

NYAMIRA NORTH GEOGRAPHY CONTEST

312/1 MARKING SCHEME

PAPER 1

MARCH 2025

1 (a) An earthquake is the sudden movement/ vibrations of the earth's crust. (2mks)

b)

- ❖ Movement/collision of tectonic plates
- ❖ Movement of magma within the crustal rocks
- ❖ Gravitational pressure
- ❖ Isostatic adjustments of the crustal rocks
- ❖ Energy release from the mantle (3mks)

2 (a) Weathering is the break down of rocks in site while material down the slope under the influence of gravity. (2mks)

(b)

- ❖ The weight and nature of material.
- ❖ The amount of water within the material.
- ❖ The angle of slope/gradient
- ❖ Vegetation
- ❖ Tectonic movement. (3mks)

3(a) Plutonic are formed from magma while volcanic rocks are formed from magma.

- ❖ Plutonic rocks form deep in the earth crust while volcanic rocks form on the surface of the earth's crust.
- ❖ Plutonic rock form large crystals/they are coarse grained/coarse textured while volcanic rocks form small crystals or no crystals/ fine grained. (2mks)

(b) Examples:

- (i) Plutonic
- Granite
 - Diorite
 - Peridotite
 - Gabro (1mk)

- (ii) Hypabyssal-
- Diorite
 - Porphyrite
 - Diabase (1mk)

- (iii) Volcanic
- Obsidian
 - Pumice
 - Rhyolite
 - Basalt
 - Andesite (1mk)

- 4 (a) i) The feature marked X -Horns
 ii) The air current marked Y -Eddy currents
 ii) The slope marked Z -steep slope (3mks)
- b)
- ❖ Loess
 - ❖ Draas

- 5 (a)
- ❖ Africa
 - ❖ Arabia
 - ❖ India
 - ❖ South America
 - ❖ Australia
 - ❖ Antarctica
 - ❖ Seif dunes/Longitudinal dunes (2mks)

- b)
- ❖ Compressional/Destructive/Convergent plate boundaries
 - ❖ Tensional/Constructive/Divergent plate boundaries
 - ❖ Transform/Conservative Margins plate boundaries (3mks)

SECTION B (Answer Question 6 and Any other Two)

6. Study the Map of Tambach 1:50 000 (Sheet 90/3) provided and answer the questions that follow.

a) i)

- ❖ Baringo
 - ❖ Elgeyo Marakwet
 - ❖ Uasin Gishu
- (2mks)

(ii). 01°24' (2mks)

(iii)

- ❖ Contours
- ❖ Place names (2mks)

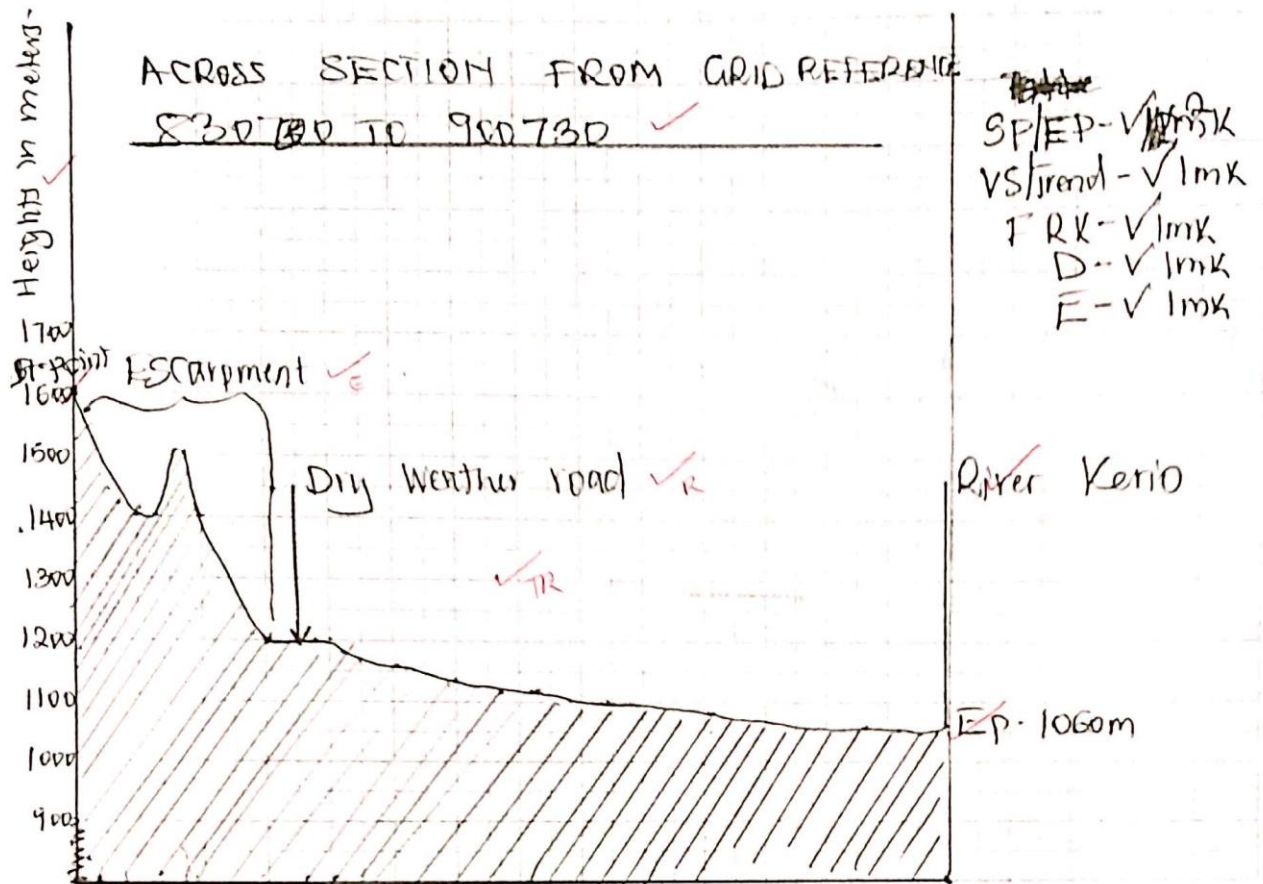
(iv) 1745 M a.s.l

(b) (i) Cross- section

➤ There are large tracts of land with few settlements on the North /south ensuring /South ensuring extensive area for grazing ✓

(d) Using a vertical scale of 1 cm rep 100m ,draw a cross section from grid reference 830730 to 900730. On it mark and label (5 marks)

- Dry weather road
- Escarpment
- River Kerio



- (c) -Dense settlement around Tambach town that would be expensive to relocate/resettle
- Presence of many rivers that would necessitate the construction of bridges which is expensive
- Steeps slopes /several valleys in the escarpment that would necessitate road bending or Meandering

-Dense forest cover which would be expensive to penetrate. (3mks)

- d(i) There are many rivers in the area covered by the map
 - River Kerio is the main river
 - River Kerio flows northwards
 - River Kerio has many bends /meanders along its course
 - Most rivers form dendritic drainage pattern with its tributaries
 - There is Lake Kamorok
 - There are seasonal swamps.
 - There is a dam in the area covered by the map.
 - There is a waterfall in GR 7958
 - There are short disappearing rivers
 - There is a sesonal river in the Sw part of the map.

(5mks)

- (iv) Health - Evidenced by hospital
- Trading - Evidenced by shops/petrol pump
- Education- Evidenced by several school
- Security- Evidenced by police post
- Communication- Evidenced by post office
- Transportation - Evidenced by all weather roads loose surface
- Residential- Evidenced by houses
- Adminstration- Evidenced by DCC/DC 's office

7 (a) What is folding – crustal distortion.

- (i) P - Cape ranges
- Q - Atlas
- R - Alps
- S - Andes
- T - Appalachian

(5mks)

- (ii) - Compressional forces act on crustal rocks.
 - Intense forces compresses the rocks further until assymetrical antidine is completely pushed over/overturned to form an over fold.
 - More compressional forces push the lamb of the over fold to a nearly horizontal position to form a recumbent fold.

(3mks)



References KLB pg 9 – Diagram a,c,e
NB: each diagram 1 mark total

(3mks)

(c) Intermontane basins
Intermontane plateau
Cuestas
Escarpments

(3mks)

(d)

-The slopes of Fold Mountains which face the sun are warmer than those which face away from the sun.

-The windward side/slopes of Fold Mountains generally receive higher rainfall than the leeward slopes because of orographic effects.

- Mountains slopes cause the developments of anabatic winds which have a cooling effect on the slopes. The same effect occurs where katabatic winds descend the mountain slopes.

-The orographic effects of mountains lead to lower temperatures and at higher attitudes snow and ice.

-Fold Mountains have an effect on reduction of pressure with increasing altitude.

-In the mountains valleys as well as adjacent lowlands temperature inversions occur such that the lower slopes and valley remain cooler than higher slopes.

(8 mks)

8(a) (i) Isothermal layer is a layer within the atmosphere within which the temperatures remains constant despite the increasing altitude. (2mks)

(ii) Names of isothermal layers within the atmosphere

- Tropopause,

-statopause

- mesopause.

(3mks)

(b) (i) $30^{\circ}\text{c} - 18^{\circ}\text{c} = 12^{\circ}\text{c}$

(2mks)

(ii) Annual total amount of rainfall

$$50+100+250+200+150+100+25+50+150+100=1300\text{mm}$$

(2mks)

(c) Climatic conditions of the Kenya highlands.

- ❖ The temperatures range between 17°c and 24°c .
- ❖ The annual range of temperature is small between 3°c and 5°c .
- ❖ Days are generally warm while nights are cool and sometimes chilly.
- ❖ The coolest months are June and August while the rest of the year is generally warm.
- ❖ The region receives rainfall between 1000mm and 1500mm on average.
- ❖ It rains throughout the year.
- ❖ The rainfall regime is double maxima in the highlands east of the Rift valley and single maxima in the highlands west of the Rift. Valley.
- ❖ The long rains are received between March and May and short rains between Sept and Dec in the east. In the highland west of the Rift valley the peak between May and August.
- ❖ The rainfall is mainly orographic type. It is caused by the south East trade winds.
- ❖ Rainfall is higher on the windward slopes than on the leeward slopes of highland.

(d) (i) P - Desert climate of Northern areas

R - Tropical climate of Narok and Southern Taita/Kwale

Q - Modified Equatorial climate of the Highlands

(ii) Five development activities in region P.

- ❖ Nomadic pastoralism who move constantly in search of pasture and water for their animal should be settled.
- ❖ Crop farming reclamation and afro-farming thus irrigation.
- ❖ Oil mining or exploration for self sufficiency/saving of foreign exchange
- ❖ Chemical weapon lasting by government and military drill for national defence and security.
- ❖ Sand harvesting for road building/construction.
- ❖ Commercial fishing in Lake Turkana.

(5mks)

ASPECT

- ❖ Slopes exposed to sunlight have longer hours of sunshine hence the temperatures than of the slopes facing away.
- ❖ Windward side has higher rainfall than the leeward side.
- ❖ South facing slopes of mountains in the Northern Hemisphere are warmer/have higher temperatures compared to North facing slopes (vice-versa).

(1 x 2 = 2 marks)

OCEAN CURRENTS

- ❖ Ocean current sweeping along a coast bring cool the winds crossing over them bring cooling effects on adjacent land while the warm current bring the warming effect of adjacent land.
- ❖ Cold current chill the rain bearing wind which eventually drop the moisture over sea bring little rainfall on the coastal area.
- ❖ The warm ocean currents warmth water increasing humidity in the atmosphere bringing a lot of a rainfall on adjacent land.

(1x2 = (2mks)

9 (a) (i) A lake is a body of water contained within a basin or hollow.

(2mks)

(ii)

- ❖ L. Turkana
- ❖ L. Nakuru
- ❖ L. Bogoria
- ❖ L. Naivasha
- ❖ L. Baringo
- ❖ L. Magadi

(2mks)

(b) (i) Formation of crater lake.

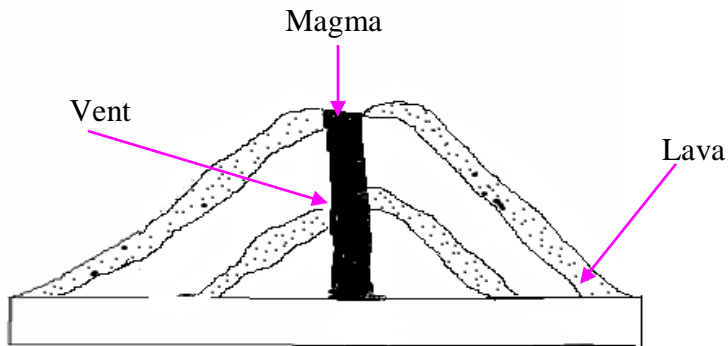
- ❖ When volcanic eruption takes place, it is followed by the out pouring of lava through a central vent.
- ❖ When lava outpouring stops the lava cools. The magma in the vent also cools and contracts slowly.

- ❖ In doing so the magma withdraws into the vent.
- ❖ In the process a funnel-shaped depression forms on top of the volcano this is called crater.
- ❖ A crater can also form when gases and water vapour which are in contact with magma escapes or as a result of huge explosion.
- ❖ Rainwater fills the depression to form the Crater Lake.

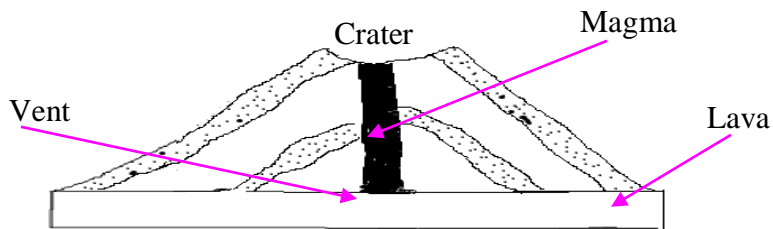
(ii) Lake Shala (Ethiopia)

Lake Nyios, oku, Wum (cameroon)

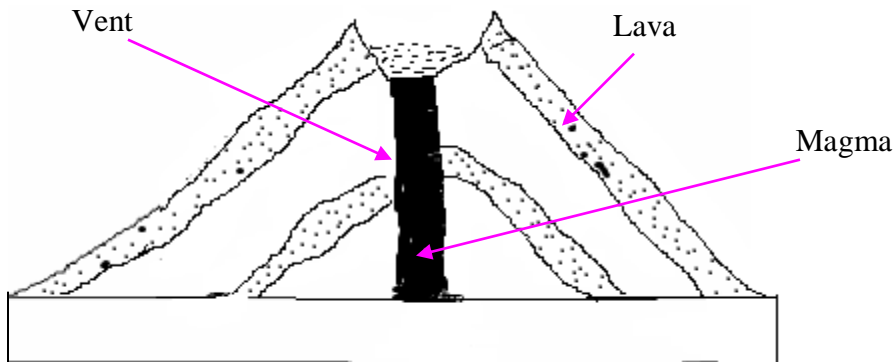
(i) ***Volcanic cone***



(ii) ***Crater is formed***



(iii) ***Crater lake is formed***



(ii) (c) Negative effects of human activities on lakes.

- ❖ Deforestation and poor agricultural practices cause soil erosion. The eroded soils are deposited in lakes leading to siltation. This reduces the depth of the lake resulting in reduced volume of water.
- ❖ Destruction of vegetation in water catchments areas interferes with the hydrological cycle which eventually can lead to the drying up of lakes.
- ❖ Agrochemicals which are washed from the land may accumulate in the Lake. This promotes weed blooms and eventually colonises parts of the lake (weeds)
- ❖ Disposal of industrial effluents, sewage and other wastes pollutes the lakes. This has negative effects on aquatic life. Also this contaminates water making it unsuitable for human and animal use.
- ❖ Damming of Feeder Rivers for irrigation and hydroelectric power production leads to lowering of the volume of water reaching the lake. This causes the lake to shrink. It also blocks the flow of nutrients into the lake which results in the reduction of food for aquatic life.

(d) (i)

- ❖ There is pollution in the lake
- ❖ The lake has a lot of water weeds
- ❖ The lake is not used as a mode of transport
- ❖ The lake has modified the climate of the surrounding area

(Any relevant point)

(ii) Methods of data collection.

(2mks)

- ❖ Observation
- ❖ Administering questionnaires
- ❖ Measurements
- ❖ Content analysis
- ❖ Photographing/filming
- ❖ Counting.

(3mks)

10. a) i) **A karst scenery** is a rugged landscape made of limestone, chalk or dolomite rocks that have been acted upon by carbonation to form many features. (2mks)

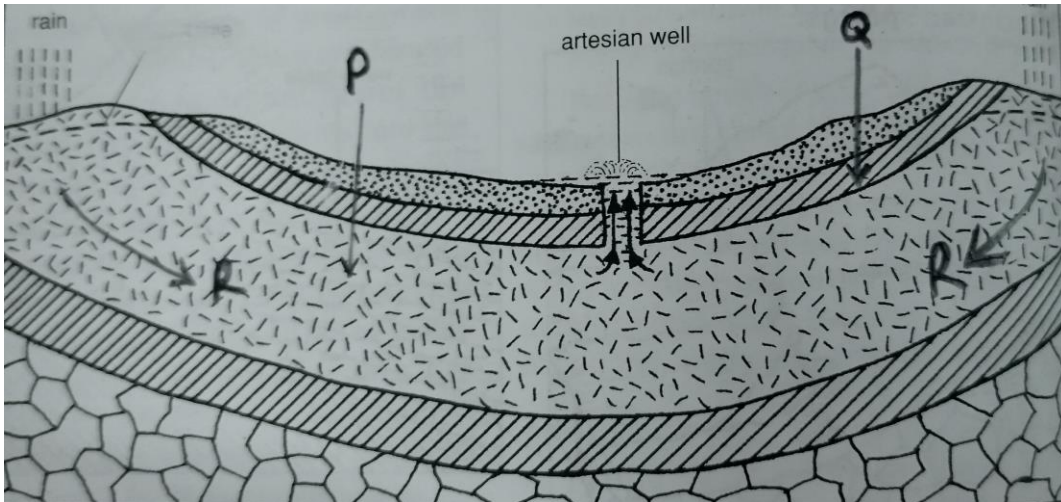
(ii) –The rock on the surface and underground is limestone or chalk

- Absence of surface run-off due to swallow holes
- Scanty vegetation due to thin poor soils
- The surface is rugged due to several residual hills
- Underground network of caves and caverns with features
- Many surface depressions due to solution and carbonation (4mks)

b) –Rainwater which infiltrates the ground to lower parts.

- Melt water from ice or snow which infiltrates through rocks
- Seeping of water from rivers, lakes, ponds and swamps into the ground
- Magmatic/plutonic water that is trapped in rocks during volcanism. (4mks)

(c) The diagram below shows an artesian basin. Use it to answer question (a).



(a) Identify ;

(i) the part marked P.

(1 mark)

✓ An aquifer / permeable rock

(ii) The layer marked Q

(1 mark)

✓ An impermeable rock layer

(iii) The process marked R

(1 mark)

✓ Percolation/ infiltration

(iv) Describe how artesian basin forms

(3 marks)

✓ This is a saucer shaped depression consisting of a layer of permeable rock lying between two layers of impermeable rocks,

✓ With part of the permeable rock exposed to the surface along the edges of the basin.

✓ As the rainwater percolates into the permeable rock layer, it eventually gets saturated aquifer.

✓ This is an artesian basin

d) (d) Explain four ways in which karst features influence human activities (8 marks)

- Features formed in limestone area attract tourists
- Limestone rock is used as raw material for cement industry
- Limestone is used in iron and steel industries as flux.
- When dolines collapse, they may form lakes(expose underground rivers hence source of water for domestic use
- Karst areas have thin and dry soils hence discourage settlement