MARKING SCHEME

312/1

GEOGRAPHY PAPER ONE

END TERM 2 EXAMINATION
JULY/AUGUST 2025
FORM THREE

SECTION A

1. (a) Define the term vulcanicity. (2marks)

- Vulcanicity is the process by which solid, liquid and gaseous materials are forced into or onto the earth's surface.

(b) State **four** causes of vulcanicity. (4marks)

- High temperatures that changes materials into molten state.
- High pressure that pushes molten materials from the earths interior.
- Faulting that creates lines of weakness such as cracks through which molten material pass.
- Underground water that is heated to produce steam that is pushed to the surface.

2. (a) Give the **two** movements of the earth. (2marks)

- Rotation
- Revolution.

(b) Explain **two** forces responsible for the geoid shape of the earth. (4marks)

- Centripetal force that causes slight flattening of the poles.
- Centrifugal force that causes bulging of the equator.

3. (a) What is a Stevenson screen? (2marks)

- It is a white wooden box mounted on four metallic stands used for housing of thermometers.

(b) State **three** characteristics of Stevenson screen. (3marks)

- Made of wood because it is a bad conductor of heat.
- Has louvres to ensure free circulation of air.
- Painted white to reflect light from the sun.

4. (a) Give **three** processes of chemical weathering. (3marks)

- Oxidation
- Carbonation
- Hydrolysis

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

- Human activities like ploughing down a slope.
- External forces such as shaking by earthquakes.
- Alternate wetting and drying of the soil.

5. Apart from erosion, give **three** other conditions that may lead to the formation of a waterfall. (3 marks)

- ***Where a river descends a sharp escarpment***
- ***Where a river descends a plateau into a lowland***
- ***Where a river descends over a lava barrier or a land slide barrier***
- ***Where a river descends descends from a hanging valley into a glacial trough.***
- ***At knick points during river rejuvenation***
- ***Where a river descends a high cliff into the sea.***

SECTION B

(ANSWER QUESTION 6 AND ANY OTHER TWO QUESTIONS FROM THIS SECTION.)

6. Study the map of **TAMBACH 1:50,000 (Sheet 116/2)** provided to answer questions that follow.

(a) (i) Give the longitudinal extent of the area covered by map. (2 marks)

From $35^{0}30^{0}$E to $35^{0}45^{0}$E.

(ii) What is the vertical interval of the map extract? (1 mark)

20m.

(b) (i) Name four drainage features found in the area covered by map. (4marks)

- **Rivers.**
- **Waterfall.**
- **Lake.**
- **Swamps**.

(ii) Citing evidence from the map, give three social services carried out in the area covered by map. (6marks)

- **Education service evidenced by schools.**
- **Medical service evidenced by dispensaries and District hospital.**
- **Religious service evidenced by churches.**
- **Security service evidenced by police station.**
- **Administration service evidenced by DC Office and Chief Office.**

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

- **Presence of escarpment for example Elgeyo Escarpment.**
- **Presence of valley for example Kerio Valley.**
- **Presence of river valleys on western region of the map.**
- **Presence of spurs for example on the eastern and western region of the map.**
- **Presence of ridges on Eastern part of the map.**

- **Presence of steep slopes on Eastern region evidenced by contours close to one another.**

(d) Draw a rectangle 12cm by 8cm to represent the area bound by Easting 86 and 98 and Northing 69 and 77. (7 marks)

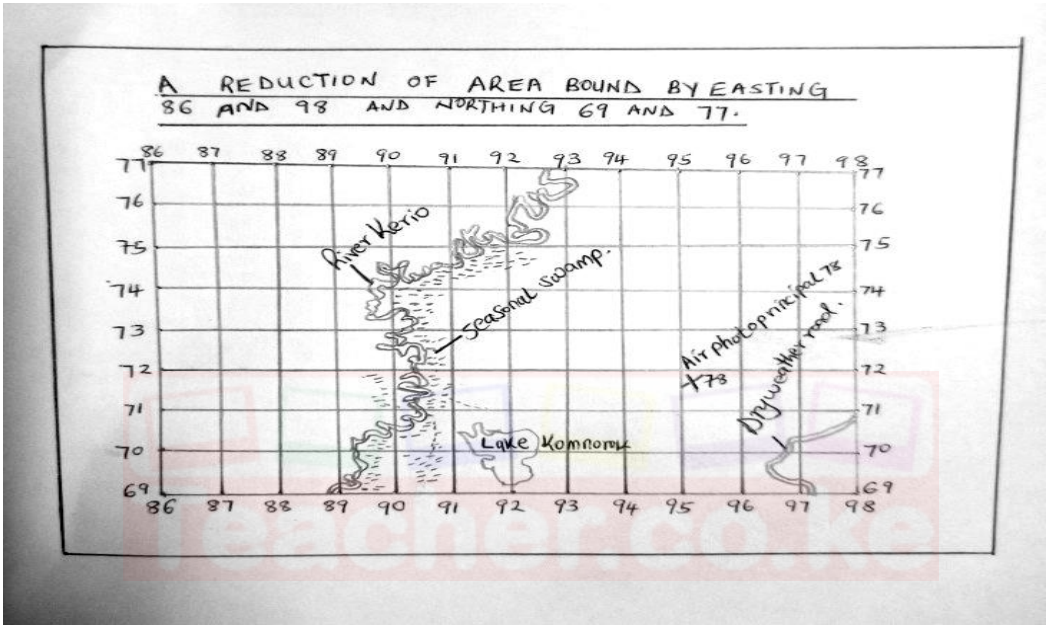
(I) River Kerio.

(ii) Dry weather road.

(iii) Air photo principal 78.

(iv) Seasonal swamp.

(v) Lake Komnorok.



7 a) i) What is a rock? (2 marks)

- A rock is any naturally occurring agglomeration of mineral particles forming part of the earth's crust.

ii) Give **two** examples of plutonic igneous rocks (2 marks)

- Granite
- Syenite
- Gabbro

- Diorite
- Peridotite

b) Describe the processes of formation of each of the following types of sedimentary rocks:

i) **Mechanically formed** (4 marks)

- These are formed from pre-existing rocks such as igneous or metamorphic.
- The existing rocks are broken down through the processes of weathering and erosion.
- Once disintegrated, the particles are transported by various agents of erosion like wind, water and moving ice.
- These particles are deposited in lowlands and basins in layers(strata)
- The finer particles fill in between the larger particles, which helps to cement them together.
- With time the layers of rocks are compressed, compacted by pressure of overlying materials and become mechanically formed sedimentary rocks with time.

ii) **Organically formed** (4 marks)

- These rocks are formed from fossils or the remains of plants and animals.
- Most of these remains accumulate in oceans and lakes while others were buried on land.
- They accumulate in layers.
- With time, the rocks are compressed, compacted and cemented by the weight of the overlying materials to form rocks.
- Other organic remains may be buried on land.
- The weight of the overlying crustal rocks above them compress them into rock

c) State the characteristics of rocks (5 marks)

- Some rocks have joints
- Rocks have varied degree of hardness
- Rocks have cleavage
- Rocks have varied texture
- Rocks have different colours
- Some rocks have lustre
- Rocks have varied specific density

d) You are planning to carry out a field study on rocks within the local environment.

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

- Oral interviews
- Direct observation
- Administering questionnaires
- Sampling
- Taking measurements
- Experimentation
- Extracting from secondary sources/ content analysis

ii) State **three** problems you are likely to encounter (3 marks)

- Fatigue due to difficult terrain

- Some areas may be too remote with very few vehicles going to such areas.
- Unfavourable weather conditions such as heavy rainfall or extremely high temperatures may interfere with the field study.
- Difficulty in breaking some rocks.
- Attack by wild animals.

iii) Give **two** economic uses of rocks. (2 marks)

- In some areas rocks form spectacular sceneries which act as tourist attraction sites such as granitic tor in Kakamega/Kisumu
- Certain types of rocks act as underground water reservoirs to provide water for irrigation
- Rocks weather to form soil for agriculture
- Some rocks provide building/ construction materials e.g. limestone
- Various salts are obtained from rocks occurring in some places hence provide salt licks for livestock
- Some rocks can be used for fuel e.g. coal and petroleum
- Some rocks provide raw materials for the industries
- Some rocks are used for making carvings

8. a) i)Apart from an over thrust fold, name **three** other types of folds (3 marks)

- Simple folds/simple symmetrical folds
- Asymmetrical folds
- An overfold
- Isoclinal fold
- Recumbent folds
- Anticlinorium-synclinorium complexes

ii) Describe the formation of an over thrust fold. (6 marks)

- Layers of rocks of the earth crust are subjected to compressional forces.
- There's intense folding in the formation of an over fold and with increased pressure the over fold results in the formation of the recumbent fold.
- When pressure is very great, a fracture occurs along the axis in the recumbent fold producing a thrust-plane.
- The upper part of the recumbent fold slides forward over the lower part along the plane resulting to the formation of an over thrust fold.

b) i) Name the young fold mountains found in the following continents

- Africa -Atlas (1 mark)
- Europe - Alps (1 mark)
- Asia - Himalayas (1 mark)
- North America - Rockies (1 mark)

ii) Apart from Fold Mountains, name four other features resulting from folding. (4 marks)

- Escarpments
- Intermontane basins/ plateaus
- Synclinal valleys
- Rolling plains
- Depressions

c) Explain **four** effects of folding on physical environment (8 marks)

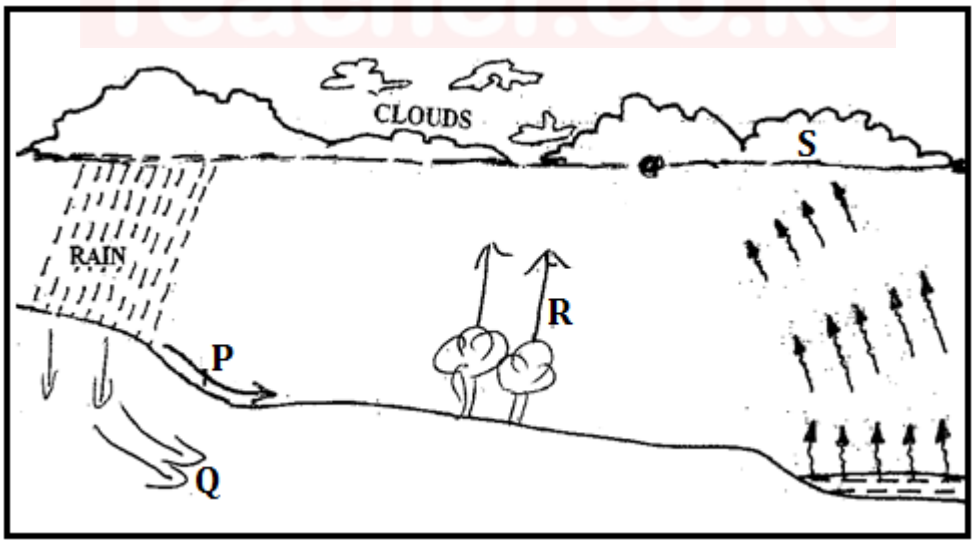
- Folding creates steep slope that form rugged mountain topography.
- Fold mountains receive high rainfall on windward side that support dense forests.
- Fold mountains receive high rainfall on windward side that is a source for rivers.
- Folding may weaken the crustal rocks creating fault lines through which magma may escape, thus triggering off volcanic activity.
- Depression formed through folding turn into wetlands which support a rich biodiversity. ✓ Folding can result in rock metamorphism.
- Fold mountains cause high rainfall on windward slopes and little on the leeward slopes.

10 (a) What is hydrological cycle? (2 marks)

Hydrological cycle refers to the endless interchange of water between the land, the atmosphere and the oceans

(b) The diagram below shows the processes of hydrological cycle. Name the processes marked **P, Q, R** and **S**. (4 marks)

- ***P – Surface runoff***
- ***Q – Percolation***
- ***R – Evapotranspiration***
- ***S - Condensation***



(c) (i) Describe **three** types of river erosion. (6 marks)

- ***Headward erosion occurs due to processes such as soil creep and rain wash that help a river to cut backwards at its source. This causes a river to increase in its length.***
- ***Vertical erosion takes place on the river bed. Hydraulic action, corrasion and solution processes cause the river bed to deepen.***

- ***Lateral erosion takes place when hydraulic action, corrasion and solution processes act on the river banks causing widening of the river channel/valley.***

(ii) Name **five** features formed due to river erosion. (5 marks)

- ***Stream cut valleys***
- ***Waterfalls***
- ***Gorges***
- ***Rapids***
- ***Potholes***
- ***Interlocking spurs***

(d) Explain **four** factors influencing the rate of river erosion. (8 marks)

- ***Volume of the water in the river. Large rivers with big water volumes have a greater kinetic energy of flow thus the greater the erosion through hydraulic action and corrasion.***
- ***Gradient of the slope and velocity of flow. The steeper the gradient, the faster the velocity of flow thus the greater the kinetic energy to erode.***
- ***Nature of the bed rock. Soft bed rocks are easily eroded while very hard bed rocks are worn out very slowly.***
- ***Nature and amount of load. Rivers carrying many large and angular rock pieces do greater erosion through abrasion whereas rivers carrying small and smooth/rounded rock particles do very minimal abrasion.***