

SECTION A.

Answer All the questions
in this section.

1. a) Name two forces that are
responsible for the general
shape of the earth.

- Centrifugal force
- Centripetal force
- Force of gravity.

(2x2=2 Marks)

b) Give three reasons why
the intensity of solar
insolation is higher at the
equator than at the poles

- There is higher concentration of heating at the equator than at the poles because the surface area at the equator is small.

- The angle of incidence of the sun's rays at the equator is higher than at the poles hence the variation in intensity.

- At the poles the sun's rays travel over a longer distance than at the equator thus losing the heat resulting to low intensity.

(3x1=3 Marks)

2. The map below shows the world's seismic zones. Use it to answer question (a).

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a) Name the seismic zones marked u and v

- u - Mid-Atlantic Ridge
- v - circum-pacific belt.

(2x1=2marks)

b) State three ^{natural} causes of earthquakes

- Collision of tectonic plates
- Energy release in the mantle.
- Isostatic adjustment.
- Violent volcanic eruptions
- Gravitational pressure
- Magma movement within the crust.

(3x1=3marks)

Section A.

Q 3

(a) Give two flow movements of materials. (2marks)

- Earth flows ✓
- Mud flows ✓

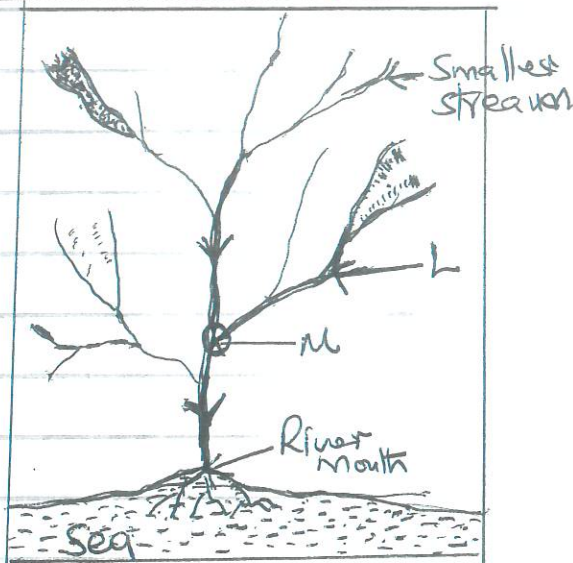
b) State three causes of soil creep. (3marks)

- ✓ - Alternate heating and cooling cause expansion and contraction thus movement of materials.
- ✓ - Freezing of soil water lifts the soil particles and as they fall back, they shift position.
- ✓ - Removal of soil downslope on the lower parts triggers the movement of soil downslope.
- ✓ - Rainwater percolating into the soil drag the soil grains causing downslope.
- ✓ - Ploughing across the slope causes the soil to be turned towards the lower side of the slope.

(any 3x1 = 3marks)

Section A

4. Name the ~~five~~ diagram ~~shown~~ below shows a river and its tributaries. Use it to answer the question (a)



- (a) Name the parts ~~name~~ marked L and M. (2 marks)
- L - Tributary.
 - M - Confluence.

- b) State three factors that influence river ~~the~~ deposition. (3 marks)

- Reduction/Reduced gradient/velocity
- Decrease in the volume of water in the stream.
- ~~Decrease in river~~ Nature and amount of load.
- Presence of obstacles in the stream channel.
- Widening of the stream channel/river bed.
- River entering into a calm water body.
- Freezing of river water.

6

5(a) Identify two types of desert landscape

- Sandy desert / Kour / Erg
- Stony desert / Serir
- Rocky desert / Hamada
- * - Badland

(2 marks)

b) Describe ~~the~~ wind def

b) Describe how wind erode the desert surface by deflation.

(3 marks)

- The wind picks up dry/loose unconsolidated material such as dust and fine sand particles, and sols them on the ground and lifting them up in the air
- Mostly occur where ~~the~~ desert surface is faulted/jointed and made up of soft rocks.

(21)

SECTION B

Qns Answer question 6 and any other two from this section.

Qn 6 Study the map of ~~Kenya~~ North Tinderet (1:50,000) provided and answer the following questions

- a) What is the position of the North Eastern corner of the map by latitude and longitude (2mks).
- (i) Calculate the area of North Ainabkoi bounded by Ainabkoi feeder road and Uganda Coast road with Municipality boundary. (2mks).
- (ii) Name two types of planted vegetation in the area covered by the map (2mks).
- b) Measure the distance of the power transmission line from the trigonometrical station 103512 (in the southwest) towards the west. Give your answer in metres. (2mks).
- (ii) What is the bearing of Senghalo sawmill site from the waterhole at grid 7417 (2mks).

(8)

c Draw a Crosssection along Northing 24 from Easting 51 to Easting 58 (use 1cm represent 40m) on it mark and name the following features (2mks)

- (i) Season Swamp 1mk
- (ii) Lessos shops 1mk
- (iii) District boundary 1mk
- (iv) River Kirubi 1mk

(ii) ~~Explain~~ Explain how drainage has influenced the distribution of settlements in the areas covered by the map. (4 marks.)

(ii) ~~Explain~~ Describe the relief of the area covered by the map (5 marks)

(9)

7. a) What is vulcanicity?

It is the process through which gaseous/liquid/molten rock/solid materials are forced into the earth's crust and ejected onto the surface.

(2 marks)

b) Name two dome shaped intrusive volcanic features.

- Batholith
- Laccolith

(2x1=2 marks)

b) Name two volcanic features found in the Rift Valley of Kenya.

- Hot springs/geysers/steam jets
- Craters/calderas/crater lakes
- Volcanic mountains
- Lava plateau
- Ash and cinder cones
- Plug domes/spines
- Tuff cones/colfatara

(2x7=2 marks)

(10)

ii) Describe how a basaltic lava dome is formed.

- Earth movements occur leading to the formation of a vent in the earth's crust.
- A volcanic eruption of basaltic magma occurs through the vent/series of vents.
- At the surface, the lava flows in all directions around the vent.
- The lava flows for a long distance from the vent before cooling and solidifying.
- Several/successive eruptions of basaltic lava occur leading to piling up of lava to form layers of lava.
- It may have a crater at the top.
- Eventually a large, low-lying volcanic dome with a broad base forms called a basaltic lava dome.

(5x1=5 marks)

iii) Give ~~two~~ ^{three} characteristics of a parasitic cone.

- found on the side of a composite cone

(A)

- Composed of alternating layers of lava and pyroclastic ash.
- May have a crater at the top.
- Have steep slopes.

(3x1=3 marks)

c/ Explain three negative effects of volcanic features to human activities.

- Flowing lava/hot ashes and dust/poisonous gases emitted during volcanic eruptions may cause loss of lives/destroy property.
- Weathered volcanic materials like ashes and granite can result in infertile soils which discourage agriculture.
- Some features resulting from volcanicity create barriers, making construction of communication lines/houses difficult and expensive eg Yatta plateau, volcanic mountains.
- Rugged nature of some volcanic landscape discourage economic activities such as agriculture and establishment of settlements.

- Volcanic mountains create a rain shadow effect on their leeward side which cause aridity & discourage settlements / arable farming.
- Dust emitted during volcanic eruptions interfere with air transport.

(3x2 = 6 marks)

Q/ Suppose you carried out a field study on volcanic rocks near your school.

i/ Give three reasons why students collected rock samples.

- There is no adequate time to carry out lab tests in the field.
- Students do not have adequate skills to analyse samples, so there is need for expert opinion.
- To enable them to build a collection of rock samples for future reference.
- It would expose more students to their findings through display of their findings.

- To create more interest
motivation and to deepen
the understanding of the
subject.
(2x1 = 2 marks)

ii. Give two disadvantages
of using direct observation
method in collecting data
during the field study.

- It is expensive if one
has to travel long distances.
- It is tiresome.
- It is time consuming.
- It is limited to direct
sources/primary sources of
data.
- It is only suitable for
the sighted people.
- Some features may be
hidden/out of view.

(2x1 = 2 marks)

Q8
Q8

a) Distinguish between weather and climate (2mks)

i) Describe a suitable site you would locate a weather station in your school (3mks)

b) Identify the type of rainfall experienced in the Lake Region of Kenya and describe how that type of rainfall is formed. (4mks)

i) State the characteristics of the climatic conditions experience in the Kenyan Highlands. (4marks)

c) Explain how the following factors influence climate

i) ~~Continentality~~ Distance from the sea (2marks)

ii) Aspect (2mks)

d) Account for three characteristics of the Equatorial climate (6marks)

i) Give ~~three~~ ^{two} measures that can be taken to control the effects of climate change.

(2 marks)

Q9

(15)

Q. a) Name two sources of underground water. (2 marks)

i) What is a spring? (2 marks)

ii) State three factors which influence the occurrence of springs (3 marks)

b) State four ~~necessary~~ conditions necessary for the formation of an artesian well (4 marks)

ii) Explain three ways in which underground water influences human activities (6 marks)

c) Apart from a barchan, name two features formed by wind deposition in arid areas. (2 marks)

ii) Using a well labelled diagram, describe how a barchan is formed. (6 marks)

10.

a) Distinguish between moraine and till. (2 marks)

Moraine is the materials carried by a glacier while till is the materials directly deposited by ice when it melt/upon melting. ✓ (2 marks)

ii) Name two areas in the world where ice sheets exist today. (2 marks)

- Antarctica
- Greenland.
- Alaska (Northern parts of North America.)

b) The diagram below shows an erosional feature in a glaciated lowland. Use it to answer question (i) and (ii).



(i) Identify the feature shown in the diagram. Roche Moutonnée (1 mark)

ii) Describe how the feature shown above is formed. (3 marks)

- Ice moving across the landscape meets a resistant rock outcrop.
- The upstream side is smoothed by abrasion forming a smooth gentle slope
- The downstream side is eroded by plucking leading to a steep and rugged leeward slope

This produces a resistant rock which has a smooth upstream and rugged leeward called a roche moutonnée.

(max 3 marks)

ii) Describe how an outwash plain is formed. (4 marks)

- ✓ large masses of ice sheets stagnate on a gently-sloping lowland.
 - ✓ As they stagnate, the ice starts melting along the edges / at the terminus / snowline
 - The melting ~~water~~ ice provide large quantities of water which carry the moraine farther beyond the terminus.
 - ✓ - The heaviest materials are deposited first near the margin while finer materials are carried and deposited farther away.
 - ✓ Pre-existing depressions and valleys are buried by the fine deposits
 - The fluvio-glacial materials accumulate into very thick layers
 - ✓ - This forms an undulating plain of clay, silt and gravel called an outwash plain
- (6 ticks max 4 marks)

c) Explain ~~four~~ ^{three} ways in which glaciation influence human environment (6mks)

- Glaciated highlands are ~~attractive~~ beautiful and ~~attract~~ ^{attract} and act as tourist attractions hence a source of foreign exchange.
- Some glacial lakes are natural transport routes hence used for cheap transportation.
- Waterfalls formed from hanging valleys are ideal sites for HEP generation plants
- Boulder clay plains, outwash plains ~~have~~ are fertile hence used for agriculture. eg Canadian prairies
- Many glacial valleys have good pastures in summer, ~~while~~ so they provide good pasture in winter while the slopes are good frazing grounds in spring.
- Sand ~~can be~~ excavated from the outwash plains kames & eskers, and are used for building and construction.
- Roads have chattered waters suitable for breeding of fish.
- Glacial erosion expose minerals making it easy to exploit.
- Boulder clay deposits create marshy grounds hence discourage agriculture
- Infertile sand on the outwash plains make the land unsuitable for agriculture
- Glaciation erosion lead to formation of rugged landscape making it difficult to construct settlement and transportation lines.
- Moraine deposits result in formation of numerous lakes thus reduce land for various use.

d. You carried out a field study on glacial erosion on Mt. Kenya.

(i) Give two erosional highland features you identified. (2 marks)

- Corries / Corrie / Tarn.
- Rock basin.
- Pyramidal peaks.
- Arêtes.
- Hanging valleys.
- Glacial trough.

(any 2 x 1 = 2 mks)

(ii) State three ~~reasons why~~ ^{challenges} ~~they~~ you faced ~~in~~ using observation as a method of data collection. (3 mks)

- Time consuming.
- Time consuming to reach every feature.
- Some features were obscured.
- Poor visibility due to foggy conditions.
- Some areas were inaccessible because of the rugged terrain and thick forest.
- Difficulty in identifying the features.
- Biasness.

(any 3 x 1 = 3 mks)

(iii) Give two reasons why ~~they~~ you needed a route map. (2 marks)

- To find the direction.
- Follow appropriate routes.
- Locate the features.
- To enable ~~them~~ ^{you} to save time.