insect bites (snakes)	- Wear gumboots and gloves / caution when rifting rocks.

Any first 3 x 1 = 3 mks

(iii) State two follow up activities they undertook after the field study. (2 mks)
- Data presentation.
- Discussing the findings
- Analyzing rock samples
- Displaying rock samples / photographs
- Report writing Any first 3 x 1 = 3 mks

8. (a) Types of earth movement.
Vertical / Epeirogenic. ü
Horizontal / lateral / orogenic.ü Any first 2 x 1 = 2 mks

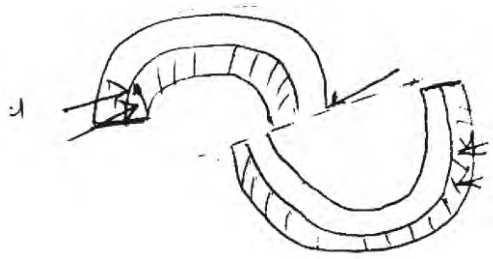
(b) Explain how the following factors causes earth movement.
(i) Gravitation force.
- Magma eruption create a void beneath in the mantle.
- Force of gravity pull over - hanging rocks toward the centre causing vertical movement. (2 mks)

(ii) Convectional current.
- Molten rocks beneath moves in a circular manner upwards, horizonally. Then vertically downwards, this triggers frictional drag on the sima layers
- making them to move horizontally and vertically inwards.
- This causes horizontal movement. (2 mks)

(c) (i) Apart from fold mountains, name three other features resulting from folding. (3 mk)

- Intermontane basin
- Inter - montane plateau
- Rolling plane
- Ridge and valley landscape
- Escarpment
- Cuesta landscape. Any first 3 x 1 = 3 mks

(ii) With the aid of a labelled diagram, describe formation of a thrust fold. (5 mks)



- Crustal rocks are subjected to unequal compressional forces.
- Stronger force on one side become intensive casing crate of the anticline and upper limb is pushed over the lower limb along the fault line.

Diagram 2 mks
Text - 3 mks

(d) Explain four effects of fold mountains on human activities. (8 mks)

- Fold mountains attract formation of relief rainfall on wind ward side which increases agricultural activity.
- Wndward side support growth of forests hence lumbering activities.
- Steep slope discourage settlement.
- Steep slope act as barrier in communication.

(e) You are supposed to carry out a field study of an area affected folding:

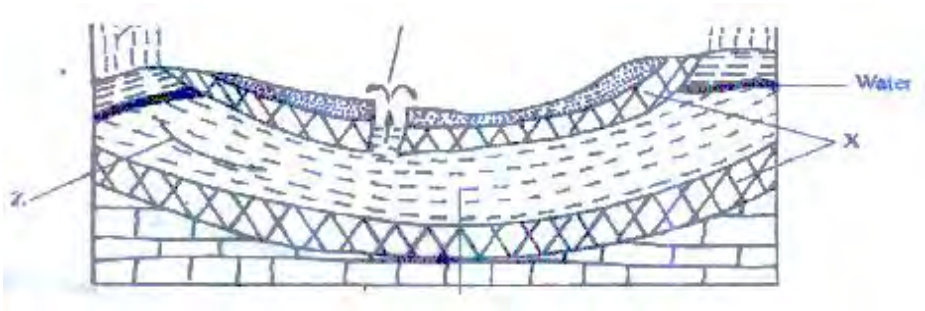
(i) Give one reason why you would need a map of the area of study. (1 mk)

- Map helps in identifying suitable routes.
- Helps to locate features / area of interest easily.
- Help estimate distance to be covered.. 1 mk

(ii) Identify two methods you would use to collect data during the field study. (2 mks)

- Taking photographs
- Content analysis
- Direct observation Any first 2 x 1 = 2 mks

9. The diagram below represents an artesian basin.



(a) Identify:

(i) The layer marked X and Y.

X - impermeable layerü(1 mk)
Y - aquiferü(1 mk)

(ii) The place marked Z
Percolation.ü(1 mk)

(iii) Sate four ideal conditions for the formation of artesian well.
- The quitter must be sandwiched between two layers of impermeable rock to prevent water loss.
- The artesian basin must dip and form a broad sanative from the region of water intake.
- The mouth of the well must be lower than the point of water intake for the water to flow out naturally
- (hydraulic pressure).
- The permeable rock / aquifer must be exposed on one side or both in region of water intake.

(b) Explain how the following factors influence the amount of underground water in limestone areas.

(i) Rainfall (2 mks)
- High rainfall leads to high infiltration increasing the amount of ground water.(rainfall that fall in intermittently)
- Low rainfall cause water unavailability hence less ground water.

(ii) Vegetation cover. (2 mks)
- Vegetation increases rate of infiltration.
- Places with vegetation have high infiltration rate hence more ground water.
- Places with little or no vegetation have low infiltration hence less ground water.

(c) (i) Apart from stalagmite, name three other underground features in limestone areas. (3 mks)
- Limestone pillar
- Cove /caverns
- Underground stream.
- Stalactire

(ii) With the aid of a diagram describe how stalagmite is formed.
- Formation of stalagmite - Rain, water, dissolves carbon in the atmosphere forming carbon acid.ü^{t}
- As carbonic acid percolates through joins in rocks, it reacts with limestone to form calcium hydrogen carbonate.ü^{t}
- The solution of sodium hydrogen carbonate constantly seeps and drips from the roofs of caves.ü^{t}
- Some drops of calcium hydrogen cargonate solution fall to the floors of the cave and release some water and carbon dioxide.ü^{t}
- This leaves behind crystals of calcium carbonate and grow upwards from the floor to form fingerlike projections called stalagmites.ü^{t}

(d) Give three reasons why there are few settlements in karst landscapes. (3 mks)
- absence of surface water and underground water.
- Rugged terrain difficult of construction of settlement structure.
- Thin soil unsuitable for agriculture.

10. a (i) Define the term soil. (2 mks)
A thin surface layer of loose, weathered unconsolidated materials that covers the earth crust and supports plants and animal life.üü

(ii) Mention three components of soil (3 mks)
- Living organisms
- Organic matter / humus
- Mineral matter
- Inorganic matter
- Soil water
- Soil air

Any first 3 x 1 = 3 mks

(b) (i) Differentiate between Eluviation and Illuviation.

Illuviation is the downward movement of fine particles (both mineral and organic) as a suspension in water from the upper soil layers to the layer below while illuviation is deposition and accumulation of tiny materials e.g clay particles, humus and oxides of iron and aluminium moved from the upper horizons to the lower horizons making the soil compact. (2 mks)

(ii) Explain how the following influence soil formation.

Climate (2 mks)

Influences the rate and type of weathering affecting a given rock, decomposition and humification, leaching salinization etc hence soil formation.

Influences of rate of soil erosion hence determine the depth of soil being formed.

any first 1 x 2 = 2 mks)

Organic factors.

Remains of living organism decay to produce humus which act as a source of soil nutrients.

Plants roots aid in rock weathering, they breakdown soil hence allows water and air other microorganisms into the soil hence make soil porous and also bind the soil together.

Animals like earthworms modify soil properties through burrowing hence help in mixing organic, inorganic materials minerals.

any first 1 x 2 = 2 mks

(c) (i) State two factors that influence the formation of soil catena. (2 mks)

- Drainage
- Relief
- Leaching
- Transportation of soil down slope (mass wasting) any first 2 x 1 = 2 mks)

(ii) Explain three effects of soil erosion (6 mks)

- Reduction in depth of the soil hence reduce the plant support.
- Extreme gully erosion can expose the water table, leading to loss of water through evaporation and surface run off resulting to dry conditions.

- Cause blockage siltation and drying of some rivers due to deposition of eroded soil sediments in their channels.
- If the erodes soils have fertilizers, they end up polluting the water bodies.
- Extreme gully erosion causes land dereliction.
- Erosion and deposition of sediments along a river channel, leads to narrowing of channel, making the river prone of flooding during the rainy season. any first 3 x 2 = 6 mks

(d) Explain three ways of conserving soils (6 mks)

- Crops rotation - helps to restore exhausted soils and ensure little loss of nutrients
- Intercropping and mixed cropping - does not allow simultaneous exposure of the whole fields to rainfall since the crops do not allow simultaneous exposure of the whole field to rainfall since the corps do not mature at the same time.
- Contour ploughing - prevents sever erosion through surface runoff.
- Strip cropping growing alternating strip of crops -across a slope reduces the impact erosion.
- Mulching - covers the soil surface and protects it against agents of erosion.
- Use of manure - organic and inorganic manure maintaining and / or improves soil productivity.
- Other points that can be explained.
    - Terracing
    - Reforestation and afforestation
    - Irrigation drains and artificial waterways
    - Shelter belts
    - Reduction of population
    - Proper water management
    - Use of cover crops
    - Controlled grazing
    - Bush fallowing

any first 3 x 2 = 6 mks

KIRINYAGA WEST
GEOGRAPHY PAPER 2
MARKING SCHEME

SECTION A

1. (a) *Name two breeds of dairy cattle reared in Kenya.*
   - Friesian
   - Jersey
   - Guernsey
   - Ayshire
   - Sahiwa *(Any first 2 x 1 = 2 mks)*

   (b) *State three physical factors that favour daily farming in Kenya.*
   - The highland experience cool climate / low temperature which supports exotic breeds.
   - High rainfall through out the year which favour growth of pasture
   - Deep, well drained volcanic soil that ensure constant growth of pasture and high quality nutritious grass.
   - Permanent water sources from rivers and lakes due to heavy and reliable rainfall.
   - Low incidences of tropical pests and disease due to cool conditions. *(Any first 3 x 1 = 3 mks)*

2. (a) *Differentiate between renewable and nonrenewable sources of energy. (2 mks)*
   Renewable sources of energy are those sources that can be regenerated and used over along period of time whereas nonrenewable sources of energy are those sources that are exhaustible if not well managed or well extracted.üü

   (b) *State three advantages of using solar energy. (3 mks)*
   - It is cheaper as it is absolute free.
   - It is available almost every where
   - It is clean and environmentally friendly

3. (a) *Define the term transport.(1 mk)*
   Transport is the physical activity of carrying and moving goods and people from one place to another.

   (b) *Identify four factors that hinder the development of railway lines among African countries. (4 mks)*

   - African countries were colonised by different colonizers who led constructed railway line within their own colonies to transport materials from interior to ports.
   - The railway lines have different gauges making it difficult for them to be interconnected.
   - Different development policies among African countries hinder efforts to construct railway lines to link them.
   - Most African countries produce similar goods which discourages trade among them hence it discourages construction of railway lines.
   - Railway are expensive to construct and most African / counties do not have enough capital of the construction.
   - The varied terrain in Africa make it difficult to construct railway lines.
   - Some parts of Africa are unproductive so it would be uneconomical to construct railway lines through them

4. (a) *Distinguish between population distribution and population density.(2 mks)*
   Population distribution is the way people are spread out on a given area of land while population density is the umber of people per unit area of land.

   (b) *Name three types of information that can be obtained from an age-six population pyramid. (3 mks)*
   - Sex ratio
   - Age distribution
   - Life expectancy
   - death rate
   - Dependency ratio
   - Birth rate
   - Mortality rate

5. (a) *Give two methods of placer mining.(2 mks)*
   - Dredging - Panning
   - Gravel pump - Hydraulic method

   (b) *Sate three uses of diamonds. (3 mks)*
   - Making jewelry
   - As cutting instruments

- As drilling bits
- For grinding metals

6. (a)
   (i) *Name the type of the above photograph.*
   Ground general view
   (ii) *Identify the type of agriculture shown in the photograph.*
   Mixed farming

(b) - Cow Coffee trees Grass

12 cm

(ii) *State three advantages of the type of farming shown in the photograph. (3 mks)*
- The animals provide manure for the crops.
- If the crop fails in a particular season, the farmer can still get some income from the livestock and vice versa
- The are crop remains can be fed to the animals.

(c) *Explain four problems facing dairy farming in Kenya (8 mks)*
- The cattle are attacked by diseases such as foot and mouth lowering their quality / death..
- Prolonged droughts which lead to drying of pasture and reduce animal fodder.
- Poor management of dairy cooperatives and destroyed payments of farmers. Lowers.
- Poor and impassable road during rainy season makes it difficult to transport milk to the cooling points.
- High cost of production and expensive firm inputs.
- Stiff competition from other agricultural activities such as horticulture farming.

(d) *Explain four differences between dairy farming in Kenya and in Denmark. (8 mks)*
- Dairy farming in Kenya depends on grass, pastures while in Denmark it mostly depends on fodder.
- Dairy farming in Kenya is outdoor throughout the year while in Denmark the animals are kept indoors during winter.
- Dairy farming is heavily machinized in Denmark while in Kenya mechanization is lacking in most areas.
- Major dairy farming in Kenya are restricted to the highlands while in Denmark dairy farming is evenly distributed throughout the county.
- In Denmark, dairy products form a major foreign exchange earner while in Kenya, most of the dairy products are consumed locally.
- Dairy yields in Kenya are affected by climatic changes while in Denmark high yields are achieved throughout the year.
- Dairy cooperatives are highly developed in Denmark while in Kenya the dairy cooperative movement is young.
- Artificial insemination is more widely used in Denmark than in Kenya.

7. (a) (i) *State three factors influence exploitation of minerals. (3 mks)*
- The value of the mineral.ü Mineral of high demand and economic value may be mined at a very high cost because they can be sold at high prices.
- The size of the mineral reserveü must be big enough of justify the use of expensive mining equipments.
- High grade metal oresü are more economical to exploit than lower grade ores since they yields a higher/ larger amount of metal. Highly concentrated minerals are generally easier and cheaper to mine and process.
- The type /methodü of mining also helps to determine whether it is to be mined and the rate at which it can be obtained e.g open cast mining is much cheaper than deep shaft mining.
- Developing countries lacks advance technology necessary right from exploration up to the actual mining and processing such countries have not been able to identify, control and exploit their mineral resources.
- Capital availabilityü needed to mine in most developing countries the capital is not adequate thus giving Begin - Shed Companies an upper hand over the local people in the mining industry.
- World market pricesü for various minerals may influence. The exploitation of such minerals. Lower prices may cause a country to close down her mining activities of the involved mineral.
- The transport cost of a mineral ümay influence this exploitation mineral mined resources in developed countries are better developed than those in developing countries due to highly developed transport.

*(any first 3 x 1 = 3 mks) * Explanation not necessary.*

(ii) *Name two counties in the middle East which are important oil producers. (2 mks)*
Saudi Arabia Kuwait - Iran
Iraq United Arabs Emirates - Middle East

(b) (i) *State two ways in which open cast mining affects the environment. (2 mks)*
- The derelict land left makes the environment look ugly.

- The waste rock and soils hinder any other forms of land use.
- The dust produced during mining pollutes the atmosphere.
- Soil structure is interfere with making the soil loose the structure and become vulnerable to agents of erosion such as wind and water.
- It leads to loss of biodiversity are large areas are cleared off vegetation to pave way for the exploitation of various minerals.

(c) *Explain three ways in which exploitation of Trona on Lake Magadi is important to the economy of Kenya. (6 mks)*

- It has facilitated provision of social amenities e..g school, hospital, proper housing that have benefitted local community.
- Provision of job opportunities (skilled and unskilled) thus raising the standards of living of the workers.
- Through exports of soda ash the country earns substantial amount of foreign exchange.
- Mining has encouraged the development of transport and communication facilities thus opening up some of remote areas.

(d) *Identify four problems facing diamond mining in South Africa.(4 mks)*

- Fluctuations in the world market prices.
- Low mineral content in the ore making it processing expensive and elaborate.
- Labour competition with other sectors of the economy eg the manufacturing industries and gold mining.
- Continued mining has led to reduced diamond reserves.
- High cost of mining and processing of diamond.

(e) (i) *State four preparations you will make for the study. (4 mks)*

- Carrying out a pre-visit
- Seeking permission
- Assembling tools
- Adjusting objectives and hypothesis
- Preparing a working schedule
- Dividing participants into groups
- Carrying out relevant research from the library / content analysis
- Drawing a route map.
- Identifying methods of data collection.

(ii) *Give three methods you will use to present data collected. (3 mks)*

Drawing graphs and tables
Displaying photographs
Presenting a written report.
Drawing a sketch map.

8. (a) (i) *Method used to drain swamps in Kenya.*

- Digging open ditches / canals
- Pumping out the water
- Constructing drainage pipes

any first 2 x 1 = 2 mks

(ii) *Factors that influence location of Perkerra irrigation scheme.*

- Availability of water from River Perkerra.
- The gentle sloping land that allows water to flow by gravity and mechanization.
- Availability of extensive land for irrigation.
- Presence of loamy / alluvial soils good for the growth of a variety of crops.
- The area was sparsely populated.
- Low rainfall making it necessary to irrigate the area.

(any first 3 x 1 = 3 mks)

(b) *Other crops grown in Mwea irrigation scheme.*

- Maize
- Tomatoes
- Water melons
- Onions
- Vegetables
- French beans, peas and beans. *(any first 2 x 1 = 2 mks)*

(ii) *Benefit of Mwea Irrigation Scheme.*

- Settlement of people who were previously landless.

- Control of floods during the rainy season through construction of the dams.
- Land reclamation which was once barren and of little use is new productive.
- Source of income to farmers raising their standard of living.
- Economic development through establishment of rice mills and roads and other social facilities provided for tenants.
- Increased food production. It has satisfied the domestic rice requirement and other food crops grown in the scheme. *First 3 x 2 = 6 mks*

(c) (i) *Benefits of land reclamation in Netherlands.*

- Creation of L. Yessol which supplied water for domestic and industrial use.
- Reclaimed land has increased arable land for farming.
- The project has promoted tourist earning through foreign exchange.
- Has reduced the risk of flooding through the construction of dykes, canals, ditches and pumping station.
- Led to industrial development by increasing agricultural raw materials.
- Construction of dykes has improved transport network and shortening the coastline distance by about
- 320 km.
- Reclaimed areas are used for social amenities. *First 3 x 1 = 3 mks*

(iii) *Differences between land reclamation in Kenya and Netherlands.*

- In Kenya land is mainly reclaimed from swamps and marginal areas while in Netherlands land is mainly reclaimed from the sea.
- In Kenya methods used to reclaim land are of low technology such as use of canals and dykes while in Netherlands advanced technology such as underground pipes are used.
- In Kenya dykes are constructed to prevent river water from spreading onto the land while in Netherlands dykes prevent sea water from entering reclaims land.
- In Kenya land reclaimed is relatively small while the area reclaimed in Netherlands are large.
- In Kenya a variety of method are used to reclaim land while in he Netherlands the main method used is draining of the sea. *(any first 4 x 2 = 8 mks)*

9. (a)

(i) Fisheries : Water bodies where aquatic animal / fish are reared for exploitation for substance and commercial purposes.üü *(2 mks)*

(ii) *Why fish water fishing is widespread than marine in E.A?*

- There is low demand for sea fish compared to fresh water fish.
- Narrow and deep continental shelf along the coast of E.A limits growth of planktons thus limiting breed and variety of edible fish.
- Numerous inland fishing grounds e.g lakes and rivers which are accessible.
- Limited capital and technology make it difficult to develop marine fishing.
- Still competition of the open sea from industrialized nation who use modern fishing equipment.

(any first 3 x 2 = 6 mks)

(b) (i) *Fishing methods used in deep sea.*

- Trawling
- Purse seining
- Long line fishing
- Drifting

(any first 3 x 1 = 3 mks)

(ii) *Ways of conserving fisheries in Kenya.*

- Encouraging fish farming to ensure efficient supply of fish from other sources other than natural fisheries.
- Legislation to restrict disposal of untreated or solid waste into other fisheries to control water pollution and ensure survival of fish
- Restocking the over fished areas by breeding fingerlings in fish farms
- Standardizing the mesh size of nets to stop indicriminate fishing.
- Restrict fishing to specific season to allow breeding and maturing of fish.
- Licensing commercial fishermen to control their numbers and prevent illegal fishing and over fishing.
- Monitoring and discouraging the entry of foreign fishermen in the Indian ocean water of Kenya territory.

(any first 4 x 2 = 8 mks)

(c) (i) *Physical factors that favour fishing in Japan.*
- Shallow and broad continental shelf allow light to the sea en for growth of micro-organisms (plantons) food for fish.
- Indented coastline provide secure breeding ground for fish.
- Convergence of warm Kura Siwa an cold Oya Siwo currents result in upwelling of sea water bringing for plankton from the sea bed,
- Mountainous nature of the country restricting agricultural activities hence fishing is an alterant activity.
- The cool waters are ideal for fish breeding because of the abundant supply of planton.
- The cost has many off-shore island which provide sheltered inlets ideal for the establishments of fish parts.

(any first 3 x 2 = 6 mks)

(ii) *Reasons why the Kenya Government should encourage fish farming.*
- It is free from international disputes
- It can result to development of fish related industries. Thus creating employment..
- It creates less space compared to other agricultural activities.
- Fish is a rich source of protein which can also which can supplement other sources.
- Some fish from fish ponds are exported to earn the country foreign exchange used to develop other sectors of the economy.

Any first 3 x 1 = 3 mks

10 (a) (i) *Environmental hazards associated with climate.*
- Floods
- Drought
- Land slide
- Heat waves
- Windstorms *(any first 2 x 1 = 2 mks)*

(ii) *Effects of land pollution on the environment.*
- When it rains the dumped waste / garbage is washed to rivers causing water pollution.
- Accumulation of garbage leads to blockage of roads and drainage system.

- Garbage heaps are eye sore as they make the environment ugly.
- Oil spillage and industrial waste destroys plants and animals .
- Garbage may result to foul small which cause air pollution.

(any first 3 x 2 = 6 mks)

(b) (i) *Effect of lightening.*
- It can cause forest fires that destroy forests.
- It can lead to loss of human and animal lives.
- It can damage electrical installation and roofs of houses and other structures.

Any first 2 x 1 = 2 mks

Effects of pests and diseases.
- Pests such as locust and army worms destroy vegetation and crops.
- Some pests destroy large area of crops leading to food shortage and famine.
- Pests spread diseases e.g malaria, bilhazia etc which are expensive to teat and at time cause death.

Any first 2 x 1 = 2 mks

(ii) *Measures that can be taken to control pollution.*
- Setting up recycling plants to handle the various categories of waste.
- Setting up prefer garbage collection and management programs.
- Control of soil erosion to avoid siltation in water bodies.
- Proper legislation for proper management of the environment against pollution.
- Treatment of sewage and industrial affluent before releasing to the encronchment.
- Use of unleaded fuel to promote a cleaner environment.
- Carrying out regular inspection of factories to ensure hat toxic fumes are not released into the atmosphere.

(any first 3 x 1 = 3 mks)

(c) (i) *Causes of radiation pollution.*
- Heat produces by heavy manufacturing industries.
- Too much heat waves discharged by nuclear energy plants or use of uranium and other radio active materials
- Use of atomic bomb which produces alot of heat.

(any first 2 x 1 = 2 mks)

(ii) *Ways in which farming activities cause water pollution.*

- Agrochemicals are washed into rivers.
- Animal wastes in the farms, blood and other waste from slaughter houses wash into rivers.
- Poor farming methods like ploughing up and down the slope or cultivating along the rivers banks lead to soil erosion resulting to silt when it rains.

(any first 2 x 1 = 2 mks)

(iii) *Reasons for managing and conserving water resources.*

- To ensure there is enough water supply for present and future generation.
- Some rivers are needed for HEP production, domestic and industrial use hence need to conserve them
- Water bodies provide natural habitat for acquire life which provides food and income to people.
- Water bodies provide sporting and other recreation activities that promote tourism.
- Some water bodies provide cheap mens of transport for building goods.
- For continuous supply of fresh water for domestic use. *(any first 3 x 2 = 6 mks)*