

MOKASA II JOINT EXAMINATION
Kenya Certificate of Secondary Education
312/1
Paper 1
GEOGRAPHY

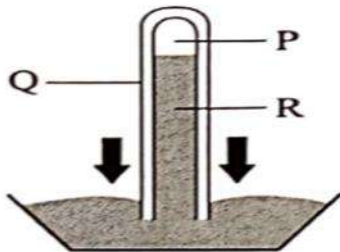
MARKING SCHEME

SECTION A: 25 MARKS

Answer **ALL** questions in this section

1. a). State the relationship between geography and meteorology (2 Marks)
✚ Geography uses meteorological information in the study of weather elements and their prediction and in classifying climatic regions and mapping them.

 - b). Give three divisions of physical geography (3 Marks)
✚ Biogeography/ Ecology
✚ Climatology
✚ Geomorphology
✚ Meteorology
✚ Hydrology
✚ Pedology
2. The diagram below shows a barometer



- a.) Identify the parts marked P and Q (2 Marks)
P – Vacuum
Q – Glass tube

b). State three ways in which cloud cover influences sunshine (3 Marks)

- + Cloudless sky allow maximum sunshine to reach the ground therefore greater sunshine intensity.
- + Scattered clouds lead to intermittent sunshine.
- + Sky that is completely covered allows no sunshine to reach the ground.

3.) a.) Define the term lake (2 marks)

- + A lake is **a body of water** which occupies a basin, depression or hollow on the Earth's surface

b.) Identify three types of lakes formed by glacial action (3 marks)

- + Moraine dammed lakes
- + Ribbon lakes
- + Tarns/ cirque lakes
- + Kettle lakes.

4 a). Give two sources of underground water (2 Marks)

- + Rain water
- + Melt water
- + Magmatic water
- + Surface water.

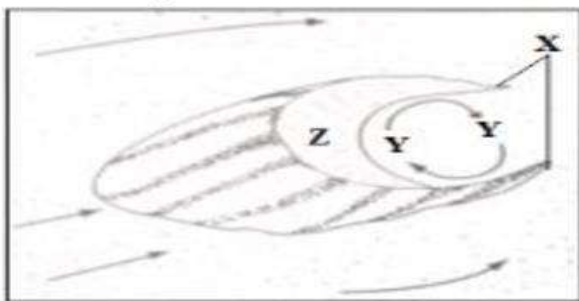
b). Identify three reasons why there are few settlements in the karst region (3 Marks)

- + The areas are rocky/ have a rugged surface.
- + They have thin soils
- + There is inadequate water supply/lack adequate water supply

5 a.) List two types of sand dunes apart from barchans (2 Marks)

- Seif dunes
- Transverse dunes

b). The diagram below shows a Barchan



Identify:

i.) Feature marked X

- + Horn

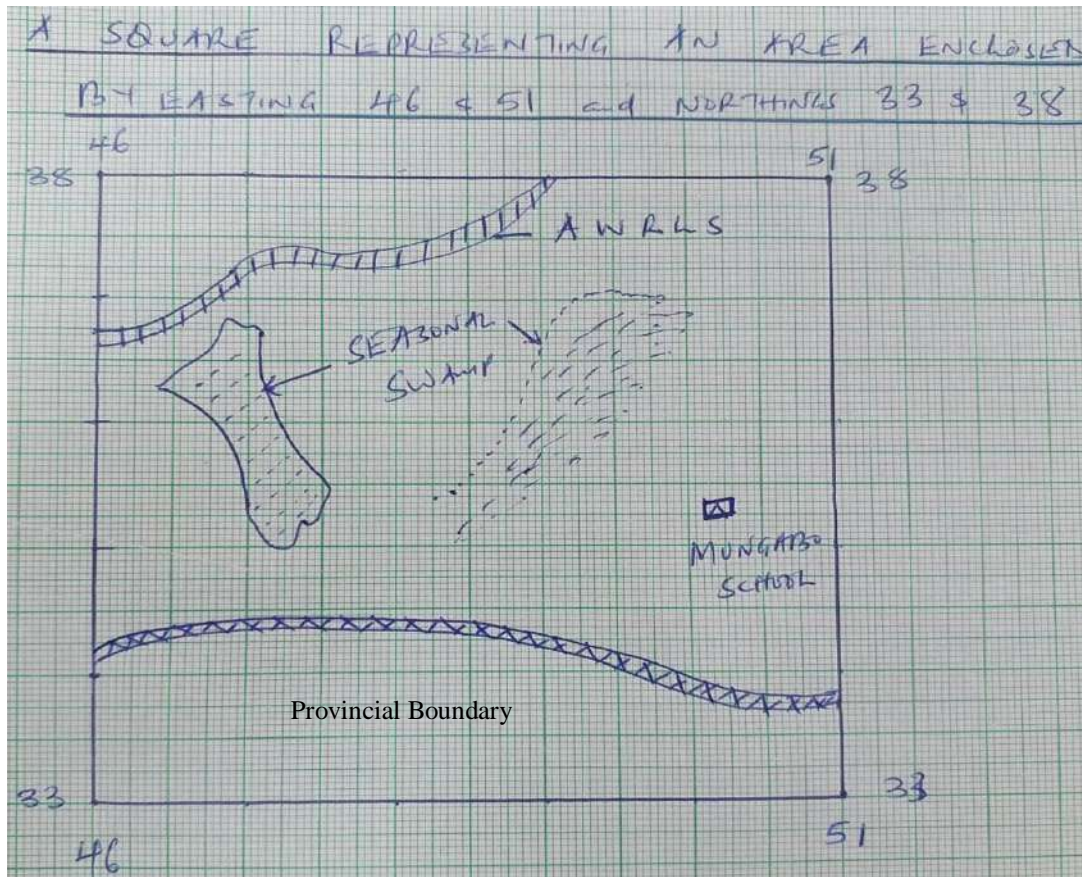
(1 Mark)

- ii.) Slope marked Z (1 Mark)
✚ Steep slope
- iii.) The air current marked Y (1 Mark)
✚ Eddy currents

SECTION B

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

6. (a) (i) What is the magnetic variation of the map? (2 marks)
✚ $2^{\circ}19'$
- (ii) What is the bearing of the photo principle at grid square 6037 from a photo principle of grid square 5340? (2 marks)
✚ 255°
- (iii) Give the six figure reference of the trigonometrical station 10155 in the southern part of the area covered by the map. (2 marks)
✚ 604287
- (b) (i) Calculate the area covered by Nyanza province. Give your answer in kilometers. (2 marks)
- 46 full squares
24 halves = 12
46 + 12 = 58km²
- (ii) Draw a square 10 cm by 10 cm to represent the area enclosed by Easting 46 and 51 and Northings 332 and 38. On its mark and name the following;
- Provincial boundary
 - All Weathered Road loose surface
 - Mungayo school
 - Seasonal swamps



(c) (i) Describe the distribution of settlement in the area covered by the map. (6 marks)

- + There are many settlements in the Eastern part of the area.
- + There are few settlements along river Nzoia.
- + There are no settlements on seasonal swamp areas.
- + There are many clustered settlement patterns in the area covered by the map.
- + There are linear settlement patterns along all-weather road loose surface.
- + There are few/ no settlements along several rivers.

(ii) Citing evidence from the map, explain **three** factors that favor the location of Mumias town. (6 marks)

- + Availability of transport network evidenced by presence of All Weather road loose surface attracted development of Mumias town for easy movement of goods and services
- + Gentle slopping land evidenced by widely spaced contours for easy construction of houses and settlements.
- + Cool climatic conditions evidenced by altitude above 1200m above sea level attracted settlements.
- + Availability of social amenities like teachers training school attracted settlements that helped the growth of Mumias town.

7. (a)(i) Differentiate earth movements and earthquakes. (2 marks)

✚ Earth movements refers to the displacement of the earth's crustal rocks while earthquakes refers to rapid shaking of the ground caused by seismic waves in the crust.

(ii) State three causes of earth movements. (3 marks)

✚ Movement of magma in the crust leading to horizontal displacement of the crust.

✚ Movement of magma in the mantle causing frictional drag on the crust leading to horizontal earth movements.

✚ Occurrence of isotactic adjustment leading to vertical earth movements.

✚ Force of gravity may act on rocks above hollows left by extruded magma during Vulcanicity leading to vertical earth movements.

(iii) Give four evidences supporting the continental drift theory. (4 marks)

✚ The jig-saw fit of the continental margins.

✚ Geological evidence

✚ Paleontological evidence

✚ The Mid-Atlantic Ridge evidence.

✚ Palaeomagnetism evidence

✚ Sea floor spreading evidence

✚ Paleoclimatic evidence

✚ Matching fold mountain zones.

(iv) Name three features associated with the continental drift theory. (3 marks)

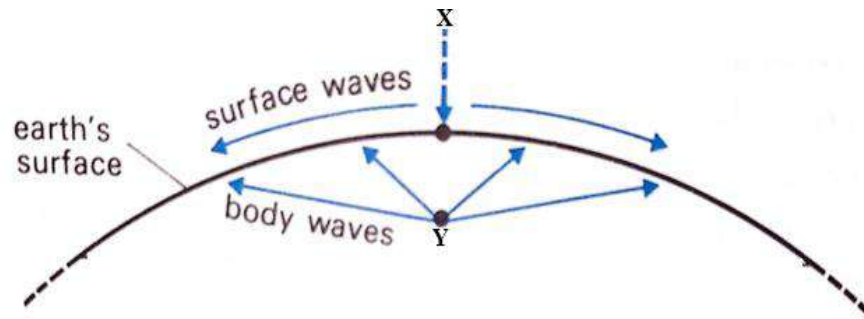
✚ Continents.

✚ Fold mountains

✚ Rift valleys

✚ Oceans

(b) Study the diagram provided below and use it answer the questions that follow.



(i) Identify the parts marked X and Y. (2 marks)

X- An epicenter.

Y- Seismic focus

(ii) Identify the two scales used to measure earthquake's intensity. (2 marks)

+ Rossi-forrel.

+ Mercali scales

(c)(i) Name three major earthquake zones of the world. (3 marks)

+ Along the circum-pacific belt.

+ Along the mid-Atlantic belt.

+ Along the Great Rift Valley.

+ Along the alpine-Himalayas belt.

(ii) Explain three effects of earthquakes on the earth's crust. (6 marks)

+ It causes faulting which leads to lateral and vertical displacement of crustal rocks.

+ It causes faulting of the earth's crust.

+ It may lead to volcanic eruption after faulting.

+ It causes uplifting or down warping of the sea floor and coastal regions.

8.(a) (i) Define the term natural vegetation? (2marks)

- ✚ Refers to plant cover that grows wildly on the earth surface without interference from man or animals.

(ii) Explain how the following factors influence the distribution of natural vegetation in East Africa.?

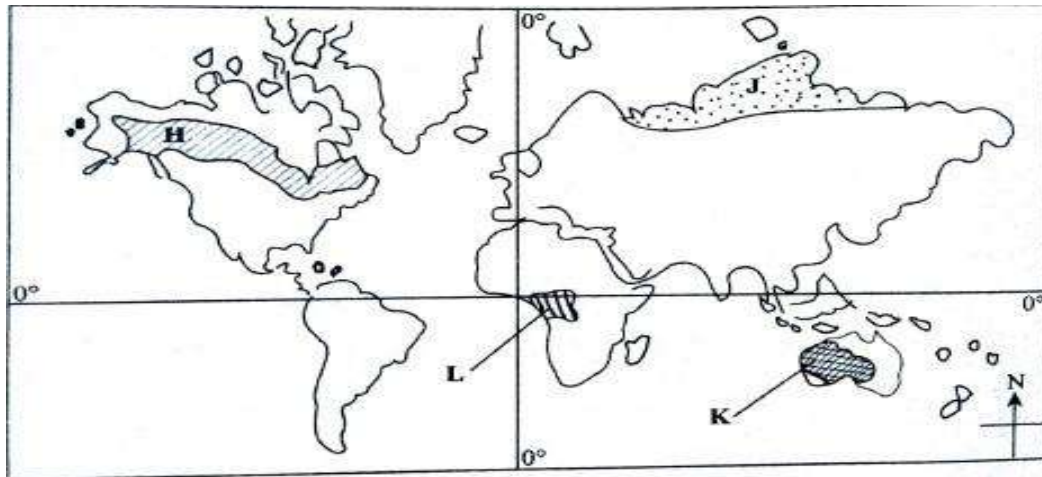
➤ Climate (4 Marks)

- ✚ Areas receiving high rainfall encourage growth of many varieties of tree species/ luxuriant vegetation/ forest.
- ✚ Areas receiving low rainfall have few species/ scanty vegetation.
- ✚ Areas of low rainfall have stunted vegetation.
- ✚ Areas experiencing moderate temperatures have a variety of tree species.
- ✚ Extreme temperatures/ very low/ very high temperatures leads to scanty vegetation in an area.
- ✚ Very strong winds lead to breakage of tree branches or lead to physical damage inhibiting plant growth.
- ✚ Winds helps in dispersing seeds and pollination thus enhancing the distribution of vegetation on the Earth's surface.
- ✚ Moist winds cause increased precipitation in areas they blow over hence large number of plants.
- ✚ Hot dry winds because dry conditions in areas they blow over hence scanty vegetation.

➤ Soils. (2 Marks)

- ✚ Deep, well drained soils support growth of dense vegetation.
- ✚ Shallow/ thin soils support 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/ forest.
- ✚ Thin soils support vegetation with shallow roots thereby supporting grass vegetation.

(b) The map below show the distribution of world vegetation zones.



I. Identify the vegetation zones marked H and J. (2marks)

H-Coniferous forest

J- Tundra

II. Describe the characteristics of the vegetation found in the area shaded and marked L. (5 Marks)

- ✚ The trees grow close to each other. .
- ✚ The trees form canopies
- ✚ The trees have straight smooth trunks.
- ✚ Most of, the trees species are hardwoods
- ✚ The trees are evergreen.
- ✚ The trees have broad/leaves drip-tipped leaves.
- ✚ The forests have little or no undergrowth
- ✚ Forests consist of a variety of tree species.
- ✚ Some of the trees have buttress roots."
- ✚ The trees are tall.

c).State three uses of Savanah vegetation. (3 Marks)

- ✚ The grassland area is used for livestock farming/grazing
- ✚ The vegetation provides habitat for wild animals.
- ✚ Trees are used for bee keeping.
- ✚ Some of the vegetation is used for medicinal purposes
- ✚ Some of the vegetation provides wild fruit and-berries.
- ✚ Trees are a source of wood fuel.
- ✚ Some of the vegetation provide building materials.

d).Form four students of Highlands High school conducted a field study within Kaptagat forest.

I. State two objectives for their study. (2 Marks)

- ✚ To identify vegetation species dominant in the area
- ✚ To find out how the local people benefit from the vegetation.
- ✚ -To investigate problems facing vegetation in the area.

- ✚ To find out methods used to conserve vegetation in the area

II. Give three reasons why it would be necessary to sample part of a forest during a field study (3 Marks)

- ✚ To do a detailed study.
- ✚ To reduce cost of the study.
- ✚ To save on time.
- ✚ Area too large to cover as a whole in a day.
- ✚ Less tiring to study a small area.
- ✚ Some parts may not be accessible as there are no roads.
- ✚ Helps reduce bias.
- ✚ Helps focus on relevant areas for the study.
- ✚ Suitable as vegetation in a forest grows randomly.

III. State two problems they experienced during the study. (2 Marks)

- ✚ Attacks by wild animals / insect / snake bites
- ✚ Adverse weather conditions/too wet/too cold.
- ✚ Thick/thorny vegetation/rugged terrain may hinder movement within the forest.
- ✚ Fatigue due to walking long distances.
- ✚ Inadequate time for data collection.
- ✚ Getting lost/loss of direction to follow.
- ✚ Uncooperative/absent respondent.

9. (a) (i) Distinguish between river discharge and river regime. (2 marks)

- ✚ River discharge is the amount of water passing through a particular point on the rivers course while river regime is the seasonal variation/fluctuation in the volume of water

(ii) Describe the following river erosional processes.

- Abrasion (3 marks)

- ✚ This is the process where the load carried by the river is used to erode river channel.
- ✚ The river uses the load e.g. silt, sand and pebbles to grind, scratch and polish river bed and bank.
- ✚ This leads to deepening and widening of the river.

- Hydraulic action (3 marks)

- ✚ By direct force of moving water
- ✚ It occurs on rocks with cracks
- ✚ Water moves downstream with great force
- ✚ The great force of water hits the rocks especially on the cracks.
- ✚ This leads to the breaking of rocks into small particles

✚ The small particles and then carried downstream

(iii). State two factors that influence the rate of river erosion. (2 Marks)

- ✚ Volume of the water
- ✚ Nature of the bed rock
- ✚ Nature and amount of the load.
- ✚ Gradient and velocity of the river

(b) (i) Name three features formed due to river rejuvenation. (3 marks)

- ✚ Elbow of Capture
- ✚ Mis fit stream
- ✚ Wind Gap/ Dry Valley
- ✚ Nick point

(ii) Describe the formation of an ox-bow lake. (6 marks)

- ✚ It forms in the old stage of a river in the flood plain where the gradient is low.
- ✚ The river begins to meander on the flood plain due to reduced gradients.
- ✚ Lateral erosion occurs on the outer side of the bend while deposition occurs on inner side
- ✚ The lateral erosion results in the reduction of the neck of the land. The neck of land is eventually worn away.
- ✚ Deposition on the meanders side especially during floods blocks off the meander.
- ✚ The river eventually abandons the meander and follows a new short cut that was the neck of the land.
- ✚ Meander that was abandoned forms the Oxbow lake.

(c) Explain three negative effects of the rivers to human environment.

- ✚ Rivers are habitats to some dangerous wild animals e.g. crocodiles which may attack human beings and pose danger to their lives
- ✚ Rivers are barriers to line of transport and communication making their construction very expensive.
- ✚ River water can be breeding zone for deceased carrying breeders e.g. Mosquitoes and snails which causes Malaria and Bilharzia respectively.
- ✚ When rivers floods it destroys crops and displaces settlements

10. (a)(i) Apart from stack, name two other wave erosional features. (2 marks)

- ✚ Wave cut platform.
- ✚ Blow hole
- ✚ Cliff.
- ✚ Stump.

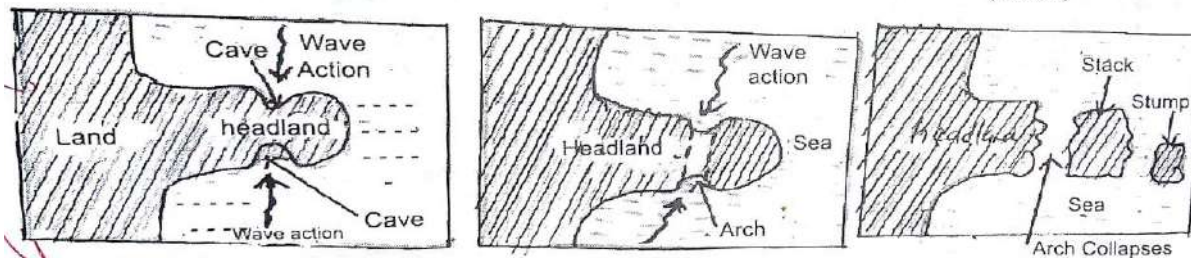
✚ Archs.

(ii) State three factors influencing the rate of wave erosion. (3 marks)

- ✚ The nature of waves whereby Waves with strong swash and a powerful backwash carries out erosion to form erosional features while waves with a weak backwash leads to deposition causing formation of depositional features.
- ✚ Nature of the coastal rocks whereby a coast with alternating hard and soft rocks develops some bays and headlands thus becoming irregular since the soft rocks get eroded faster compared to the hard rocks.
- ✚ The nature of the load transported by the wave whereby Rough load increases the erosive power of the waves through abrasion leading to development of some erosional features.
- ✚ The gradient of the slope whereby Steep coasts encourage wave erosion to leading to formation of cliffed coasts while gently sloping coasts encourage deposition to form depositional features.

(iii) With aid of well labelled diagrams, describe formation of a stack. (8 marks)

- ✚ A coast with headlands is eroded by oblique waves at right angles from the opposite sides.
- ✚ The headland is eroded by abrasion and hydraulic action to form caves on both sides.
- ✚ More erosion enlarges the caves through the head land.
- ✚ The caves join to form an underground tunnel through the headland called an arch.
- ✚ Due to continued wave erosion by solution process, the roof of the arch collapses.
- ✚ The isolated pillar left standing and isolated in the sea is called a stack.
- ✚ The stack can be reduced by wave erosion to form a smaller pillar called a stump.



(b)(i) Name two types of submerged highland coasts. (2 marks)

- ✚ Rias/ creeks coasts.
- ✚ Fjord coasts.
- ✚ Longitudinal/ Dalmatian coasts.

(ii) State four conditions necessary for the growth of coral polyps. (4 marks)

- ✚ Requires warm water for their survival.
- ✚ Requires shallow water to allow sunlight to penetrate and allow growth of planktons as food for polyps.
- ✚ Requires clear water free from sediments to enable the polyps enjoy enough oxygen and gather food.
- ✚ Presence of saline water for Polyps to extract lime to make their skeletons.
- ✚ Requires well oxygenated water which enables fast growth of polyps.

(c) Explain three significance of oceans to human activities. (6 marks)

(6 marks)

- ✚ The land and sea breezes modifies the temperatures of the adjacent lands which makes the coastal lands suitable for settlement.
- ✚ Evaporation and onshore winds from the ocean lead to occurrence of high convectional rainfall which favours growth of a wide range of agricultural activities such as crop farming and forestry.
- ✚ Ocean beds may have mineral deposits which are mined and sold to generate income for the country.
- ✚ Powerful tides and waves may be used to generate electricity which helps to promote industrialization in a country.
- ✚ Beaches offers recreational grounds which attracts tourists who bring income upon visiting.
- ✚ Ocean water may be desalinized and be used both for domestic, industrial and irrigation purposes thus encouraging settlement, agriculture and industrialization.
- ✚ It has some shallow continental shelf which provides suitable conditions for fish breeding which promotes fishing as an economic activity thus earning the country income.
- ✚ It provides building materials such as sand which is used in the building and construction industry thus earning the country some income.