

KAKAMEGA NORTH SUBCOUNTY JOINT EXAMINATIONS

KCSE Exam2018

GEOGRAPHY PAPER 1

MARKING SCHEME

SECTION A

1. (a) What is Geography ?

- It is the study of the distribution and interrelationship of physical and human phenomena in relation to the earth surface.

(b) Give two reasons why the interior of the earth is hot?

- The weight of the overlying materials exert pressure on the interior hence generating heat.
- During formation of the earth the outer part cooled faster than the interior thus retaining the heat.
- Radioactivity in the mantle lead to release of energy which generates heat.(any 2 x 1 = 2mks)

(c)Distinguish between meters and meteorites

- Meteors are rocky metallic like matter entering into the earths atmosphere at a high speed and burn up forming a streak of light while
- Meteorite are remnants of a meteors that fail to burn up in the atmosphere hence fall/reach the earth s surface. (complete difference x 2 = 2mks)

2.(a)Identify the types if folds

- (i) Isoclinal fold (1mk)
- (ii) Overfold (1mk)

2. (b)State three negative effects of folding to human activities.

- Folding result in formation of rugged landscape which discourages settlement &cultivation of crops.
- Cold winds descending over the slopes of the fold mountains destroy crops.
- Fold mountains act as barriers to transport and communication.
- The leeward slope s of the fold mountains discourage agriculture due to rainfall
- Folding may lead to burying of minerals deep in the crust making it difficult to exploit. (any 3 x 1 =3mks)

3(a) State two causes of soil creep

- Heating and cooling of soil particles loosens them causing the particles to move.
- Alternating wetting and drying of soil particles cause the soil particles to expand slightly and addition of weight hence move / Dry soil particles also move.
- Freezing of soil water lifts the soil particles at right angles to the slope and drops perpendicularly to the horizontal plane.
- Rainwater percolating in the soil drags the soil particles / grains hence change position down slope.
- Ploughing across a slope causes soil to be turned to the lower side thus shift downslope.
- Removal of soil down slope. / On the lower part of the slope triggers movement of soil from the upper part.

- Grazing animals trample on soil loosening them hence soil particles move downslope.
- Burrowing animals break and loosen soil causing the particles to move/shift downslope

3. (b) Parts marked

(3mks)

- P – Rock joint / crack
- Q – Layer of shale
- R – Block of rock

4. (a) Features marked:

(3mks)

- C – elbow of capture
- D – Windgap
- E – Misfit stream

(b) State two courses of river rejuvenation

(2mks)

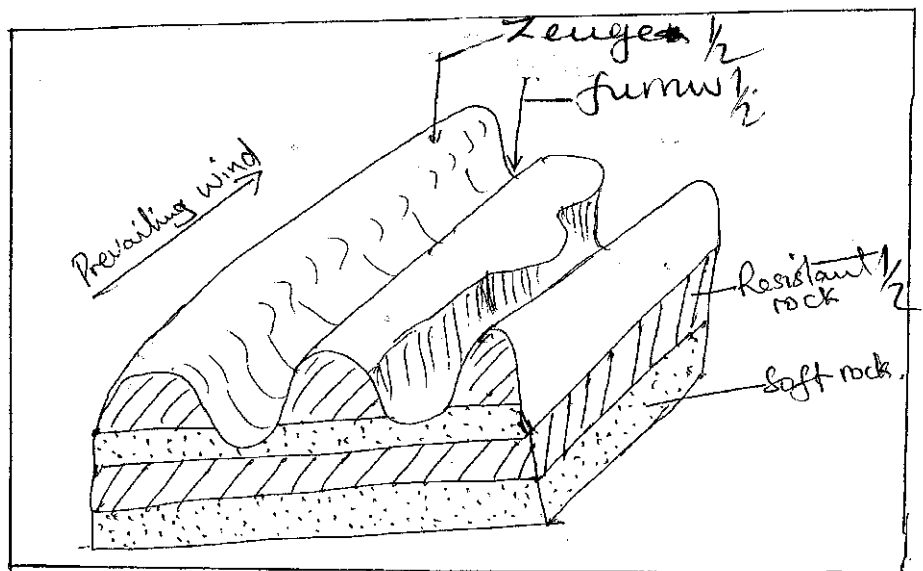
- Drop in sea level. fall in sea level
- Regional or local uplift of the land.
- Unequal regional subsidence of the land
- Increase in river discharge.
- Change in rock resistance

5. (a) State two physical factors that contribute to the development of Sahara Desert

(2marks)

- Insufficient rainfall
- High temperature
- Rain shadow effect by relief barriers
- Descending winds at high pressure belts.
- Dry prevailing winds/global winds
- Effect of cold oceans currents
- Influence of continentality

(b) Draw a well labeled diagram to show a Zeugen

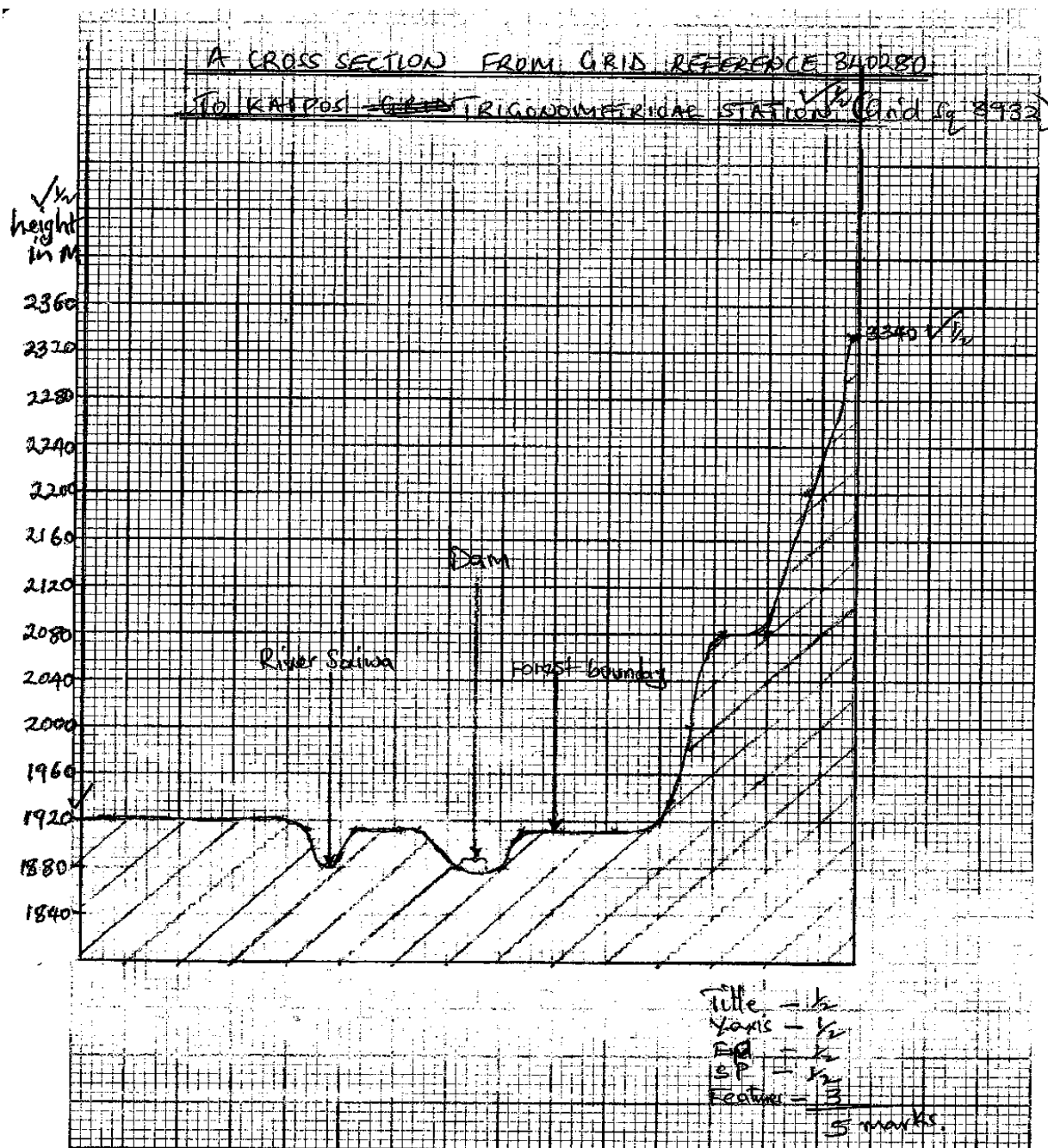


6. (a) (i) bearing 223° ✓✓ 2 marks
(ii) magnetic variation – $2^{\circ} 23'$ ✓ 1 mark

(b) 3 types of settlements patterns (3 marks)

- Linear – evidence 2614 ✓ / Kitale / 4213
- Dispersed – eastern part of the map extract ✓
- nucleated – evidence – 3613 / 2919 / 3727

- (c) (i) on the graph (5 mks)



(ii) gradient (2 marks)

$$\frac{VI}{HE} = \frac{1900-1880}{3550} = \frac{20}{3550}$$
$$= 1:178 / \frac{1}{178} \checkmark \checkmark$$

(d) (i) **Explain 3 factors that favour the growing of wattle in the area covered.**
(6 marks)

- presence of permanent rivers
- Presence of forests
- Growing wattle / plantation

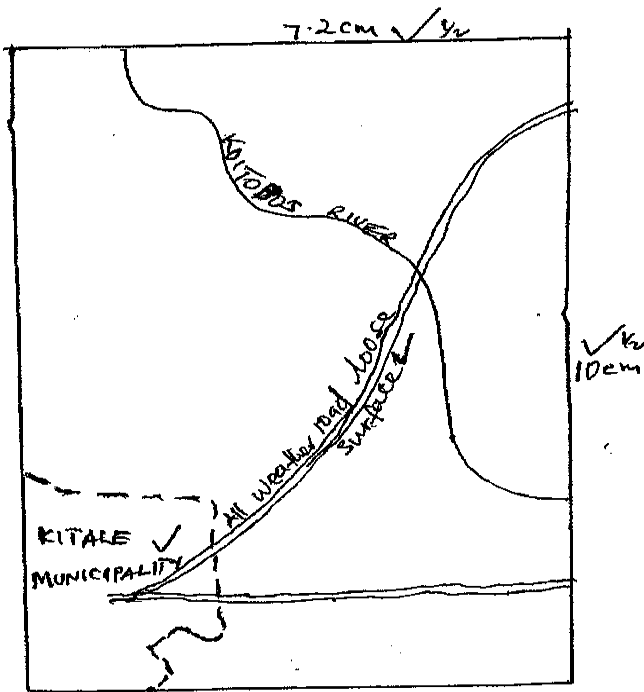
(ii) **Evidence for wet climate.** (2 marks)

- Availability of rainfall as evidenced by permanent rivers. Forests for the growth of wattle. $\checkmark \checkmark$
- Well drained soils as evidenced by the spaced contours for the growing of wattle. $\checkmark \checkmark$
- Availability of labour as evidenced by many settlements which provides labour for working in the plantations $\checkmark \checkmark$
- Transportation as evidenced by the dry weather roads / all weather road loose surface. For the transportation of wattle to the factory $\checkmark \checkmark$
- Cool climate as evidenced by the high attitude evidenced by contour heights of above 1800 m which favours the growth of wattle. $\checkmark \checkmark$

Any 3 x 2 = 6 marks

Explanation must be mentioned to score

(e)



7. (a) (i) **Differentiate between vulcanicity and volcanicity**

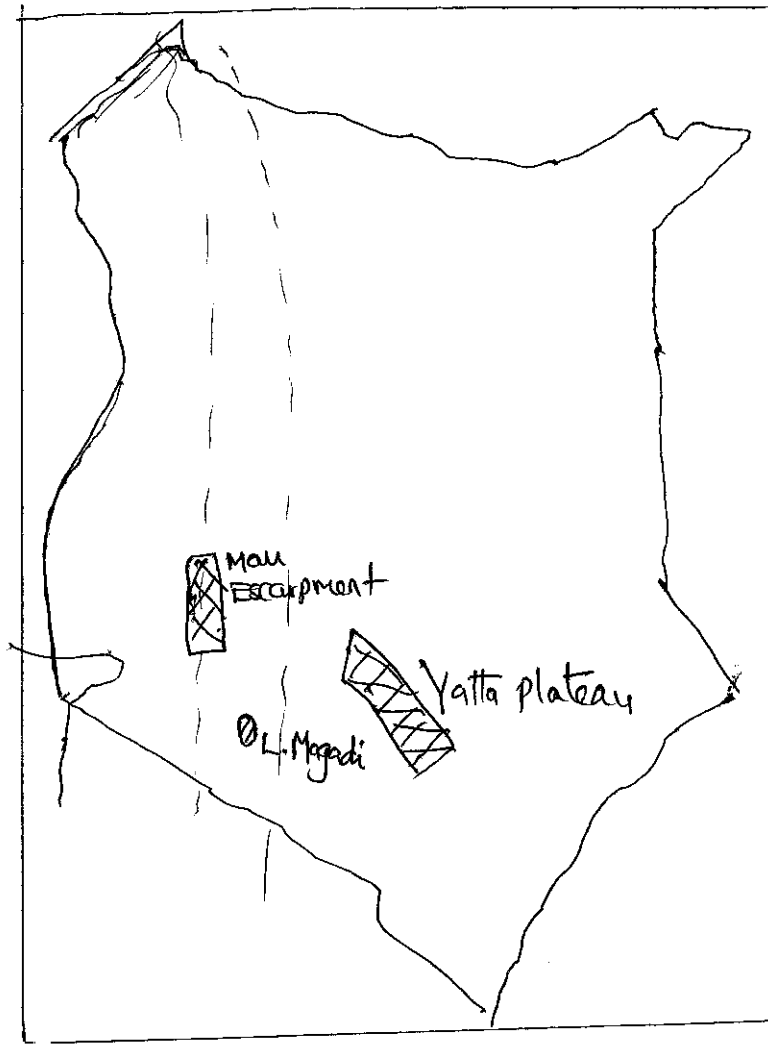
(2marks)

- Vulcanicity is the process by which solid liquid and gaseous material (molten rock) intrude into the crystal rocks or extrude on to the earth surface while volcanicity is process where igneous material extrude onto the earth surface and form volcanoes.

(ii) Draw a map of Kenya

(1mark)

on it locate and name



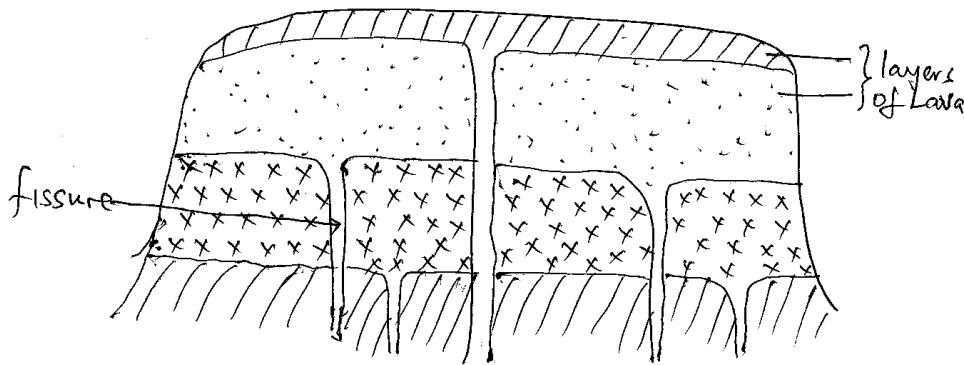
key

M- Mau escarpment
O -Lake Magadi
Y - Yatta plateau

b)With the aid of a well labeled diagram describe how the following features are formed.

- i) Lava plateau (5 marks)
- ii) Sill (3 marks)
- (i) **Lava plateau**

Lava plateau



Text (3mks)

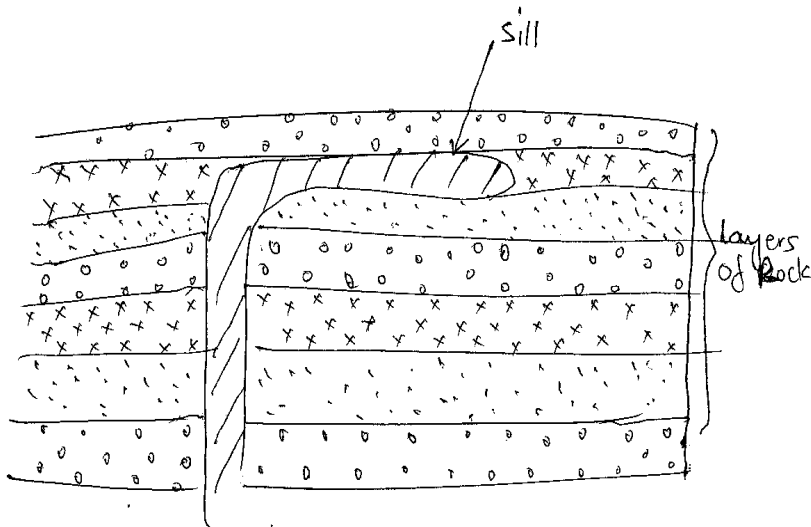
Diag (2mks)

- Earth movements causes fissures/cracks/vents in the crustal rock✓
- Hot molten ultra basic – basic magma rock intrudes into the crustal rocks through the fissures and flows on to the earth surface covering long distances.✓
- A series of subsequent flows through new fissures and accumulates on the pre-existing layers covering the valleys and hills.✓

*This flat topped hill/mt bordered by steep slopes is called a lava plateau✓

*Must be mentioned to score M

(ii) Sill



- Earth movements causes vents, cracks in the crustal rocks
- basic magma intrudes into crustal rocks and solidifies along and in between the bedding planes/solidifies in horizontal cracks between bedding planes.

*this tabular intrusion along the bedding planes is called a sill.

(c) (i) Give two characteristics of the Gregory rift valley. (2mks)

- The rift valley is wide in the North (100km) and narrow in the South (50km)
- The rift valley varies in height between (600-1800m)
- The rift valley floor has volcanic Mts
- The rift valley floor has lake depressions
- There is grid faulting on the floor in the South
- Some areas like Kijabe have steep faults
- the valley is bordered by steep fault/tilt blocks / escarpments

(ii)Field study on faulting in the Riftvalley design a working schedule to use during the study

- 8.00 a.m –Collect and assemble the equipment
- 9.00 a.m –Depart for the field study
- 10.00am – Report to the authorities at the K.W.S office in the field.
- 10.15 a.m –Embark on data collection
- 3.00 p.m - Report back to the authorities
- 3.15p.m – Depart back to school.

(d) Explain three negative influences of vulcanicity and associated features on human activities in Kenya (6mark)

- Volcanic dust emitted into the atmosphere causes invisibility hence accidents and climate change
- Volcanic mts create barriers to communicate and transport networks making them difficult & expensive to construct due to the steep rugged landscape.
- Volcanic mts create rainshadows on the lee ward side that results into aridity which limits cash crops farming
- Recent volcanic lava flows disintegrate into infertile soils that discourage cash crop growing
- Poisonous gases such as CO_2 & sulphur dioxide may eject into the atmosphere hence causing air pollution that may endanger lives causing respiratory diseases and acid rain which corrodes buildings and destroys vegetations /crops.

8. a(i) Differentiate between a barrier reef and a fringing reef (2mks)

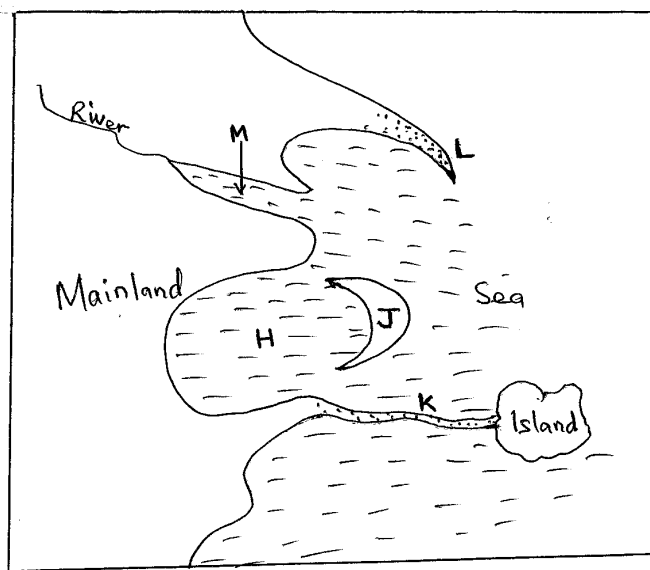
- Barrier reef is fringing reef forms a long distance away form the shore with a wide deep lagoon. While a fringing reef is a platform of coral build near the shore with a shallow lagoon. ✓✓

(ii)Causes of ocean currents (3mks)

- Winds✓
- Earth rotation✓
- Shape of the landmasses✓
- Differences in water temperatures✓

Any 3 x 1 = 3mks

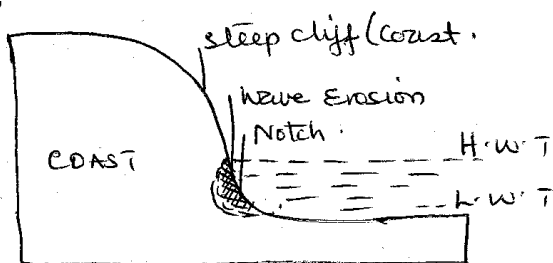
b) On the diagram name the features marked H,J,K,L (4mks)



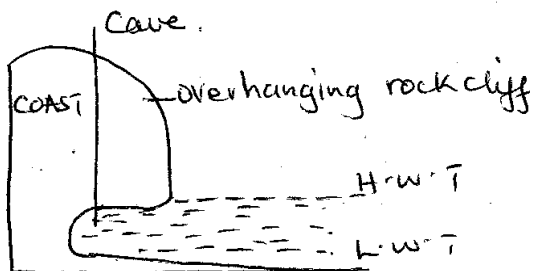
- H- lagoon✓
- J -Offshore bar✓
- K - Tombolo✓
- L -- Spit✓

Any 4 x 1 = 4mks

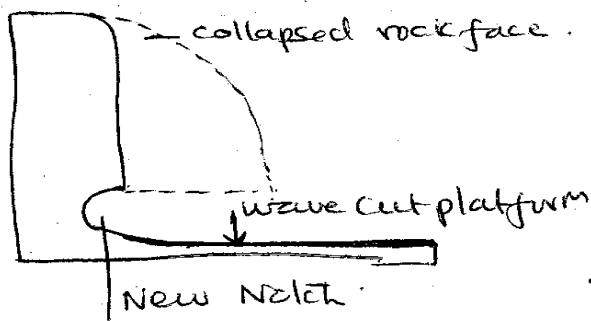
(c) With the aid of diagrams describe how a wave – cut platform is formed. (6 marks)



Wave erosion attacks a steep sloping coast or cliff by hydraulic action, abrasion and solution forming a notch between the high and low water tide. ✓



Over time, continued wave erosion enlarges the notch into a deep cave as the land above the cave forms an overhanging rock cliff. ✓



Weathering attacks the over-hanging rock cliff as the wave erosion continues to enlarge the cave at the base of the rock face. ✓

The overhanging rock cliff collapses exposing a new cliff. As the cliff continues to retreat a floor of the sea between the original cliff and the new cliff is exposed forming a fairly rock platform called a wave-cut platform. ✓

(d) Explain how the following factors influence development of coasts

(i) Climate

(2 marks)

- Warm conditions in the tropics provide conditions for the growth of polyps and development of coral hence coral coasts.
- High temperatures result into melting / thawing of glaciers leading to a rise in the sea level hence the development of submergent coasts.
- Low temperature results into freezing of water into glacier and the fall in sea level hence the development of emergent coasts.

(ii) Gradient of the Coast

(2 marks)

- A steep coast experiences wave erosion hence erosional features.
- A gentle coast experiences wave deposition hence depositional features.

(e) Your class intends to carry out a field study on the features along the coast of Kenya.

(i) Why would they need to carry out reconnaissance

(3 marks)

- To formulate objectives / hypothesis
- To draw the route map
- To prepare a working schedule
- To identify methods of data collection / recording
- To identify the equipment for the study
- To seek permission from relevant authorities.

(ii) Give three disadvantages of using observation to collect data

(3 marks)

- Cannot be used by visually impaired students
- It is biased due to subjectivity by the observer
- It is expensive due to travelling
- It takes a long time in carrying out the observation
- May be difficult to use when the weather is bad e.g. fog or rain.

9. (a) Distinguish glacial till and fluvio-glacial till

- Glacial till: - the moraine/material directly deposited by ice on melting in an stratified manner while fluvio glacial tillar materials that are deposited by the water from melting ice in a stratified manner

(2mks)

(b) Factors that determine the rate of ice movement

- Gradient of the land – ice moves faster on steep slopes than on gentle ones.
- Season – movement of ice is faster during summer (thawing common) than in winter (thawing rare)
- Friction – the centre parts of a glacier move faster than the sides and at the bottom
- Thickness & weight-thick mass exerts great pressure beneath causing melting and therefore faster movement unlike thin masses which remain frozen most of the time.

(Any 3 correct factors well explained 3 x 2 = 6 m)

(c) (i) Ref Diagram

J – till plain

L – esker

K – Drumlins

M-Kettle lake

(4 X 1 = 4mks)

(ii) moraine – dammed lake

- widening of a valley through ice – erosion/melting at the snowline occurs
- Deposition of terminal moraine across the widened valley /at the snowline
- the glacier melts and retreats
- *Accumulation of melt water behind the terminal moraine.
- continued melting of ice boosts the amount of melt water behind the terminal moraine to form a moraine –dammed lake.

*must be mentioned

Max (4mks)

Outwash plain

- large ice sheets stagnate on a gently sloping landscape and start melting along the edges
- the sub- glacial melt water spreads out carrying fine materials.
- the fine materials deposited further down slope as ice retreats
- pre-existing valleys/depressions are buried by these fluvi-glacial materials
- the unconsolidated clay, silt, sand and gravel that is deposited enmass covers a wide area forming an undulating plain called an outwash plain

Max (4mks)

d. Field work

i) 2 methods of collecting data

- Observation
- Taking photography
- content analysis/reading secondary materials

(Any 2 correct 2 x 1 = 2mks)

ii) -ve effects

- Glaciated rugged landscape that would make it difficult for settlement /agriculture or constructing transportation lines

(1mk)

iii) Follow-up activities

- Reading more on the topic
- Displaying photographs
- Writing reports
- Assessing the information against the hypothesis

(any two correct 2 x 1 = 2m)

10.(a) (i) State three characteristics of the ITCZ.

(3mks)

- Found within latitudes $23\frac{1}{2}^{\circ}$ N & S of the equator
- Experience high temperature
- A zone of low pressure and the doldrums
- Zone of the convergence of the S.E & N.E trade winds
- Associated with convectional rainfall and thunderstorms.
- Migrates to the North and South of the equator with the apparent movement of the overhead.

(Any 3 x 1 = 3mks)

ii) Describe how the following factors influence climate

Configuration of the coastline

(2mks)

- This is the alignment of the coastline in relation to the prevailing onshore winds.
- An irregular/indented coastline will experience moist onshore wind thus resulting in high rainfall.
- A regular /straight coastline experience low/very little rainfall because the winds blow parallel to the coastline.

Distance from the sea

- Areas near the sea experience a cool sea breeze during the day which lowers the temperature / areas further inland remain hot due to high temperature
- Areas near the sea experience a warm land breeze during the night which increases the temperature / areas inland remain cold due to low temperatures.
- Areas close to the sea experience high humidity due to high rate of evaporation this decreases inland.
- Areas close to the sea experience high convectional rainfall which decreases inland.

b. (i) Name the regions marked

- A - Hot desert /tropical desert climate
- B- Warm temperature eastern margin
- C – Tundra climate

(1 mark each – 3mks)

(ii) Name the vegetation types marked

- H – Temperate Grasslands (pampas)
- J - Tropical rainforest

(1mk)

(1mk)

iii) Explain three ways in which the coniferous forest have adapted to the climatic conditions.

- Trees have needle like leaves to reduce the loss of water from trees in winter.
- Leaves have tough waxy skin to protect them from winter cold
- Trees are conical in shape & flexible branches to combat snow/snow to slide off easily
- Most trees are evergreen to allow maximum utilization of sunlight during short growing season
- Tree trunks are flexible to enable them sway without breaking during strong water winds.
- Trees have widely spread shallow roots for utilization of moisture from the top soil.

(any 3 explained x 2 = 6mks)

(d) Field study in a marginal area experiencing desert encroachment

(i) State two objectives for your study

- To find out the cause of encroachment
- To establish the extent of the encroachment
- To determine the measures used to control the encroachment

(Any 2 x 1 + any other relevant = 2mks)

ii) How would you record your findings in the field

- Taking photographs /filming
- filling in questionnaires
- Drawing sketches
- taking notes

iii) Describe three findings on the cause of the encroachment.

- Insufficient rainfall experienced over long time
- High temperatures experienced consistently leading to high evaporation rates.
- Cold ocean currents causing dry conditions.
- Place is located far from onshore moist winds/continentality/distance from the sea
- Dry winds blowing the land
- Area is located at regions of divergence of winds hence absence of moisture.
- Cutting down of vegetation to create room for agriculture/charcoal.
- Overgrazing leading to exposure of soil hence soil erosion.
- Fire outbreaks due to honey harvesting thus destroy vegetation.
- Sand storms pushing sand dunes further into the marginal areas.
- Over cultivation, ploughing down the slope which has caused soil degeneration.