

FORM 3 GEOGRAPHY

MARKING SCHEME

PPI (312/1)

SECTION A

Answer all the questions in this section

1.

a) **Name three components of the solar system.**

- Sun
- Planets
- Asteroids
- Comets

b) **State two weaknesses of Nebular cloud theory.**

- Chances of another star approaching the sun are minimal.
- High temperature materials drawn from the sun would disperse rather than condense.
- It does not explain where the sun and the passing star came from.

2.

a) **Name two minerals that make up the inner core.(2mks)**

- Iron
- Nickel

b) **Identify three forces responsible for the spherical shape of the earth.**

- Gravitational forces which push towards the centre of the earth creating a rounding effect on its shape.
- Centripetal forces which contract causing the flattening at the poles.
- Centrifugal forces which cause the bulge at the equator.

3.

a) **Give two physical conditions that may influence landside.(2mks)**

- Steep slopes which allow soils to move down easily.
- Pressure of loose soil/ absence of firm rocks which means that the soils are easily destabilized.
- Occurrence of earthquakes which interferes with the stability of soils.
- Heavy rains facilitate the flow of materials down slope

b) **State three evidences of the occurrence of soil creep in an area.(3mks)**

- Telephone poles that are leaning down a slope / bent trees trunks
- Accumulated soil at the foot of a steep slope behind obstacles such as walls / roads/ railways.
- Presence of stepped pattern across a slope.
- Presence of dipped rock strata in the direction of slope
- Presence of overhanging banks above / rivers
- Presence of slope retreat.

4.

a) The diagram below show a breaking wave in the sea

i) Name the parts labeled M,N and P.(3mks)

M- Trough

N- Crest

P- Swash

b) Briefly explain how the current marked Q occurs.(2mks)

- It occurs when a breaking wave at the coast forces a back flow return flow of water down the beach due to forces of gravity.
- It is known as backwash.

5.

a) Identify three processes which a river transports its load.(3mks)

- Suspension
- Saltation
- Traction
- Solution

b) Differentiate between river capture and river rejuvenation.(2mks)

- River capture is the diversion of part of rivers water into the system of another more powerful river while river rejuvenation is the renewal of river's erosive power/ activity due to changes in base (level / increased precipitation which increases erosive powers.

SECTION B

Answer question 6 and any other two from this section.

6. Map work

Study the map of Oyugi's (1:50000 Kenya) provided and answer the questions which follows.

a)

(i) State the contour interval used in the map.

- 50 ft

(ii) Give the height of the trigonometrical station at God ndori.(1mks)

- 4681 ft

(iii) Name three man made features found in the grid square 8421.(3mks)

- All weather bound surface roads
- Bridge
- Settlements

(iv) Name two counties in the area represented by the map.(2mks)

- Homabay
- Kisii

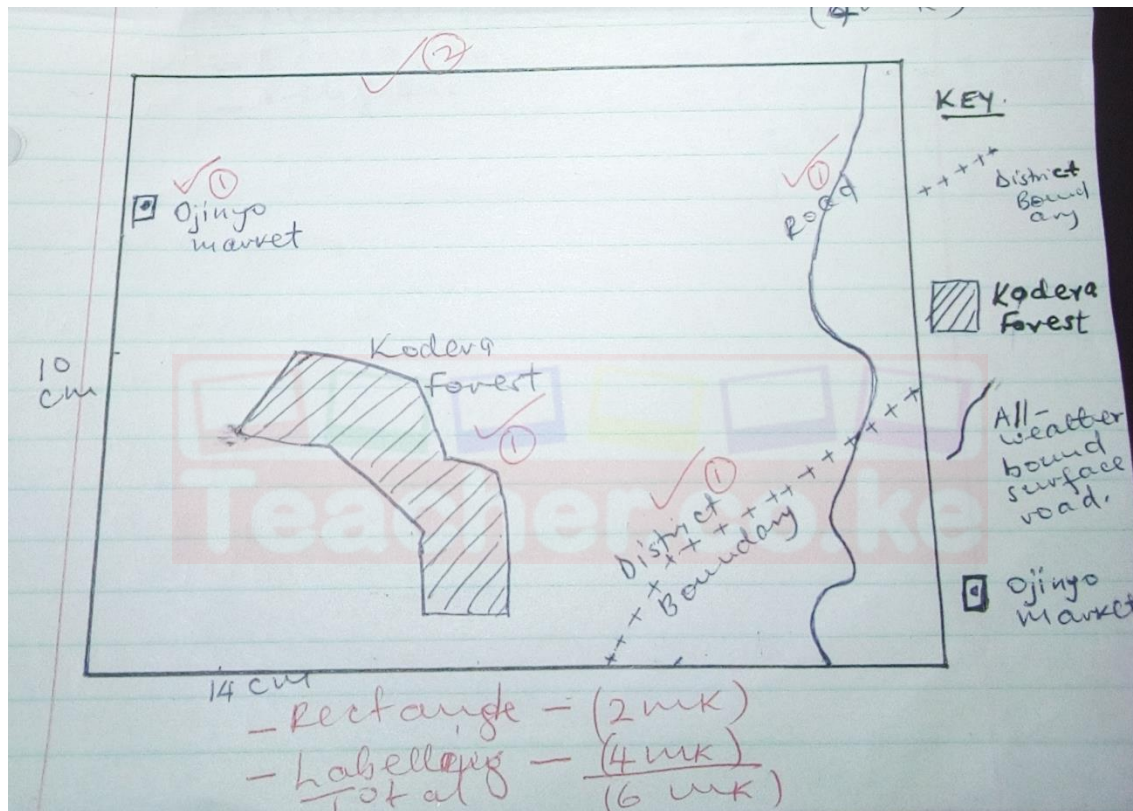
- (v) Measure the length of the all weather loose surface road from the junction at rodikopany to the bridge at grid reference 727226. Give your answer in Km.

➤ 10.6 km(± 0.1)

- (vi) Identify three types of natural vegetation found in Oyugi's.(3mks)

- Forests
- Woodlands
- Scrubs

- b) Draw a rectangular 14cm by 10cm to represent the area to the north of the Northings 35 and to the east of the Eastings 80.(2mks)



In the rectangle, mark and name the following features:- (4mks)

- (i) Koderia forest
- (ii) District boundary
- (iii) All weather bound surface road
- (iv) Onjinyo market.

- c) Describe the drainage of the area covered by the map.(4mks)

- There are many rivers in Oyugi's
- most rivers are permanent
- There are swamps. e.g. grid square 8523
- The rivers in the North have a general northern direction of flow while those in the south have a south west direction of flow.

- Some rivers form a trellised drainage pattern.

d) Citing evidence from the map name three social services offered at Asumbi.

- Medical services - presence of hospitals
- Education services - presence of a school
- Religious services - mission centre / church

7.

a)

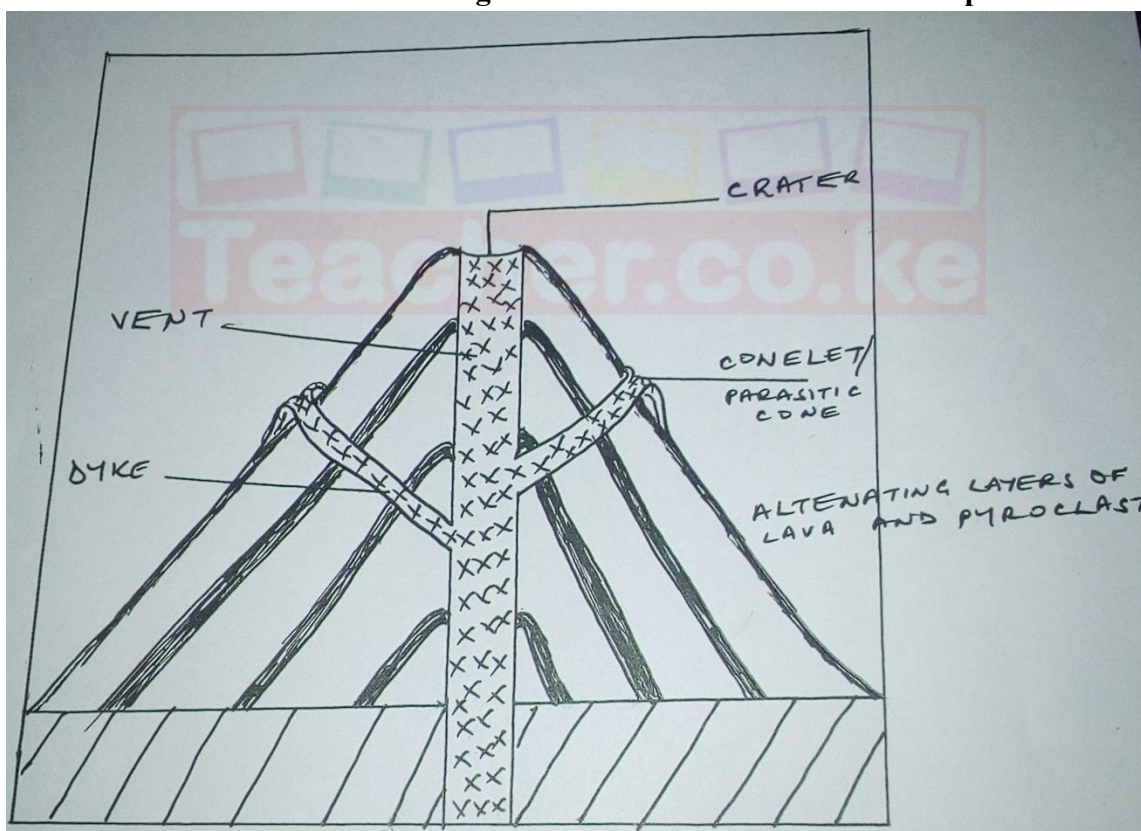
(i) Define volcanicity.(2mks)

- The process through which gaseous liquids / molten rocks/ solid materials are forced into the earth's crust or are ejected onto the surfaces.

(ii) Name three examples of active volcanoes in Kenya.(3mks)

- Longonot
- Teleki
- Likayu
- Suswa
- Homa hills

b) With the aid of a well labeled diagram describe the formation of composite volcano.(8mks)



- Vent eruption occurs explosively releasing pyroclasts which fall around the vent.
- Later, subsequent lava eruptions are released repeatedly in subsequent eruptions cover the pyroclasts as another layer.
- Pyroclasts and the lava are released repeatedly in subsequent eruptions building into a volcano core.

- The vent way gets sealed completely and subsequent eruption is unable to pass through the main vent instead a line of weakness is formed on the side through which the pyroclasts and the lava from later eruptions passes. This becomes secondary core / parasitic cores.
- The resultant feature formed is known as a composite volcano.

c) Explain four ways in which volcanic features positively influence human activities.(8mks)

- Volcanic highlands or mountains are sources of rivers which provide water for domestic , agricultural or industrial use
- Volcanic features e.g. mts, craters attract tourists helping the country earn foreign exchange.
- Volcanic mts experience high relief rainfall on the windward side thus encouraging settlement and agriculture.
- Volcanic features such as steam jets/ geysers and hot springs form suitable site for geothermal power production.
- Volcanic rocks weather to form volcanic soils rich for agriculture.
- Volcanic rocks are important building materials e.g. Basalt.
- Volcanic mts / highlands have forests which provide valuable timber used in the building and construction industry.

d) You are required to carry out a field study on a region that had a recent volcanic activities.

(i) State two methods you would use to record the information collected.(2mks)

- Photographing/ filming/ video taking
- Tape recording
- Taking notes
- Sketching / drawing
- Filling tables
- Filling in questionnaires

(ii) Give two reasons why they would require a route map.(2mks)

- To find direction
- To locate the features to estimate the distance to be covered.

8.

a)

(i) Differentiate between a well and a spring.(2mks)

- A spring is a point or place on the surface of the earth where water flows out naturally onto the land while a well is dug in the ground with the purpose of getting underground water.

(ii) Name the three layers of saturation. (3mks)

- Zone of non-saturation
- Zone of intermittent saturation
- Zone permanent saturation

b) State four conditions necessary for the formation of an artesian well.(4mks)

- The aquifer must be sandwiched between two impermeable rocks in order to retain water.
- The ends of an aquifer must outcrop in a region of high rainfall or beneath a lake.
- The aquifer and the two impermeable rock layers must form a syncline shape.
- The mouth of the artesian well must be lower than the source of water or intake area.

c) The diagram below shows features in a limestone area: use it to answer questions C (i) and C

(ii) below.

(i) Name the features marked A,B and C.(3mks)

- A-Cave / caverns
- B-Stalactites
- C-Stalaginites

(ii) Describe the formation of the feature marked C.(4mks)

- A solution of sodium hydrogen carbonate drips down slowly through the roof of the cave.
- As the solution continues to drip from the roof, it splashes on the floor of the cave.
- Water evaporates and the calcium carbonates precipitate.
- The precipitated carbonate gradually builds upwards from the floor to a vertical structure known as Stalaginites.

d)

(i) State three conditions for development of karst scenery.(3mks)

- An area must be dominated by limestone / chalk / diatomite
- Thick layers of calcium carbonate rocks
- Hard/ well jointed rocks
- Moderate to heavy rainfall
- A low water table
- Warm/ hot climate

(ii) Give three reasons why there are few settlement in karst landscapes(3mks)

- Areas have poor / thin soils
- Areas are rocky / have rugged surfaces
- There is inadequate surface water supply.
- Areas have poor/ scaly vegetation.

e) You intend to carry out a filed study in a karst landscape.(3mks)

i) Name three depressions you are likely to identify in the region.(3mks)

- Doline/ collapsed dolines
- Uvalla
- Swallow holes / sink holes

9.

a) Distinguish between soil catena and soil profile.(2mks)

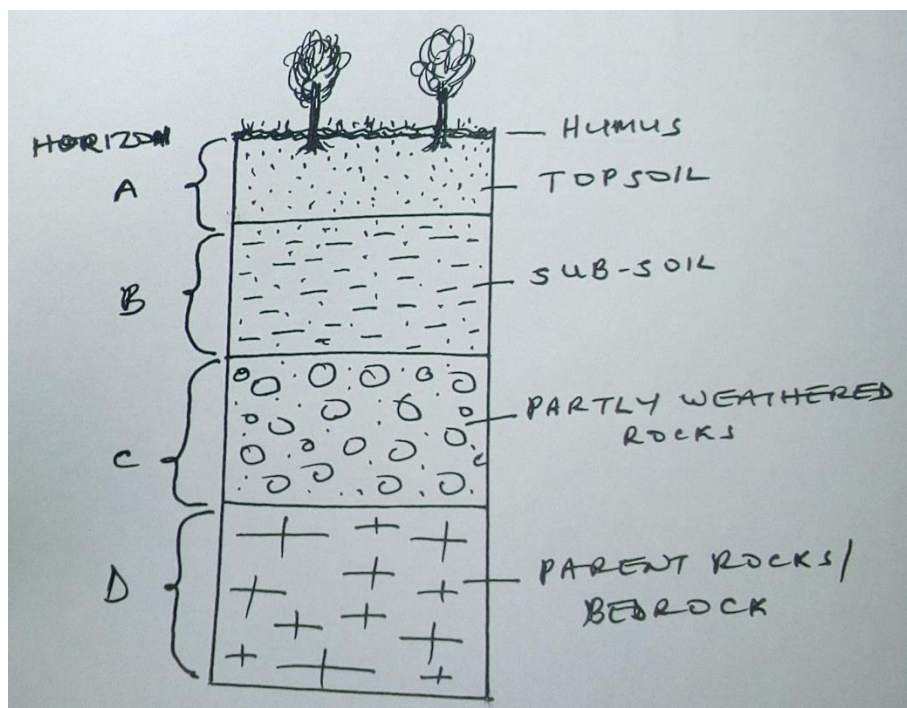
- Soil catena is the sequence or arrangement of different soils along a slope from top to bottom.
- Soil profile is the vertical arrangement of different layers of soils from the surface to the parent rock(bedrock)

b) State three factors that determine the colour of soils.(3mks)

- Types of parent rock
- Amount of organic matters
- Chemical composition /degree of concentration of iron.
- Amount of water in the soil/ the drainage of the soil.

c)

i) Draw a well labelled diagram to show a mature tropical soil profile .(5mks)



ii) **State three characteristics of the horizon marked 'B'.**

- It is the accumulation zone of leached minerals from horizon A.
- The soil texture is clay in nature
- The soils are generally dark/ reddish
- The soil sometimes from the hard pan/ murrum/ ateric duricrust.

d) **Explain how the following practices cause soil erosion.(3mks)**

(i) **Mono culture**

- Monoculture leads to exhaustion of certain minerals from the soil making it infertile, leading to its inability to support vegetation growth and eventually soil erosion.
- Monoculture leads to loosening of soil particles thereby encouraging soil erosion.

(ii) **Burning**

- Burning of vegetation destroys micro-organisms which are essential for formation of humus which bind soil particles together.
- Burning destroys vegetable matters that protect the soil against erosion
- Burning loosens the soil making it susceptible to erosion / leaching which drain away soluble mineral nutrients.

iii) **Continuous application of fertilizers.**

- It increases the acidity of the soil by changing the soil PH.
- Acidity destroys the micro- organisms in the soil like fungi and bacteria which would have helped in the formation of humus.
- Acidic soils are unsuitable for a variety of crops which could protect the soil erosion.

e) **A form 3 class intended to carry out a field study on soils around their school. Name three main types of soils they would identify.(3mks)**

- i) Alluvial / silt
- ii) Clay soil
- iii) Sandy soil

10.

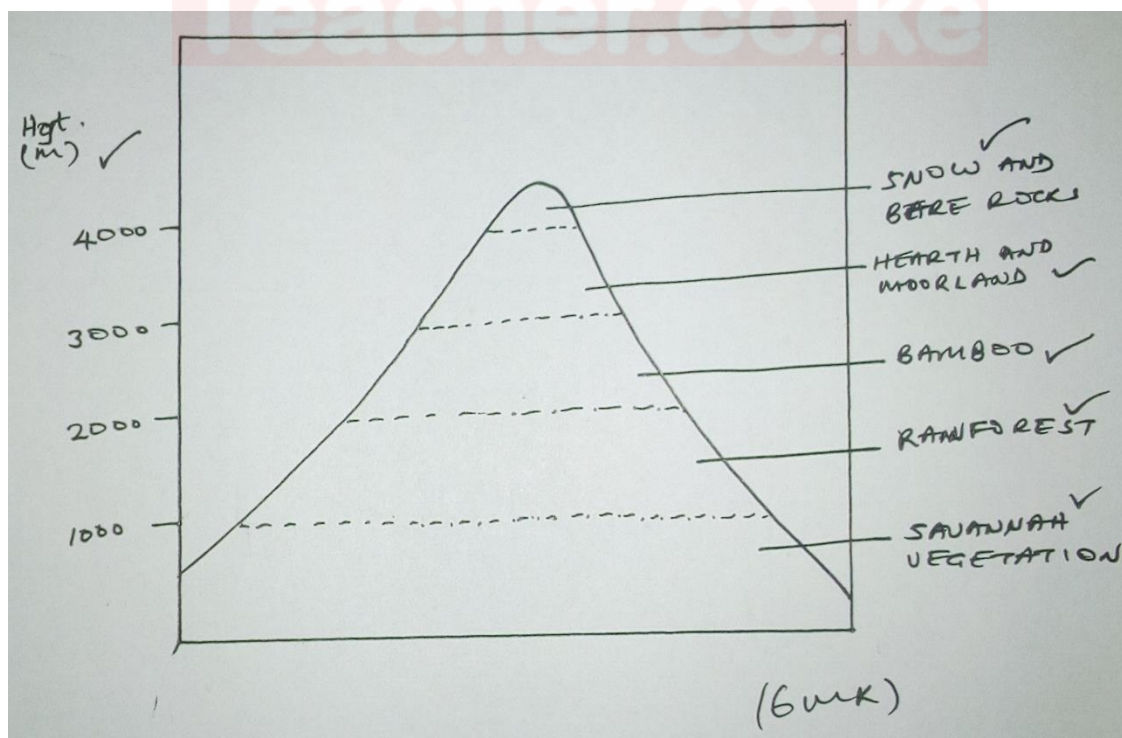
a) Give three examples of temperate grassland stating the countries where found.(6mks)

- Prairies – Canada
- Steppes – Russia
- Downs of Australia

b) Describe the characteristics of the Amazon rain forests.(8mks)

- The forests consist of mixed variety of tree species
- Trees shed their leaves at different times of the year i.e forests are evergreen
- The trees are tall with large trunks.
- The trees take long to mature
- Tree species are mainly hardwood
- The trees grow close to each other.
- Forests have little or no undergrowth
- Forests have numerous lianas / climbing plants
- Some of the trees have buttress roots.
- The forests have canopies.
- The forest crown forms three distinct layers.

c) Draw a well labelled diagram to show vegetation in a tropical mountain.



d) Your class intends to conduct a field study on vegetation in the area around your school.

i) Formulate two objectives for this study.(2mks)

- To find out the types of vegetation formed around our school.
- To determine the uses of vegetation found around our school.

NB: accept any other correctly stated objective.

ii) State three reasons why it would be necessary to conduct a reconnaissance.(3mks)

- To familiarize in order to design appropriate method of data collection
- To help in preparing a working schedule
- To help in formulating appropriate objectives and hypothesis.
- To help in identifying appropriate tools / equipments relevant for data collection.
- To determine the suitability of the area for the study.
- To seek permission from relevant authorities.

