**312/ 1**

**GEOGRAPHY**

**PAPER 1**

**MARKING SCHEME**

**SECTION A**

1 a) **Two characteristics of the Earth.**

- It is the 3rd planet from the sun in the solar system.

- It rotates in its own axis and revolves around the sun on its own part / orbit.

- It is about 149.66 million km from the sun.

- It is the only planet that supports human, animals and plant life.

- It has more information than other planets in the universe

- Its shape is spherical. ***2 x 1mrks***

1. **Three zones of the external structure of the Earth are:**
   * Atmosphere
   * Hydrosphere and
   * The earth’s surface / lithosphere ***3 x 1mrks***

2 a) M- Volcanic lava outpourings 1mrk

N- Sedimentary rocks eg limestones & sandstone ***1mrk***

1. **Characteristics of minerals.**
   * Minerals have different degrees of hardness
   * Minerals differ in texture.
   * They have specific colours.
   * They have lustre.
   * They have different degrees of tenacity.
   * Some minerals aggregate into distinct crystal shapes
   * Minerals differ in steak. ***3 x 1mrks***

3 a) **Factor that influence soil creep.**

- Alternate heating and cooling

- Removal of soil down slope

- Rainwater ***1mrks***

1. **Effects of mass wasting on rivers.**
   * When a landslide occurs it can block a river, causing it to change its direction of flow.

- The mass materials of a landslide can accumulate across a river valley. A lake may eventually form on the upstream side of the blockage. ***2 x 1mrks***

4 a) **Define soil Catena**

**Soil catena is the sequence of different soils down a slope on the surface of the**

**land.** ***1 x 2mrks.***

b) **Other properties of soil apart from texture.**

* + Structure.
  + Colour
  + Permeability.
  + Porosity
  + Mineral content. ***3 x 1mrks***

5 **An area in Kenya predominantly covered by derived vegetation**

a) North- Eastern . ***1mk***

1. **Characteristics of Mediterranean type of vegetation**.
   * Vegetation is adapted to the long, hot and dry summers.
   * Some plants are evergreen.
   * Grasses dry up during summer and germinate during winter.
   * Shrubs, thickets, bush and thorn bush, and marquis are common.
   * Woody scrub is common in very dry areas.
   * Some plants have small, spiny leaves while others have thick- skinned or leathery leaves.
   * Some plants have long roots.
   * Some plants have thick barks.
   * Some plants have fleshy leaves while others have shiny, waxy leaves.
   * Some trees are deciduous. ***4 x 1mrks***

6 a) (i) Grid square 0003. ***2mrks***

(ii) NW ***2mk***s

1. Scattered trees.

Scrub

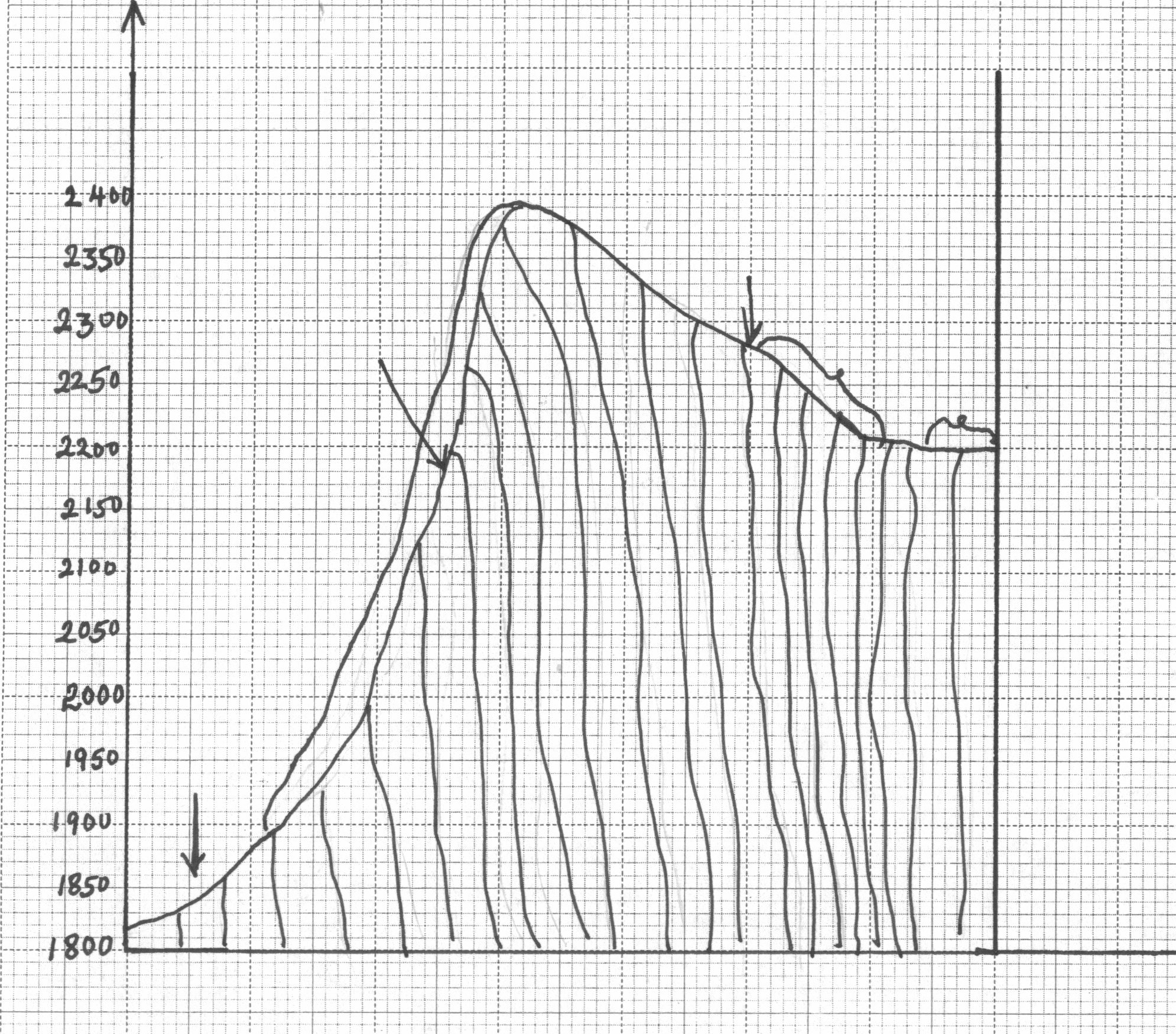
Woodland

Pyprus swamps/ marskh/ Bog

* + Thicket
  + Forest ***3 x 1mks***

1. Check on graph appended.

**Cross– section along line x y**



X Y

* + - 1. Starting point 1810m – 1mk
      2. End point 2000m – 1mk
      3. Trend -1mk
      4. River 1mk
      5. Ridge – 1mk
      6. District boundary – 1mk
      7. S.Swamp – 1mk

**Total 7mks**

c) (i) - Dendiritic drainage pattern. ***1mk***

(ii) Ridge / Escarpment. ***1mk***

d) (i) **Activity Evidence**

Transport - Road

Trading - Shops

Quarrying - Quarry

Lumbering - Saw mill

Farming - Farms / agricultural Training College

Communication - Telephone. ***Any 4 x 1 =4mrks***

(ii) 65 x 14=910 people ***1 x 2=2mrks***

1. **Features in the upper course of the river Tana .**
   * Deep, narrow, steep-sided valleys (V.shaped)
   * Steep gradient / slope river, slope pools
   * Interlocking spurs.
   * Potholes, plunge,
   * Gorges
   * Waterfalls / rapids / cataracts ***3 x 1mks***

7 a) **A sill** is a near horizontal sheet of igneous intrusive rock formed when magma

cools and solidifies between bedding planes of the rock strata while a **dyke** is a

vertical or near vertical sheet of igneous intrusive rock formed when magma

cools and solidifies across the bedding planes of the rock strata. ***2mks***

1. **Formation of a lava plateau.**

- It forms when magma reaches the surface of earth and becomes lava.  
- It comes out of the ground through a fissure, a single vent or a series of vents.

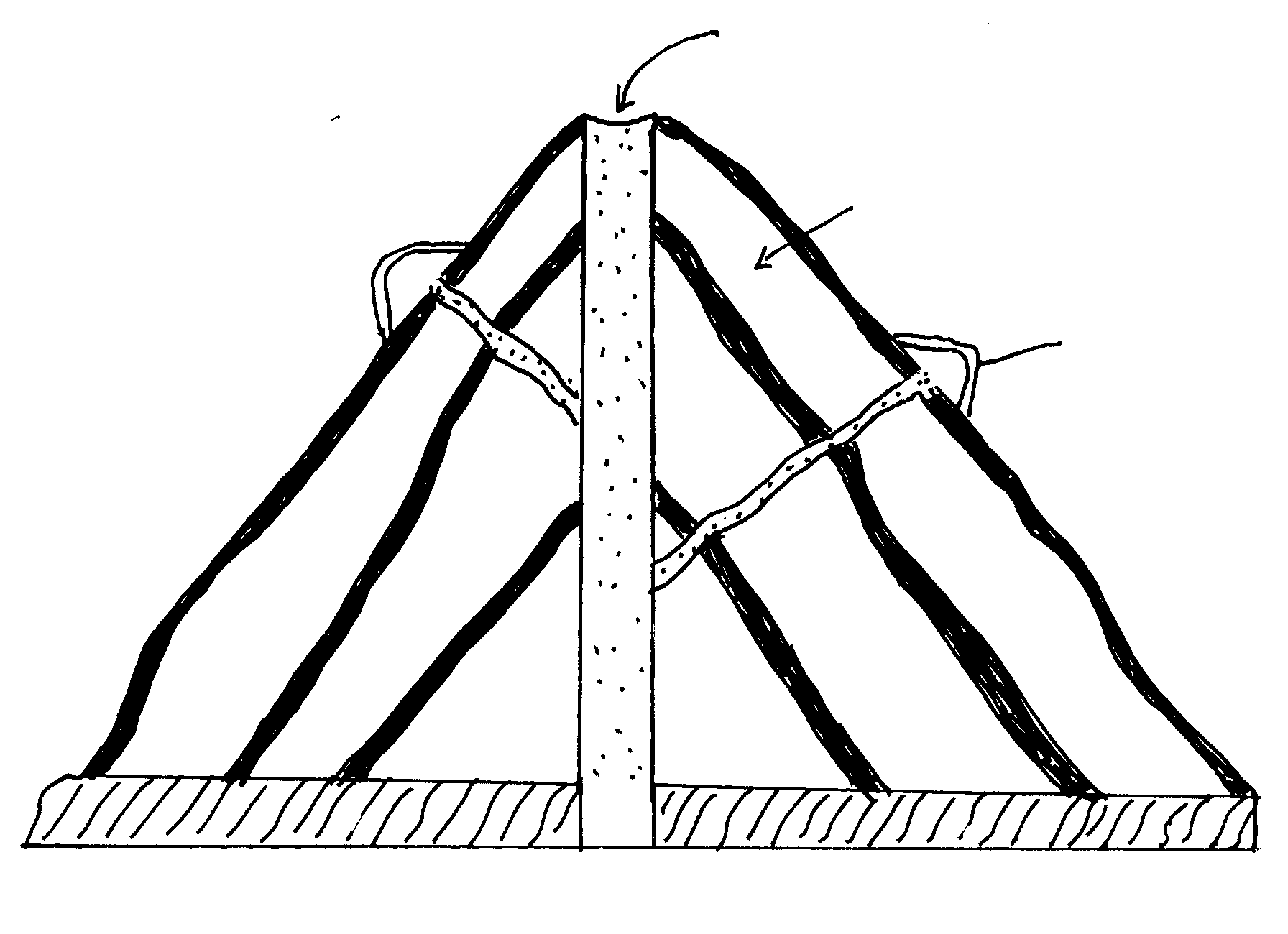
- The lava is ultra- basic, of low viscosity and is extremely fluid.

- The lava flows over long distances while spreading over large areas before

Cooling

* + This lava cools slowly to form an extensive plateau.
  + The plateau may form through a series of eruptions which result into thick layers of lava. ***4 x 1mks***

1. **The diagram below represents a composite Volcano.**



***1mk***

Crater ***1mk***

Conelet ***1mk***

Layers of ask ***1mk***

1. **Composite volcanoes in Kenya**
   * Mt Longonot
   * Mt Suswa
   * Mt Elgon. ***3 x 1mks***
2. **Effects of faulting on the physical environment.**
   * Faulting a cross a river valley can cause a river to change its course and start

flowing a long the fault or even disappear into the fault.

* + Subsidence of land caused by faulting can resulting in the formation of depressions which may later fill water to become lakes.
  + Faulting results in weak lines in the country rocks from which hot magmatic water may escape to the surface to form hot springs and geysers.
  + Fault scarps may expose the water table and become sources of springs.
  + The blocks mountains formed due to faulting block rain – beating winds, resulting in orographic rainfall. This may support large tracts of forest on the wet slopes. ***4 x 2mks.***

1. **Characteristics of Rift valley lakes:**
   * They are long / elongated
   * They are narrow / .
   * They are salty.
   * They are straight and deep ***4 x 1mks***

8 a) (i)Naturally occurring agglomeration of mineral particles that form part of the earth’s

crust.

* + A substance made up of a mineral or a combination of mineral particles which

are cemented together and which form the solid part of the earth’s crust. ***2mks***

1. **Types of igneous rocks**.

- Intrussive igneous rocks- formed by molten rock (magma) cools and solidifies below the earth surface e.g granite, diorite, Gabbro and peridolite.

Shallow intrusive igneous rocks are formed Hypabyssal.

Deep intrusive igneous rocks are called Plutonic.

- Extrussive igneous rocks are formed by molten rocks which has been ejected onto the surface (lava) when it cools and solidifies on the surface of the earth. Examples are Basalt, Obsidian, Pumice, Rhyolite, Tuff. ***3 x 2mks***

1. **Processes through which igneous change into metamorphic rocks.**

(i) Contact or thermal metamorphism- heat and gases

(ii) **Dynamic metamorphism**

Due to the action of great pressure causing dislocation, crushing and shearing of

Rocks

(iii) **Thermo-Dynamic**- Due to action of both heat and pressure on rocks***. 2 x 2mks***

c) i) - Chemically sedimentary rocks- rock salt, potash, Limonite Hematite , Trona.-

cherty, Travertine/ Tufa, Dolomite, Gypsum ***1mk***

ii) - Mechanically sedimentary rocks- Sandstone, Mudstone, Clay stone, Siltstone, Shale.  ***1mk.***

iii) - Organically sedimentary rocks- limestone, coal  ***1mk.***

d) i) **To study the types of rocks in different slopes.**

- To collect different rock types around the school.

- To record the names of sedimentary rocks within the school environment.

- To find out the relationship between rocks and types of soils within local

environment. ***4 x 1mks***

ii) **Advantages of using sampling as a method of collecting data:**

* + In the field there is no laboratory where samples can be analysed.
  + Students lacks adequate skills to analyse the samples, so they needed to take them to experts to assist them.
  + There is adequate time in the field to carry out the laboratory tests.
  + Students need to build a collection of samples for future reference.
  + Once the samples are displayed back in school, more students would be exposed to the findings.
  + To motivate students and deepen their understanding of the subject.

***3 x 1mks***

1. **Importance of reconnaissance before actual field study:**
   * To help in identifying methods of data collection.
   * To help in formulating the hypotheses and objectives of study.
   * To help in assembling appropriate equipment for the study.
   * To assist in estimating the cost of the study.
   * To seek permission from relevant authorities.
   * To determine the appropriate routes to be used in the field.
   * To help identify the location of various soils before the study.
   * To help identify in preparing a work schedule.
   * To identify problems that are likely to be encountered. ***3 x 1mks***

9 (i) A lake is hallow, depression or a basin on the earth’s surface where water has

accumulated or which is filled with water.  ***1mk***

1. **External land forming processes which lead to formation of lacks.**

- Weathering a solution in limestone areas

- Deposition by water / ice

- Erosion by wind / ice

- Meteorite filling.

- Human activities e.g. damming and ploughing of land and explosives

- Mass movement. ***3 x 1mks***

b) (i) **Ways in which lakes influence natural environment and human activities.**

- Reservoirs in the water cycles.

- Enables self-purification of water and air.

- Applies bio-diversity and support both flora and fauna.

- Modify local weather and climate.

- Regulation of river flow or controlling flooding.

- Recreation e,g. Yatching, boat racing and fish sporting.

- A habitual for aquatic animals like fish.

- Source for building materials.

- Generation of H.E.P.

- Water for irrigation

- Source of rivers e.g. River Nile / L.victoria.

- Land transport has been impeded by lakes.

- Source of minerals eg. Trona / Lake Magadi. ***2 x 1mks.***

1. **Economic importance of lake Naivasha.**

- It provides water for irrigation / domestic.

- Its shores provide sand used in the construction industry.

- It provides waterway for transport.

- It is a tourist attraction.

- It is a source of fish hence used for fishing. ***5 x 1mks***

c) (i) **Karst scenery is a term used to describe a peculiar landscape typical of**

**limestone religious where the process of carbonation is prominent.**

- Karst scenery is any rugged landscape whose surface rocks are limestone

or dotomite and which has been acted on by carbonation and solution by Ritu and river water to produce features typical of lime stones surfaces. ***2mks***

**(ii) Factors which influence development of a kart scenery**:

- The surface rock and the rock beneath the surface should be thick limestone, dolomite or chalk.

- The rock should be hard and well jointed

- The climate should be warm / humid hot.

- Rainfall should be moderate to high.

- The water table in the rocks should be deep below the surface limestone rocks. ***3 x 1mks***

d) (i) **Characteristics of features which form in limestone areas:**

- A residue of ared clay soil left behind by percolating water into the

ground called Terra Rossa.

- Ragged surface that are swept clean by the Terra Rossa called lapies.

- As the surface water rapidly sinks into ground valleys are left with no

water called Dry valleys.

- Gullies that appear a long the joints of the rocks are caused by solution

which are called Grikes.

- Ridges that form between two grikes are called Clints.

- Funnel- like depressions varying depth and width into which short

streams disappear called swallow holes.

- Wide open swallow holes of considerable size possessily alleviated floors

a long with short- lived streams are called Uvala.

- An elongated basin with a floor and steep sided enclosing walls

called polje.

- Stalactites and stalagmites are formed when limestones rock dissolves in

water. ***5 x 1mks***

(ii) **Surface features:**

- Grikes and clints

- Dry valleys.

- Dolines

- Uvala, lapies, Swallow holes, polje and gorges.

10 a) (i) Aridity is state of the land of the land being deficient in moisture, leading

to scanty vegetation or lack of it and deficiency in soil fertility while

desertification is the encroachment of large areas of barren land which

are covered with sand / is the slow but steady encroachment of desert-

like conditions onto potentially or formality productive agricultural land.

(ii) **Physical causes of aridity**

- Insufficient rainfall whereby an area receives less than 250mm in a year. This amount of rainfall does not support luxuriant growth of vegetation.

- Relief barriers whereby areas located in the leeward side of mountains

become arid because they lie in a rain shadow.

- High temperatures leads to high rates of evaporation once it exceeds the rate of precipitation there is deficiency of moisture leading to drought.

- Wind systems originating from lands are usually dry such winds bring a drying effect on the land where they pass. ***Any 3 x 2=6mks.***

b) (i) **Negative effects of desertification.**

- Leads to the destruction of water-catchments areas and therefore shortage

of water.

- Leads to the drying up of soils, rendering them infertile.

- It compels populations to migrate from the affected areas.

- It exposes the soils to wind erosion. ***3 x 1mks***

(ii) **Change of climate due to continued use of chlorofluoro- carbons.**

- Chlorofluorocarbons are chemicals which when released into the atmosphere, damage the ozone layer. The consequence is that a large percentage of ultraviolet solar radiation reach the earth. Excess ultraviolet radition is harmful to life on earth.  ***4 x 1mks***

c) (i) Soil erosion is the process by which the top soil is detached and carried

away by various agents, such as rainwater, at a rate that is faster than it is

being replaced by the soil – forming processes while soil degeneration is

the decline in the usefulness of a soil due to soil mismanagement,

environmental causes or both. ***2mks.***

(ii) **Agents of soil erosion.**

- Animals

- People

- Wind

- Running water/ glaciers ***3 x 1mk***

1. **Types of soil classification by soil order**

- Zonal soils

- Intrazonal soils

- Azonal soils ***3 x 1mks***

1. **Merits of mulching in soil conservation.**

- It reduces evaporation of water from the soil.

- It protects the soil from erosion.

- It increase the humus content of the soil.

- It increase the rate of infiltration of water into the soil.

- It retains moisture in the soil. ***2 x 1mks.*** **END**