FORM THEE GEOGRAPHY MARKING SCHEME

END OF TERM 2- 2026

1. The diagram below represents structure of the earth. Use it to answer questions that follow.

a) Diagram on the boundaries marked E and F.

i) E – Gutenberg discontinuity (1 mk)

F – Mohorovicic discontinuity (1 mk)

ii) Identify minerals that make up the layer marked H (2 mks)
Iron and Nickel

b) Give two effects of the rotation of the earth on its axis (2 mark)

- Causes day and night
- A difference of 1 hour between meridian 15 degrees apart.
- Causes deflection of winds and ocean currents
- Variation of speed of air masses
- Causes of rising and falling of ocean tides.

2. a) Magmatic water – Plutonic water that gets trapped in the rocks underground

b) Examples of surface features

- Grikes/grykes
- Clints
- Dolines
- Uvala
- Polje
- Swallow hole

3. a) Define vegetation. (2 marks)

- It is the total mass of plant life that occupies a given area.

b) Explain how the following factors influence the distribution of vegetation

i) Relief (2 marks)

- high altitude areas have low temperature which encourages scanty/no vegetation / low altitude areas have moderate temperature which encourage dense vegetation.
- Gently sloping areas are well drained hence encouraging dense vegetation growth/steep slopes experience excessive drainage that discourages plant growth/ hence scanty vegetation.

ii) Soils

- Fertile soils have a variety of nutrients which encourage the growth of dense vegetation / infertile soils have insufficient nutrients leading to 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 (forests) / thin soils support vegetation with shallow roots thereby supporting grass vegetation.

(2 mks)

4. State Four indicator of occurrence of soil creep in an area (4 marks)
   - Telephone/fence poles that are inclined down a slope/bent tree trunks
   - Accumulated soil at the foot of a slope/behind obstacles such as walls/ on roads/ railways.
   - Existence of ribbed /stepped pattern across the slope
   - Presence of dipped rock strata in the direction of the slope
   - Presence of overhanging banks above roads/rivers.
5. a) Name two types of submerged highland coasts.
   - Longitudinal/Dalmatian
   - Ria
   - Fiord/fjord

   b) Identify two resultant features of the emerged highlands coast
   - Raised geo/blow hole
   - Raised cliffs
   - Raised wave-cut platforms
   - Raised beaches
   - Raised caves
   - Raised notches
   - Raised arch/Raised stack/stump

6. a) (i) Topographical map (1 mark)

   (ii) Convert ratio scale to statement scale

   1:50,000 = 1/50000

   1Km = 100,000 cm

   ? = 50,000

   (Cross multiply)

   1x5/100 = 0.5 km

   Therefore; 1Cm on the map represents 0.5 KM (1 mk)

   1Cm on the map represents 500M (1mk)

b) (i) Three natural vegetation on the map (3 marks)

- Scrubs
- Woodlands
- Forest
- Thicket

(Any 3 points x1)

(ii) Three economic activities on the area covered by the map (6 marks)

- Sisal growing evidenced by Teita Sisal estate.
- Lumbering – evidenced by the dry weather road cutting through range forest
- Transport activities – evidenced by the following; All weather road, Bound surface, dry weather road, Mwatate-Voi railway line.
- Trading – shops grid 2324, 2626, 3126 e.t.c
- Cattle rearing – cattle dip, grid 3126
- Settlement - settlement units lack dots
- Crop farming- Agricultural office and ministry of Agri. Seed farm, grid 4325

(Any 3 elaborate points X1)

c) Describe the drainage of the area covered by the map (6 marks) (7 marks)

- There are rivers in the area covered by the map e.g Voi Goshi
- The main river in the area is Voi Goshi
- River Voi Goshi has pronounced meanders towards the Eastern direction
- Most rivers in the area are permanent as evidenced by the continuous blue lines.
- The general direction of most rivers e.g Voi Goshi is South Eastwards.
- River Voi Goshi has very many tributaries.
- Most tributaries join the main rivers (Voi Goshi) at an acute angles forming dendritic pattern.
- Seasonal swamps – Grind 3520, 3421

(Any other relevant point)

d) (i) Area covered by Ronge forest (2 marks)

Complete squares = 0

Incomplete squares = $9 \div 2 = 4.5$ Km^2

(ii) Longitudinal extent of the area covered by the map (2 marks)

38^o 17'E to 38^o 30'E

(ii) Length of railway line from Mwatate to Voi (2 marks)

$14.1 \pm 1Km$

e) Meridian of origin (1 mark)

39^o 00 East of Greenwich

7. a)
   i) Name the two major types of earth movements that occur within the earth's crust (2 marks)
      - Lateral / horizontal (1 mk)
      - Vertical / epirogenic movement (1 mk)
   ii) Give four effects of the movement of tectonic plates (4 mrks)
      - Causes folding / related features of folding
      - Occurrence of volcanicity / related features of vulcanicity
      - Causes faulting / related features of faulting
      - Causes structural rearrangement of rocks
      - Causes continental drift (4 x 1 = 4 mks)

b)Describe the origin of the continents according to the theory of continental drift (5 marks)

i. The earth was originally one huge landmass/ pangea / supercontinent.
ii. Pangea was surrounded by a large super water body / sea called panthalasa.
iii. Pangea split into two sub continents to form two other landmasses called Laurasia and Gondwanaland.
iv. The two landmasses were separated by a sea called Tethys
v. Further split occurred on two landmasses
vi. Laurasia broke to form the continents in the southern hemisphere.
vii. The continents gradually drifted to their present position

c)The diagram below shows a composite volcano.

On the question paper

i) Name the features marked J,K and M . (3 marks)

K – Crater

M – Lava layer

J – Dyke / side vent

ii) Describe how parasitic cone formed?

- Pressure is reduced causing the magma from the interior of the earth fail to reach the top of the Volcano.
- The upper part of the main vent of the volcano is blocked / pressure is reduced causing the magma from the interior of the earth to fail to reach the volcano.
- Pressure builds up as the magma escapes through the side vent
- .
- The successive outpouring of magma through the side vent build alternative layers of ash and lava to form conelets by the side of the composite volcano.
- The conelets are the parasitic cone (any 5x1 = 5mks)

d)Explain three negative effects of earthquakes (5 mks)

- Violent motions resulting from earthquakes damage structures from their foundations leading to loss of life and property
- When earthquakes occur faults may develop which damages infrastructure.
- During an earthquake on the sea floor vertical displacement occur leading to development of tsunami leading to floods
- Earthquakes may lead to landslides which disrupts human activities
- Strong vibrations from earthquake may cause damage to nuclear plants which pollute the environment and affect human health.
- Earthquakes may cause panic / emotional shock . (3x2 – 6 mrks)

8. The map below shows some climatic regions of Kenya . use it to answer question (a)

a)

i) Name the climatic regions marked X and Y (2 marks)

X – Desert climate

Y – modified Tropical climate

ii) State three characteristics of the climatic region marked Z (3 marks)

- Has a small diurnal temperature range
- Has a small annual temperature range
- Thick clouds cover
- Receives convectional type of rainfall
- Receives moderate to high rainfall 750mm-1500mm
- High relative humidity

- He has a double rainfall maxima regime.

b) Explain how each of the following factors influence climate;

i) Altitude (4 marks)

- Temperature decreases with increasing height above sea level because the air at lower altitude and ratified at the high altitude.
- Atmospheric pressure is higher at low altitude because the weight of the atmospheric air at low altitude is more than at high altitude.
- The temperature is higher at low altitude . This is because the air is heated from below and not directly from the sun.

ii) Ocean currents (4 marks)

- Onshore winds blowing over cold ocean currents are cooled and condensed resulting to rain falling over the ocean and on reaching the adjacent coastland result to increased rainfall and increased humidity.
- Onshore winds blowing over cold ocean current are warmed absorbing more water vapor and on reaching the adjacent coastland result to increased rainfall and increased humidity.
- Onshore winds blowing over cold ocean currents are cooled and on reaching the adjacent coastland cause of cooling effects.
- Onshore winds blowing over a warm ocean current are warmed and upon reaching the coastland they cause warming effects.

c) The table below represents rainfall and temperature figures for a town in Kenya. Use it to answer the questions that follow.

Months	J	F	M	A	M	J	J	A	S	O	N	D
Temp in ^{O}C	27	28	28	28	27	25	25	24	25	26	27	26
Rainfall in mm	25	38	99	140	277	439	277	69	142	201	71	21

i) Calculate the annual range of rainfall for the town (1 mark)

439-21 = 418 mm

ii) Calculate the total annual rainfall for the town. (1 mark)

1799mm

iii) State Two characteristics of the climate experienced in the town. (2 marks)

- The town experiences high temp. throughout the year (24-28Oc)
- The annual range of temperature is small / 4oC
- Rainfall pattern has double maxima.
- The wettest month is June/driest months are December and January.

- Rainfall is high/1799 mm pa

d) You are required to carry out a field study on the weather within your school compound

i) Give three reasons why you needed permission from the administration (3 marks)

- It is an official requirement
- So that the administration can offer any required assistance
- So that the administration can take care of disrupted school programme

ii) Describe how you would use the following instruments during the field study. (3 marks)

Raingauge:

- Remove the water collecting jar from the metal holder.
- Pour the water into the measuring cylinder
- Take the readings on the measuring cylinder
- Record the reading and interpret reading

iii) State two ways in which the information collected during the field study would be useful to the local community. (2 marks)

- It can be used for making weather charts
- It can be used to plan for agriculture activities
- It can be used to determine the types of uniform for the students
- It can be kept as a school record for future reference
- The data can be used to plan for school activities

9. a)

i) Give two factors that influence the development of drainage patterns (2 marks)

- Direction of the slope of the land
- Difference in rock resistance/hardness
- The arrangement of rock layers/structure

ii) State FIVE characteristics of a river in it's youthful stage (5 mrks)

- The river has a steep river gradient
- The river channel is narrow
- The river has deep steep-side/ v-shaped valley/gorges
- The river flows at high speed/high stream velocity.
- The vertical erosion/down cutting is dominant.
- The river channel is generally winding
- The type of flow is torrential

- The river has a small volume of water
- The river as small load. (5x1 = 5 marks)

b) Describe three processes of river erosion (6 marks)

i) Attrition

- As solid rock materials are transported downstream, they constantly collide against each other. Materials gradually wear down/reduce in size.

ii) Corrosion /Abrasion

- As solid rock materials are transported downstream, they are hurled against the banks and dragged along the river bed. Continued erosion widens and deepens the river channel. Eddy currents rotate pieces of rocks around the hollows forming potholes on the river bed.

iii) Hydraulic process – force of moving water – erode rocks

iv) Solution – Soluble rocks dissolve into the water and are eroded

c) The diagram below shows river meanders. Use it to answer questions (1)

(Diagram on the question paper)

(i) Name the processes that take place at each points marked P and Q (2 marks)
Point P- Deposition
Point Q – erosion

(ii) Name the feature formed at the point marked R (1mark)
- A cliff/bluff

(iii) Describe how an ox-bow lake is formed (5 marks)
- Ox-bow lakes occur on flood plains where there are sharp meanders.
- Banks come closer/are separated by a narrow strip of land/meander neck.
- Rivers get flooded and flood water arts across the meander neck
- Floods subside and the river follows the new channel.
- Former meander is abandoned as an ox-bow lake. (5x1=5 marks)

d) Explain two negative effects of river to human environment (4 marks)
i) When rivers flood, they destroy a lot of property/crops and may lead to loss of human life.
ii) Wide/deep Rivers are a barrier to transport especially where bridges have not been constructed.

iii) River water can be medium of spreading water borne diseases since flood waters may spread chemicals from farms/human waste which contaminates source of water.

iv) Some rivers are habitats to dangerous animals which may attack human beings/destroy crops. (4x2 = 4 marks)

10. a)

- Sandy deserts
- Stony deserts
- Rocky deserts

b)

i. Wind Abrasion – This is a process where-by carried materials/scrubs polishes deserts rock surface hence further erosion.

ii. Deflation – This is the blowing away of loose materials like dust and fine particles by rolling them on the ground

iii. Attrition - This is the wearing a way of wind horne materials as it scrub against the rock surface.
The collision of the rocks against each other leads to further erosion of the rocks.

c) Strong winds come in to contact with exposed mass of rocks with alternating layers of resistant and less resistant rocks.

The less resistant layers are eroded by abrasion more than the resistant layers. There is more wind erosion at the base of the rock since the wind carries more materials for erosion at low levels. Eventually an irregular mass of rocks with protruding layers of alternating hollows is formed hence rock pedestal.

d)

- Strength and speed of the wind
- Presence of obstacles
- Presence of vegetation cover
- Weather changes
- Nature of the leads

e)

- Desert soil are dry thereby discourage settlement and practice of agriculture
- Loess deposits transported by wind to far place are fertile and encourage agriculture
- Solar radiation which is intensive in deserts is used to generate solar energy.
- Deflation hollows may contain water which is used for domestic and irrigation purposes
- Extensive bare surface of the deserts are used for testing weapons and car speed.

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