312 /1 GEOGRAPHY MARKING SCHEME PAPER ONE

Answer all the questions in section A. In section B answer question 6 and any other Two.

SECTION. A.

1. a) What is a line of longitude? (2mks)

- It is a line based on the angular distance of a place east or west of the prime meridian(0^0) / it is an imaginary line which is drawn on a map from North pole and south pole and is measured in degrees east or west of the prime meridian. (0^0)

b) What is the time at Moyale on 38^0 E when the time at Tema on prime meridian (0^0) is 1.00p.m? (3mks)

- Moyale is ahead by 38^0.
- 1^0 = 4 minutes
- 38 x 4 = 152 hours.
- 60
- 1.00 + 2hrs 32 minutes
- Moyale time will be 3.22p.m

2. a) Name two theories of the origin of the Earth. (2mks)

- Passing star theory/ big bang theory.
- Nebula clouds theory.
- Collision theory.
- Supernova theory.

b) Identify three layers of the earth's atmosphere. (3mks)

- Troposphere
- Stratosphere
- Mesosphere
- Thermosphere/ionosphere

3. a) Name the scale used to measure the magnitude of an earthquake. (1mk)

- Ritcher scale.

b) List three causes of earthquakes. (3mks)

- Energy released within the mantle.
- Blasting of rocks/ bombs explosion.
- Construction of large water reservoir.
- Folding / faulting .
- Isostatic adjustment.
- Movement of magma within earth's crust/ volcanicity.
- Gravitative pressure.
- Collision of tectonic plate.

4. a) Identify three ways in which ice moves. (3mks)

- Plastic flowage
- Basal slip
- Extrusion flow.
- Internal shearing.

b) State three types of glacial moraines. (3mks)

- Lateral moraine
- Medial moraine
- Terminal moraine
- Ground / sub glacial moraine.
- Englacial moraine.
- Push moraine
- Recessional moraine.

5. a) State five factors that influence mass wasting. (5mks)

- Seismic/ earthquakes shocks leads to movement of materials down slopes.
- Existence of bare rock/ increase in moisture lubricates the soil.
- Undercutting of the slopes by excavation.
- The angle of slopes determines the movement of the materials.
- The nature of the underlying rock.
- Lack of vegetation reduces ability of the soil to hold together.
- Increased overburden/ deeply weathered thick or thinly bedded rock.

SECTION B.

Answer question 6 and any other two in this section.

6. Study the map of Oyugis (1:50000) sheet 130/1 provided and answer the questions that follow.

a) i) Show the latitudinal extent of the area covered by the map. (1mk)

- 0.30's + 0.045's

ii) Name two administrative district covered by the area shown in the map. (2mks)

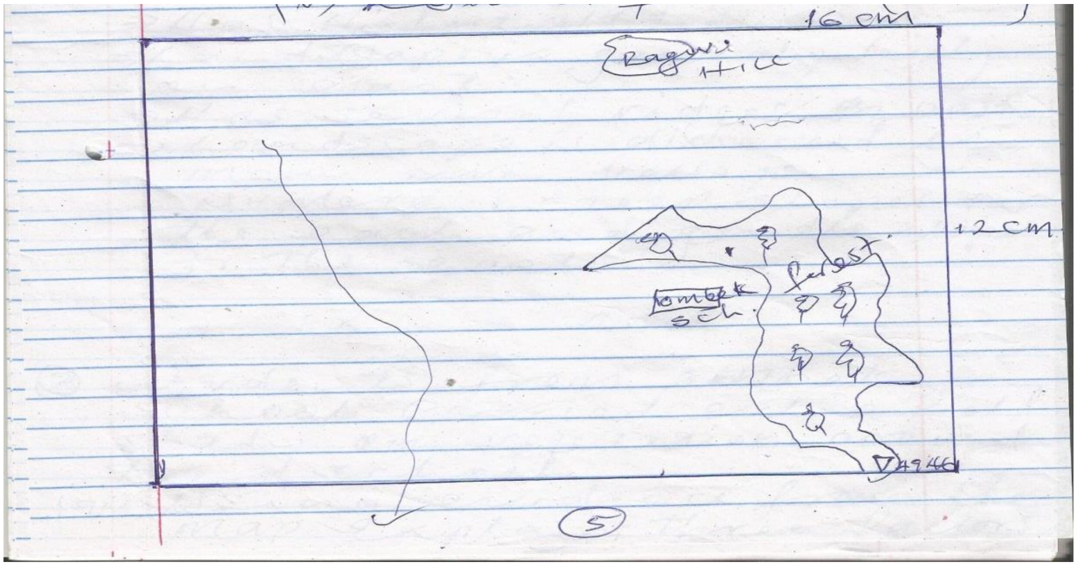
- Kisii
- South Nyanza

iii) Calculate the area east of the all-weather Kisii-kabondo road. (2mks)

- $17km^2$ +1

b) Draw a rectangle 16cm by 12 cm to represent the area enclosed by Easting 80 and 88 and the Northing 36 and 42. (1mk)
On the rectangle mark and name the following features.

i. Ombek school (1mk)
ii. Migori river (1mk)
iii. Secondary trigonometrical station (4946) in)
iv. Ragwe Hill (1mk)


16 cm
12 CM
forest
4946

c) Citing evidence from the map give three types of crops grown in the area north of Northing 40. (3mks)

Crop	evidence
Coffee	Coffee factory
Maize	Flour Mill
Cotton	Cotton store

d) Describe the relief of the area covered by the map south of Northing 26. (4mks)

- Has highest altitude 5780
- Land scape in general is high on east.
- Has several ridges on east.
- Landscape is dissected by many river valleys.
- Numerous steep slopes to the earth and gentle slopes for the east.

e) Students from Ombek school carried out a field study on vegetation around their school.

i. Using evidence from the map explain three factors that may have favored the growth of coffee in the eastern parts of the area covered by the map. (3mk)

- The area is densely populated which provided labour required in coffee farms.
- High amount rainfall is evidenced by presence of permanent rivers and forest in the area.
- Well drained soils evidenced by steep slopes and dense settlement.
- Good transport network . this facilitates transporting of coffee to factories . evidenced by all weather roads in the area.

ii. Give three types of vegetation they would study in the area. (3mks)

- Forests
- Woodlands.
- scrubs

iii. What problems are they likely to experience in the area of study. (2mks)

- Poor transport.
- insecurity

7. a) i) Name three types of faults. (3mks)

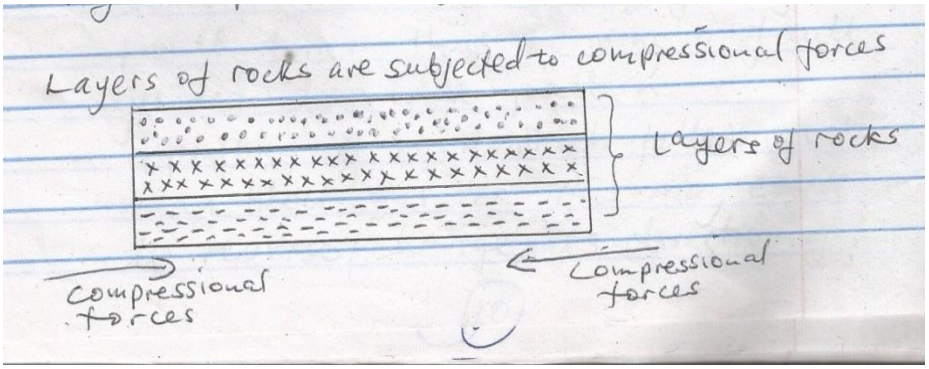
- Normal Faults
- Reverse Fault
- Thrust Fault
- Tear. Shear/Slip Fault.

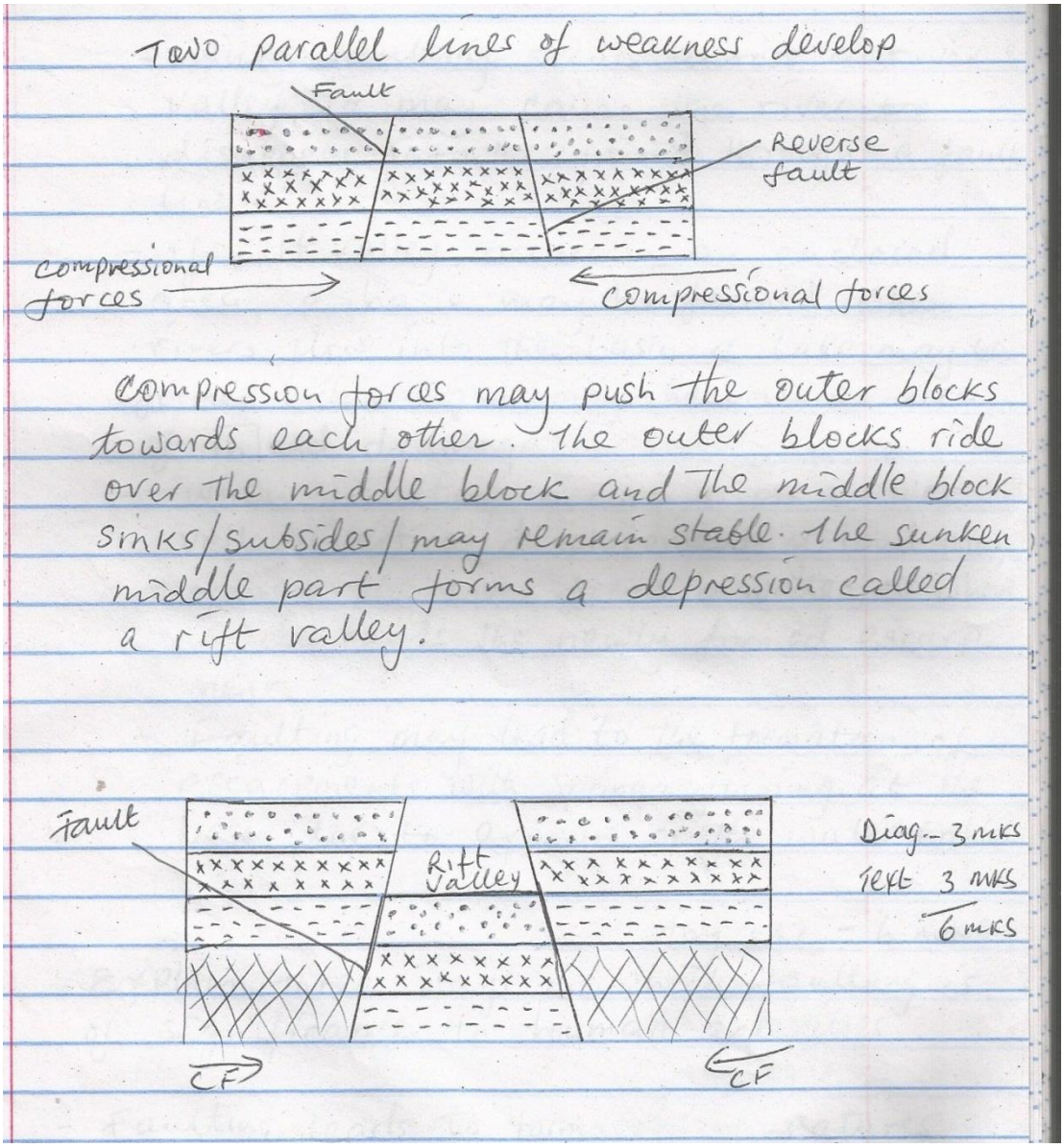
- Anticlinal Fault.

ii) Apart from compressional forces, explain two other process that may cause faulting. (4mks)

- Faulting may be caused by force acting horizontally away from each other which cause tension in the crystal rocks. Due to tensional forces the rocks stretch and fracture causing faults
- Faulting may occur where horizontal forces act parallel to each other in the opposite/ same direction resulting I shearing.
- Faulting may also occur due to vertical movement which may exert a strain in the rocks making them to fracture.

b) i) With, the aid of a well labeled diagram, describe how a rift valley is formed by compressional forces. (6mks)





- Compressional forces may push the outer blocks towards each other. The outer blocks ride over the middle block and the middle block sinks/ subsidies/ may remain stable. The sunken middle part forms a depression called a rift valley.

ii) Explain three ways in which faulting may influence drainage system. (6mks)

- Some rivers may end up flowing along faults lines, thus forming a fault 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 ground through a fault line.
- If rift valley occurs 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 forms a waterfall where it descends the newly formed escarp.
- Faulting may lead to the formation of escarpments with springs forming at the base due to exposure of the water table.

c) Explain three ways in which faulting is of significance to human activities. (6mks)

- Faulting leads to formation of features that form beautiful scenery which attracts tourists.
- Faulting leads to formation of lakes that are important fishing grounds /tourists sites/ provide water for irrigation / for domestic use.
- Faulting causes displacement of rocks which exposes minerals that are mined.
- Faulting may lead to the formation of mountains /horst which experiences rainfall on the windward side that give rise to rivers which provide water for industrial / domestic/ agricultural use.
- Block mountains formed through faulting lead to formation of relief rainfall on the windward side which favors agriculture/ forestry settlements.
- Faulting may cause subsidence of land which may lead to loss of life /property .
- Faulting creates deep faults which are passage of steam jets which may be utilized for geothermal power production.
- When faulting occurs a ridge it may provide a dip which could form a mountain pass where transport /communication lines can be constructed/may hinder development of transport.
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8. a) i) Identify two processes through which wind erodes the earth's surface. (2mks)

- Deflation
- Abrasion
- attrition

ii) Name two major deserts found in Africa. (2mks)

- Sahara
- Kalahari
- Namib

b) The diagram below represents a barchans. Use it to answer b(i)

i) Name the feature marked .

J Eddy current **(1MK)**
K Horn **(1MK)**

ii) Describe how the following features found in hot desert are formed.

An oasis (5mks)

An oasis – is formed when a preexisting depression is exposed to wind erosion. Wind eddies remove unconsolidated materials through deflation. As deflation continues, the depression is deepened and enlarged. The process of deflation is aided by weathering. With continued deflation, the level of the water table is reached. Water oozes out of the ground and collects into the depression to form an oasis.

A yardang (5mks)

A Yardang is formed in desert area where alternative vertical layers of hard and soft rocks occur. The soft rocks are eroded faster than the hard resistant rocks. Abrasion continues and the furrows on the soft rocks widen gradually leaving the hard /resistant rock forming ridges separating the furrows. The ridge is called a yardang.

c) You are supposed to carry out a field study of a semi-arid area in Kenya.

i. State three ways through which you would prepare yourself for the field study. (3mks)

- Formulating hypothesis / objectives.
- Grouping / appointing group leaders.
- Planning a schedule of activities.
- Carrying out reconnaissance.
- Studying /drawing a route map.
- Identifying methods of data collection.
- Reading from relevant written materials.
- Assembling relevant tools /equipment/materials.
- Seeking permission.

ii. What information would you collect through observation that would indicate that the area is tuning into a desert? (3mks)

- Sparse settlements.
- Stunted trees /tuff of grass.
- Sparse vegetation/large patterns of bare soil.
- Dust storms/sand storms.
- Evidence of wind erosion.
- Presence of drought resistant crops.

iii. State three measures you would recommend to be put in place to control desertification in the area. (3mks)

- Planting of trees .
- Controlling overgrazing.
- Avoid bush fires.
- Controlling tree cutting.
- Practicing appropriate methods of cultivation/ control faming / mulching/ irrigation.

9. a) i) What is natural vegetation? (2mks)

- It is the plant cover that grows wildly on the earth's surface. Without interference from man and his animal.

ii) Identify the temperate grasslands found in the following countries.

.Russia - Steppes**.** **(1mk)**

Argentina - pampas **(1mk)**

Australia - Downs. **(1mk)**

b) i) Describe the characteristics of the tropical rainforest. (8mks)

- Consist of mixed variety of trees species.
- Trees shed their leaves at different times of the year/ they are evergreen.
- Trees take long time to mature.
- Forest has little or no undergrowth.
- Forest has numerous liana/ epiphytes.
- Some trees have buttress roots.
- Forest has canopies.
- Forest mostly made up of hardwood trees.

ii) Explain three ways in which the desert vegetation adopts to the environmental conditions of the region. (6mks)

- Some plants have thick/fleshy/succulent leaves to enable them store water.
- Some have long roots to tap the ground water.
- Some plants have no leaves/ have thin /spiky/ waxy/needy-like leaves to reduce transportation.
- Some plants have shiny surfaces to reflect light.
- Some plants have short lives/seeds that take short time to manure to be able to survive short rains.

iii)

c) Explain three causes of the decline of the areas under forests in Kenya. (6mks)

- Areas of forests are destroyed by accidental and sometimes intended fires.
- Diseases caused by pest and parasites attack mainly the planted forests causing many trees to dry up.
- Human activities /settlements/logging have destroyed many forest areas.
- Over –exploitation leads to depletion of certain tree species.
- Government policy of degazetting of some forests made people free to clear many forested areas.
- Prolonged drought leads to degeneration of forests some of which take long to recover.

10. a) i) What is micro-climate? (2mks)

- It is a climate condition in a restricted area due to small differences such as aspects, slopes, vegetation and human land-escapes.

ii) State two negative effect of desertification. (2mks)

- It leads to shortage of water/destruction of water catchment area.
- Leads to drying up of vegetation.
- Leads to dying up of soils /development of infertile soils.
- Causes migration of people /animals .
- Causes destruction of vegetation.
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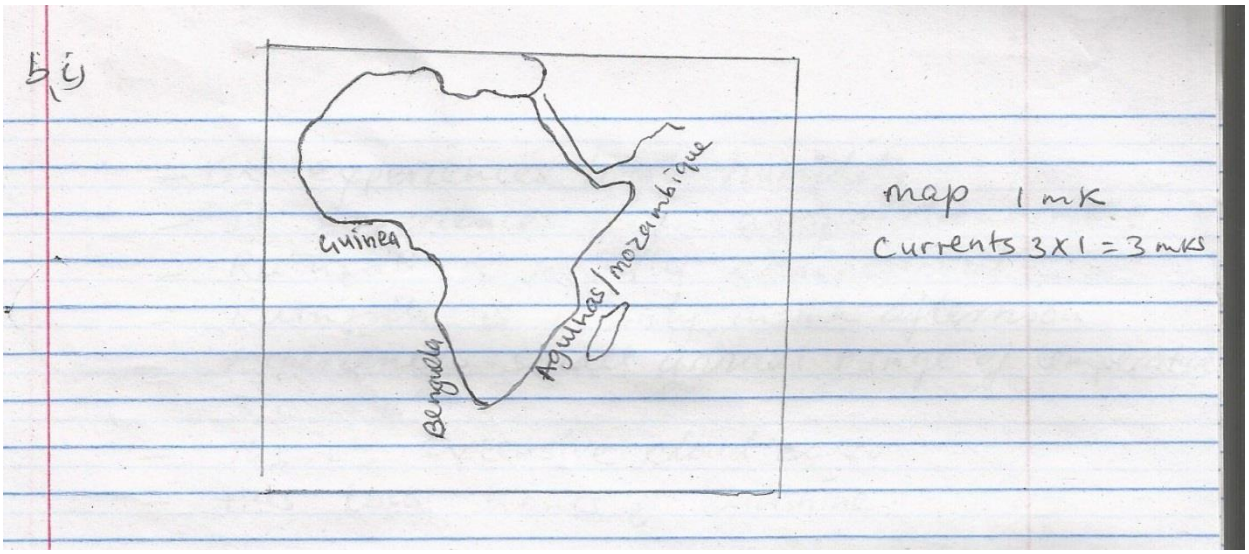
b) Draw a sketch map Africa and indicate the ocean currents.

i. Benguela, Guinea, Agulhas/ Mozambique. (4mks)



ii. State two effects of Benguela Current on the adjacent coastlands. (2mks)

- Cold currents lower the temperatures of the adjacent coastland.
- Cold currents lowers humidity in the adjacent areas.
- It causes fog/mist in the adjacent areas.
- It might cause aridity in the adjacent coastland.

c) Describe the characteristics of the Equatorial type of climate. (8mks)

- Temperatures are high/27^0 C throughout the year.
- It experiences high rainfall /1500-2000mm.
- The rainfall is evenly distributed throughout the year.
- Rainfall comes in two seasons /double maximum.
- It experiences high humidity.
- It experiences high evaporation rates.
- Rainfall is mainly convectional.
- Rainfall is mainly in the afternoon.
- Experiences small annual range of temperatures 3^{0}c to 4^{0}c .
- There is extensive cloud cover.
- Has long hours of sunshine.

d) Explain how the following factors influence climate.

i. Altitude. (4mks)

- This is the highly above sea level.
- Temp. decreases with increasing height.
- It makes the higher areas to have lower temp. that lower areas.
- A rise in altitude causes a fall in temp. and a cooling effects which causes condensation.
- Precipitation increases on the windward side and lowering of altitude leads to warming effect on the leeward side.
- Altitude causes variation in pressure gradients.
- Altitude causes anabatic and katabatic winds/ subsequent temperature inversion.

ii. Distance from the sea. (3mks)

- Areas closer to the sea are water than those far from the sea due to maritime influence.
- During summer ,land surfaces are warmer than sea surfaces so that inland areas are warmer than those nearer the sea.
- In winter the land surface are colder than the sea bodies hence the land near the sea is cool while away from the sea the land is cold.
- Winds blowing over the sea pick moisture and shed it as rainfall on the coastal areas. They blow as dry winds further inland causing inland aridity.