**KASSU JOINT EXAMINATION - 2018**

**Kenya Certificate of Secondary Education *(K.C.S.E.).***

**312/1**

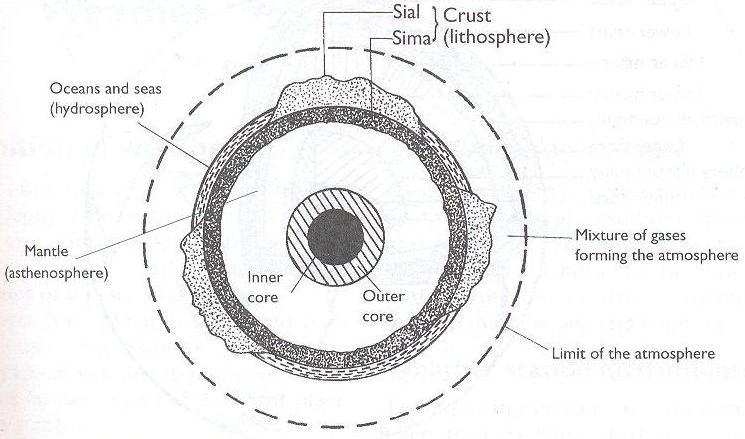
**Paper 1**

**GEOGRAPHY.**

**MA R K I N G S C H E M E**

**SECTION A**

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



1. Name the parts marked X and Y. ***(2 marks)***

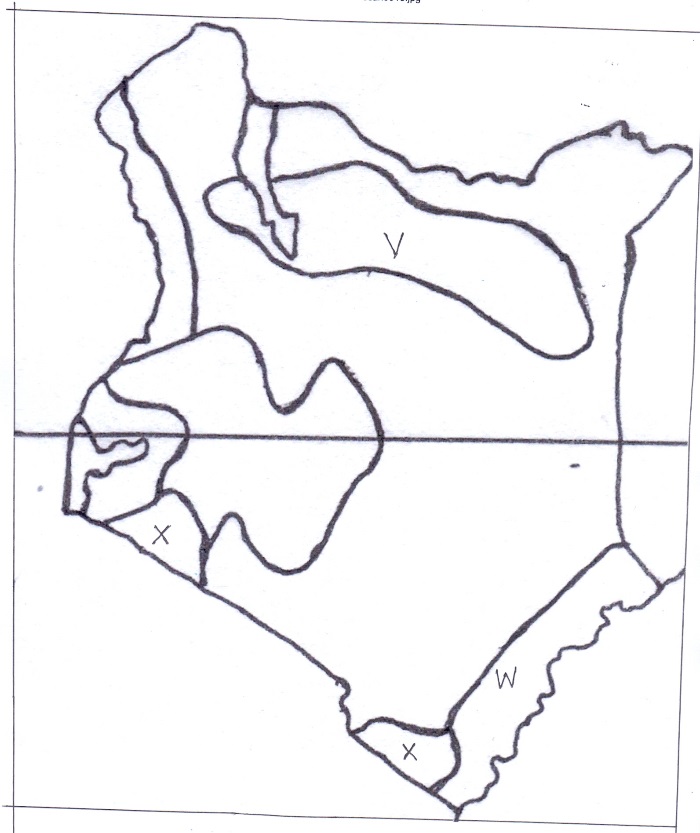
X - *Ocean crust/SIMA*

Y - *Inner core*

1. State ***three*** characteristics of the upper mantle. ***(3 marks)***

* *Is elastic and solid/semi-molten in nature.*
* *Has lower temperature than lower mantle.*
* *Extends from more discontinuity to a depth of 100km*

2. The map below shows the climatic regions of Kenya



(i) Name the climatic region marked **V**, **W**. ***(2 marks)***

***V*** *– Desert climate / Desert climate of central Northern areas.*

***W***  *– Modified equatorial climate of the coast.*

(ii) State ***three*** characteristics of the climatic region marked **X**. (***3 marks)***

* *Temperatures are high / 230C – 310C*
* *Rainfall is low to moderate about 670mm*
* *Receives rain one season*
* *Rainfall mainly convectional*
* *Have low humidity*

3. (a) Differentiate between earthquake intensity and magnitude ***(2 marks)***

*Earthquake intensity is the measure of how hard/strong the earthquake waves / seismic waves shakes the earth surface while earthquake magnitude is the measure of the amount of energy given off by an earthquake.*

(b) Name **three** earthquake zones in the world ***(3 marks)***

* *Circum – pacific*
* *Mediterranean – East Indies Belt / The Tethyam Belt / The Alpine – Himalay GS Belt.*
* *Mid-Atlantic Ocean Belt*
* *The great Rift Valley*

4. (a) Distinguish between oceans and seas. ***(3 marks)***

*Oceans are large and extensive body of saline water occupying basis between continents while seas are small and extensive body of saline water occupying margins of continents.*

(b) State ***three*** factors causing the development of ocean currents. ***(3 marks)***

*- Prevailing wind causing a frictional drag on the Ocean water surfaces.*

*-Rotation of the earth affecting the direction of wind both in North and Southern*

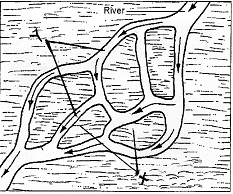
*poles.*

*-The shape of the coastline*

*-Differences in Ocean water temperature.*

5. (a) The diagram below shows a river braid. Identify the features marked **X**

and **Y**. ***(2 marks)***



***X*** *- shoals / Eyots / Isles*

***Y*** *- Braids*

(b) State ***three*** conditions for the formation of a delta. ***(3 marks)***

* *The river must have a large load of sediments at the river mouth*
* *Absence of obstacles / filters in the river course.*
* *The river should be flowing slowly on entering its mouth / Low velocity of the river at the river mouth.*
* *The strength of the Ocean waves should be weaker to allow deposition of sediments.*
* *High rate of deposition than removal of silt at the river mouth.*

6. (a) (i) Convert the ratio scale of the map into a statement scale. ***(2 marks)***

*Map ratio scale 1 : 50,000*

*1 cm represents 50,000 cm*

*Statement scale is 1cm represents 0.5km / 1cm represents ½ km*

1. What is the name of the adjoining map to the south of Migwani?

*151/3 Kitui*

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

*Approximately from 380 011E to 380 131E*

(iv) Calculate the bearing of the trigonometric station at grid reference 9264 from Usiani School.  ***(2 marks)***

*2180*

(b) (i) Using a vertical scale of 1cm to represent 100metres, draw a cross section along the line J-K. ***(4 marks)***

(ii) On it mark and label the following:  ***(4 marks)***

* Footpath
* Road
* Water pipeline
* Steep slope

(c) Describe the relief of the area covered by the map. ***(5 marks)***

* *There are many hills in the area covered by the map.*
* *There are ridges to the Eastern Part of the Easting OO.*
* *There are river valleys which are occupied by rivers i.e. River Ngoo.*
* *There are steep slopes at Mutito forest.*
* *The area to the East of Easting 08 is flat as evidenced by spaced contours.*
* *The lowest atitude is 660m while the highest altitude is 1600m above sea level.*
* *The land rises from East to West.*
* *There are many interlocking spur along the river valleys.*
* *The landscape is dissected by many river valleys.*
* *There are many narrow river valleys.*
* *There are gentle slopes.*

(d) Citing evidence from the map, give ***two*** economic activities carried out in the area covered by the map. ***(4 marks)***

* *Transport business – Evidenced by presence of roads e.g. all weather road bound surface. (C 94)*
* *Communication – Evidenced by Post Office.*
* *Trading – Evidenced by presence of shops / markets e.g. GR. 9274.*

7. (a) (i) Identify **two** features formed by vertical earth movements.

***(2 marks)***

* *Basins*
* *Plateaus*
* *Fault scarps/escarpments*
* *Tilt blocks*
* *Rift valleys*
* *Submerged coasts*
* *Emerged coasts*

(ii) Explain how the following factors cause earth movements:

* *Gravitative pressure.* ***(2 marks)***
* *When large amounts of magma escape to the surface of the earth, large cavities or voids are left behind.*
* *The force of gravity exerts pressure on the crustal rocks from the voids causing them to move inwards hence causing vertical movements.*
* *Isostatic adjustment.* ***(4 marks)***
* *If ice sheets melt over the highlands or soil erosion occurs and deposition of water or soil in the sea or depression.*
* *A vertical isostatic uplift will occur on the highland because it is light while isostatic sinking will occur on the depression because it is heavier.*
* *The adjustment which is meant to maintain isostacy is called isostatic adjustment.*

(b) Describe the plate tectonics theory. ***(5 marks)***

* *It is the study of the movement of plates and the resultant landforms.*
* *The theory suggests that the earth’s lithosphere is made of semi-rigid blocks called plates.*
* *These plates are fractured and constantly moving relative to each other along their plate margins forming various physical features.*
* *Their movements are caused by convectional currents within the mantle.*

(c) (i) What is faulting? ***(2 marks)***

*The process through which the brittle crustal rocks fracture or break due to tectonic forces.*

1. Study the diagram below and answer the questions that follow:

F

Upthrow

G

Hade

Downthrow

Fault

Name the parts marked;

***F*** *- Heave*

***G*** *- Throw*

1. Apart from the above type of fault, name two other types of faults.

* *Reversed fault*
* *Shear/tear fault*
* *Thrust fault*
* *Anticlinal fault*

(d) Explain **three** ways in which faulting influences drainage.

* *If rift faulting occurs in an enclosed area, a basin may be formed when rivers flow into the basin a lake may be formed.*
* *Some rivers may end up flowing along fault 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 fault lines.*
* *When faulting occurs across a river valley, vertical displacement of land may occur causing the river to form a waterfall where it descends an escarpment.*
* *Faulting may lead to the formation of escarpments with springs forming at the base due to exposure of the water table.*
* *Faulting across a river or escarpment may cause a river to descend forming a waterfall.*

8. (a) What is secondary vegetation? ***(2 marks)***

*It is the plant cover existing naturally in a place/area but has been interfered by human activities and being in the processes of recovering.*

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

* Soil fertility ***(2 marks)***
* *Deep soils -Supports large/huge trees because it gives a firm anchorage.*
* *Well drained soils lead to growth of a variety of plants because of plenty of nutrients.*
* *Thin soils support shallow rooted plants /grasses/shrubs*
* Sunlight ***(2 marks)***

*Regions/areas/places experiencing long hours of sunshine/sunlight have support for variety of plant species.*

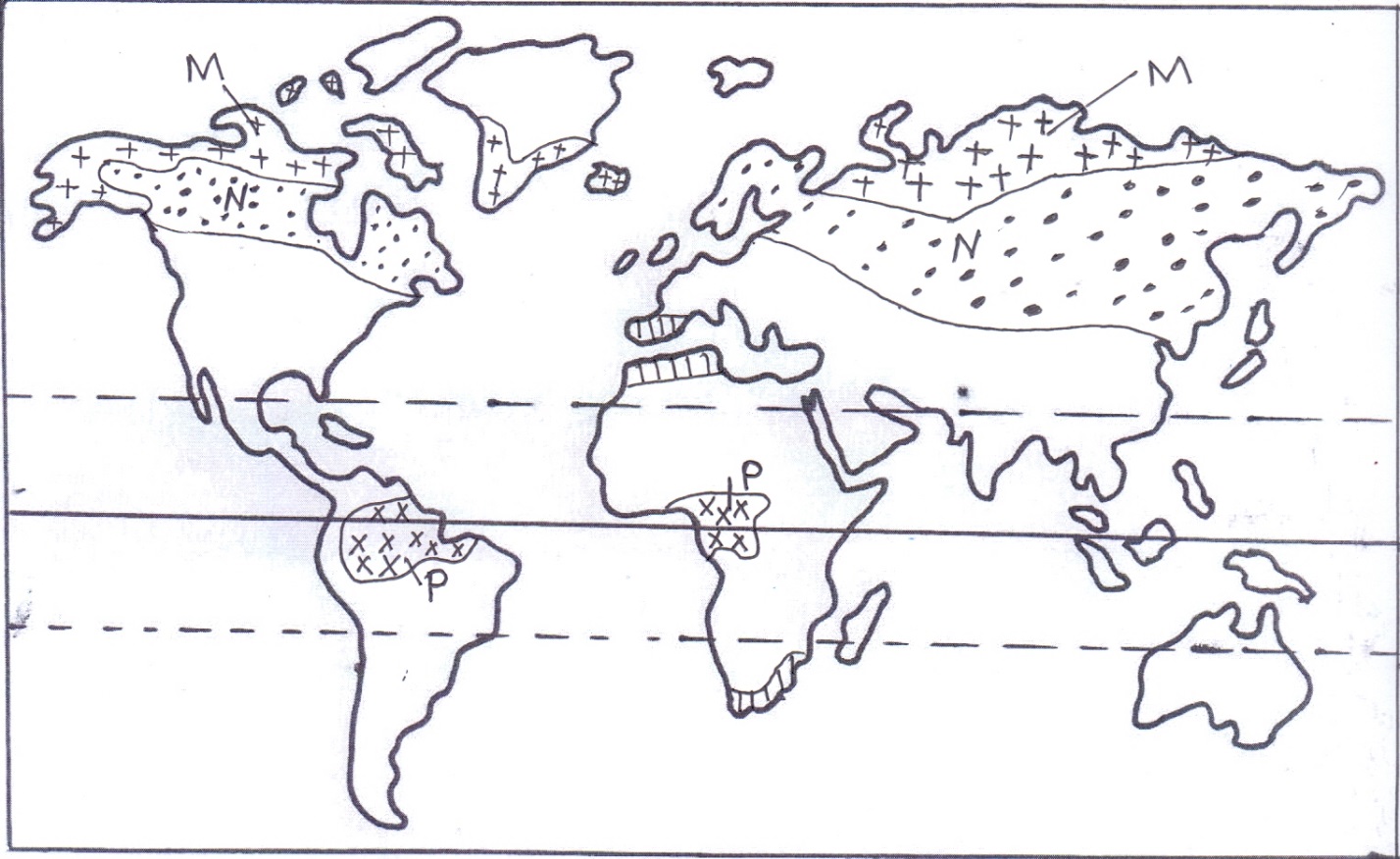
* Aspect ***(2 marks)***

*The slopes facing the sun are warmer and therefore support wide variety of plant species.*

(c) State ***six*** uses of savanna grassland vegetation in Kenya. ***(6 marks)***

* + *The grass acts as soil cover reducing occurrence of soil erosion.*
  + *Grassland areas are habitats of variety of wildlife for tourist attraction.*
* *Grasses heavily provide humus enriching the soil fertility for arable farming.*
* *Some trees in the grasslands are habitats for bees providing honey.*
* *Grasslands provide grazing grounds for livestock hence cattle rearing.*
* *Some trees in the grasslands may provide wood for domestic and industrial use.*
* *Some of the trees may have wild fruits and berries consumed as food.*

(d) The world map below shows world major vegetation zones use it to answer the questions below.



(i) Name the vegetation zones marked **N**, **P**, and **M**. ***(3 marks)***

***N*** *- Coniferous vegetation / Taiga / Boreal*

***P*** *- Equatorial rain forests / Tropical rain forests / Selva*

***M*** *- Tundra desert vegetation*

(ii) State the characteristics of Mediterranean vegetation. ***(8 marks)***

* *Some plants may have long tap roots*
* *Some plants are evergreen*
* *Some trees are deciduous*
* *Some trees may be thick barks*
* *Some plants may have spiny leaves*
* *Some plants have waxy leaves*
* *Some plants species have large fleshly bulbous roots*
* *Some plants may have thick stems*
* *Many of the plants have sweet smelling scent.*
* *Grasses dry off during summers and germinate during winter.*
* *Some plants have fleshy leaves*
* *Woody scrubs are common in very dry areas.*

9. (a) What is the difference between weathering and mass wasting? ***(2 marks)***

*Weathering is the breakdown and decomposition of solid rocks at or near the earth’s surface by physical or chemical processes without movement while mass wasting is the displacement / movement of weathered materials downslope under the influence of gravity.*

(b) Give **three** factors that influence the rate of weathering. ***(3 marks)***

* *Climate of the area*
* *Nature of the rock*
* *Topography/angle of the slope*
* *Time taken*
* *Human activities*

(c) (i) A part from block disintegration and granular disintegration name

***three*** other processes of physical weathering ***(3 marks)***

* *Alternate weather and drying*
* *Pressure release / unloading / sheeting*
* *Exfoliation /onion skin weathering / spalling*
* *Frost action/congelifraction*
* *Crystal growth*

(ii) Describe the following processes of weathering. ***(3 marks)***

* ***Granular disintegration***
* *This is a process where the rocks break up into small particles / grains*
* *It is common in areas where rocks are made up of different types of minerals particles.*
* *These minerals grains expand and contract at different rates when subjected to high temperatures and low temperatures respectively.*
* *Internal stress is created which then result into rocks crumbling and disintegrating into small grains.*
  + - * ***Hydrolysis***
* *This is reaction that takes place between hydrogen ions of water and and the ions of water and the ions of the feldspar mineral found in granite rocks.*
* *Water combines with rock minerals.*
* *A reaction between the hydrogen ions of water and the ions of minerals takes place.*
* *The minerals in the rocks are broken down to form completely new insoluble precipitation that is clay in a process called hydrolysis.*

(d) You are planning to carry out a field study of types of mass wasting.

(i) Identify ***three*** methods you would use to collect data. ***(3 marks)***

* *Observing the resultant features of mass wasting.*
* *Taking photographs*
* *Interviewing resource persons.*
* *Counting*
* *Filming*

(ii) Give ***three*** types of rapid mass wasting that you are likely to

observe during the study. ***(3 marks)***

* *Earth flows*
* *Mud flows*
* *Land slides*
* *Rain wash / down wash.*

(iii) State ***two*** follow-up activities you are likely to do. ***(2 marks)***  Holding group discussion

* *Group leader presentation*
* *Reading more on the topic*
* *Asking and answering questions*
* *Labeling samples*
* *Displaying photographs*

(e) Explain the effects of mass wasting on the following.

* + - * Tourism*.* ***(2 marks)***  *-Features created through mass wasting are tourism attraction.*
* Soil fertility. ***(2 marks)***

*-Mass wasting facilitates soil erosion leading to soil degeneration.*

*-May lead to formation of fertile soils where such soils are deposited.*

10. (a) What is glaciation? ***(2 marks)***

*It is the process by which moving ice erodes, transports and deposits materials on the earth’s surface.*

(b) Describe the following processes by glacial erosion.

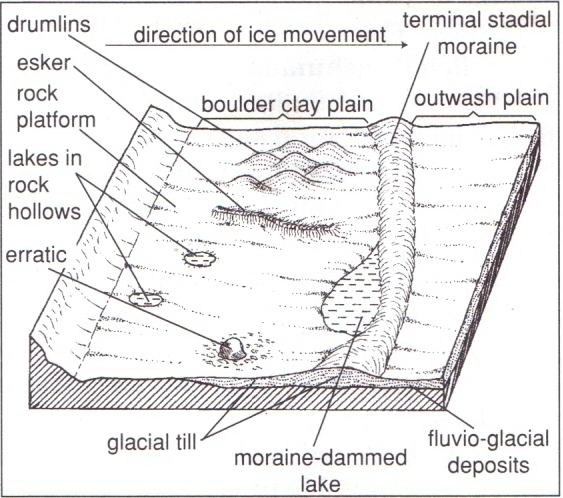
***Plucking***  ***(3 marks)***

* *Pressure from the overlying mass of ice cause freeze and thaw action.*
* *Melting water fills the cracks / joints in the bedrocks.*
* *When temperature falls, water in cracks freezes, it increases in volume, exerting pressure on the cracks thus enlarging them.*
* *The enlarged cracks lead to disintegration of the rocks.*
* *The disintegrated rocks eventually gets embedded within the ice.*
* *As the ice moves, it pulls/gorges out the embedded rock from the parent rock.*
* *This is called plucking.*

***Abrasion*** ***(3 marks)***

* *As the ice moves, it collects rocks and boulders on the path of glacier.*
* *The stories and boulders are then frozen in the moving ice.*
* *They are dragged over the underlying rocks polishing/scrubbing/scratching the surface.*
* *They wear away the rocks on the surface, smoothing it.*
* *This is called abrasion.*

(c) (i) Identify the features marked **L**, **M**, and **N**.



**Esker**

**N**

**M**

**L**

**Y**

(i) Identify the features marked **L, M**, and **N**. ***(3 marks)***

***L*** *– Terminal moraine.*

***M*** *- Rock Basin Lakes/ Kettle Lakes.*

***N*** *- Erratic.*

(ii) State ***three*** characteristics of drumlins. ***(3 marks)*** - *Made up of unratified materials.*

* *Low rounded hills/egg-shaped/ oval shaped.*
* *Occur in groups/ hills/swarms*
* *Steep on the upstream and downstream is long and gentle sloping.*
* *Upstream is smoothened by abrasion.*
* *They are elongated mounds of moraines.*
* *Vary in size between 50 m- 1 km.*

(iii) Describe how esker are formed. ***(4 marks)***

* *A mass of ice stops moving in a lowland area.*
* *The ice starts melting at the base.*
* *Streams are formed beneath the ice and form permanent sub—glacial tunnels.*
* *Water flows through the tunnels under hydrostatic pressure.*
* *The water thus flows rapidly hence the amount of load carried is quite large.*
* *When the ice melts, the tunnel collapse and materials are deposited there.*
* *This results in formation of a long winding steep-sided ridge of deposits called an esker.*

(d) Explain ***three*** significance of erosional features in a glaciated upland.

***(6 marks)***

* + *Hanging valleys form waterfalls which are ideal sites for generation of HEP.*
  + *Glacial lakes provide natural route-ways and can also be used for fishing.*
  + *Glacial features like pyramidal peaks, Arêtes and Cirques form beautiful sceneries which act as tourist attraction sites thus earning the country foreign exchange.*
  + *Fiords formed in glaciated upland coasts form suitable sites for harbor and fish breeding grounds.*
  + *Glaciated highlands are source of rivers that provide water for irrigation, domestic and industrial use.*
  + *Glaciated highlands covered by snow are good sites for winter sports.*
  + *Glacial troughs provide good sites for grazing of animals.*