Kenya Certificate of Education
Geography Paper 1
FORM 3
2017

MARKING SCHEME

1. a) Forces that shape the surface of the earth centripetal – pulls the poles towards each other and causes flattening
- Centrifugal flinging force that causes the bulge at the equator
- Gravitational – pulls towards the centre causing the rounding effect 2 x 1 = 2 marks

b) Characteristics of the crust
- Average thickness 16 – 24km (Mts upto 70/80 km)
- Made up of two parts. the outer and inner crust
- The outer crust made of Silica and aluminium (SIAL)
- The inner crust made of SIMA
- SIAL density - 2.7 gms / cc
- SIMA average density 2.3 - 3.0 gm/cc
- Sial mainly forms the continental crust while Sima forms the oceanic crust. Max. 3 x 1 = 3 marks

2. (a)Traditional Methods of Weather Forecasting
   - Plants shedding leaves indicates period of drought.
   - Safari ants indicate it will rain.
   - Migration of butterflies also indicates it will rain.
   - Croaking of frogs during dry season indicate its going to rain.
   - Flowering of certain plants indicates the onset of rainfall.
   - Changes in the intensity of sunshine indicate its going to rain.

   (b) Factors Hindering Weather Forecasting
   - Lack of skilled man power due to limited training facilities.
   - Lack of modern equipment leading to wrong forecasts.
   - Natural calamities such as storms and earthquakes.
   - Extreme weather conditions which may damage or displace instruments.
   - Use of faulty instruments.
   - Human error.
   - Poor sitting of instruments.

3. (a)
   A - Savana grassland
   B - Woodland
   D - Bamboo forest (3 x 1 = 3mks)

   (b) Importance of vegetation in zone C
- Purification of air in biosphere
- Roots and plants bind soil together and check rain intensity – control soil erosion
- Habitat for wildlife – attraction of tourist generating foreign exchange
- View material for industries e.g. pulp, paper
- Some plants used in manufacture of medicine
- Aesthetic value – makes land beautiful
- Water catchment area – source of rivers (2 x 1 = 2mks)

4. (a)
- The sun
- The planets
- Asteroids
- Metears/meteorites
- Comets
- Natural satelite (Any 3 x 1 = 3mks)

b)Passing star theory/big bang Nebular cloud theory (Any 2 x 1 = 2mks)

5. a) Annual range of temperature
   16º - -4 = 20ºc (1mk)

   (b) Describe the climate of the above station
- Hottest months are July and August while coldest month is January
- The station experiences moderate to low temperatures
- Annual range of temperature is high 20ºc
- Total annual rainfall received is 1479mm
- The station experiences high rainfall throughout the year
- Wettest month is July with 188mm of rainfall while driest month is February with 78mm of rainfall Most of the rainfall is experienced during the warm months of –June, July and August (Any 3 x 1= 3mks)

6.

a) i) Faulting is process whereby the crustal rocks or rocks of the earth crust fractures or cracks.
Process of breaking or fracturing of the rocks of the earth crust due to compression or tension forces (2 marks)

ii) Three types of features associated with faulting are:
- Fault scarps
- Fault steps
- Block mountains/horsts/fault blocks
- Tilt block any 3 x 1 = 3 mark

iii) Formation of the rift valley by tension:
Process:- movement within the crust causes instability
Layers of the rocks are subjected to tensional forces.
Parallel faults – Lines of weakness develops/cracks/fissues develops/ Normal faults develops.
- Continued tensional forces results with the middle block subsides/sink.
- Side blocks are pulled aside.
- The middle sunken part forms the Rift valley. Step faulting may follow.
- The hangings sides are later smothered by the forces of denudation/erosion weathering.
Any 4 x 1 = 4 marks

b) (i)Any two objectives of the study.
- To locate the different features
- To find out the main features associated with rift valley.
- Establish the land use around the area;
- To explain how the rift valley was formed.

ii)Three importance of studying faulting through fieldwork are:
-It enables the students to collect first information.
- It helps the student to develop manipulative skills
- It enables the students to develop co-operation with each other.
- It helps the student to apply the knowledge learned in the class room.
-It makes learning interesting
-It makes learning real
-It provides detailed/broader learning or in depth learning.
- It enhances vision memory. (3 marks)

(iii) The significance of faulting to human activities.
- Faulting leads to formation of features that provides beautiful sceneries which attract tourists.
- Faulting leads to formation of lakes that are important fishing grounds/tourist sites/mining sites/provide water for irrigation/domestic use/industrial use.
- Faulting leads to displacement of rocks which exposes minerals that are mined.
- Faulting may lead to formation of mountains/Horsts which attract rainfall on the wind ward side which favours agriculture/settlement forestry.
- When faulting occurs across a ridge it may provide a dip which could form a mountain pass where transport and communication liner can be constructed/may hinder development of transport.
- Subsidence of land as a result of faulting may lead to loss of life and property.
- Faulting may cause a river to change direction or disappear causing water shortage for the people downstream.
- Springs occurring at the foot of the fault scarps attracts settlements.
- Faulting creates a deep fault which are passages of steam jets which may be utilized for geo-thermo power projects.
- Rivers flowing over fault scarps may form waterfalls which may be suitable sites for Hydro-electric power production. (H.E.P).

7.

(a) (i) Three types of rocks according to their mode of formation.

– Igneous rocks
– Sedimentary rocks
– Metamorphic rocks. (3 x 1 = 3mks)

(ii) Three regions where sedimentary rocks are found in Kenya.

– Kilifi
– Kwale
– Malindi
– Thika
– Athi River zone
– Lebatin plains
– Duduchca plains(any other) (3 x 1 = 3mks)

(b) (i) Characteristics of sedimentary rocks
- Are formed from sediments.
- Are layered or stratified.
- Are non-crystalline
- Contain fossils.
- Have bedding plane / plane of stratification. (4 x 1 = 4mks)

(ii) The formation of mechanically formed sedimentary rocks.

- They are formed from previously existing rocks.
- Particles are derived from pre-existing rocks through the process of weathering.
- They are transported by either wind, water or ice.
- They are deposited in layers according to their sizes with large debris deposited first and fine debris last.
- Compaction due to pressure is applied. (5 x 1 = 5mks)

(c) Significance of rocks to the economy of Kenya.
- Some rocks contain mineral salts which is consumed by both human beings and animals.
- Rocks are used for building and construction.
- Some rocks attract tourists earning the country foreign exchange.
- Rock, weather down to form soils which support agricultural activity.
- Some of the rocks yield minerals which are exploited and bring income to the country. (any 5 x 2 = 10mks)

8. Explain how the following factors influence the distribution of vegetation. (2 mks)

(i)Climate

- Areas which have low temperatures have scarity/no vegetation/areas which have moderate temperature have dense vegetation.
- Regions which receive high rainfall have dense vegetation growth/areas which have low rainfall have scanty/scrub vegetation.
- Hot dry winds cause drought conditions which is responsible for scanty/scrub vegetation/moist winds lead to increased precipitation when they blow over a region hence dense vegetation.
- Places which receive long hours of sunlight have many varieties of lants/areas which receive less/short hours amounts of sunlight have few/little variety of plants.

(ii) Human beings
(2 mks)

- Some human activities have led to clearing of natural vegetation causing the establishment of deserts/semi natural vegetation.
- Conservation measures geared towards protecting the existing vegetation have led to establishment of forest/natural reserves.

(b)

(i) Name the vegetation zone marked X and Y. (2 mks)

X -Woodland and grassland

Y -Swamp vegetation

(ii) Give two uses of Savannah vegetation. (2 mks)

- Commercial ranching/grazing is practiced in some parts of the grassland.
- Are home to wild animals.
- The trees are habitats for bees which provide honey.
- Some of the shrubs/herbs are used for medicinal purposes.
- Some of the wild fruits/berries are consumed as food.

(iii)Describe the characteristics of Mediterranean type of vegetation. (5 mks)

- Some plants have small/thick-skinned/leathery leaves/spiny leaves.
- Some plants have long roots.
- Some plants have thick barks.
- Some plants have large fleshy bulbous roots.
- Some plants have shiny/waxy leaves.
- Some trees are deciduous
- Some plants are evergreen.
- The vegetation is adapted to the long hot and dry summers.
- Some plants have fleshy leaves.
- Grasses dry off during summer and germinate during winter.
- Shrubs/thickets/bush/thorny bush/marquise/machia/ chaparral/malle are common.
- Woody scrub is common in very dry areas.

(c) Explain three ways in which desert vegetation adapts to climatic conditions. (6 marks)

– Some plants have thick/fleshy/succulent leaves/barks to enable them store water.
– Some plants have long roots to tap the underground water.
– Some have no leaves/have thin/spiky/waxy/needle like leaves to reduce transpiration.
– Some plant seeds remain dormant awaiting the short rains.
– Some plants have thick/hard barks to reduce transpiration.
– Some plants with in the absence of moisture but have quick recovery ability.
– Some plants have thorns to protect themselves from browsing animals.
– Some plants have underground bulbs to store water.
– Most plants are stanted/dwarf like due to the harsh conditions.
– Some plants are quick sprouting to take advantages of the short-lived desert rains.

(d) You are planning to carry out a field study of the vegetation within the local environment.

(i)State three preparations you will make for the field study. (3 marks)

– Formulate objectives/hypotheses for the study.
– Carry out reconnaissance of the area of study.
– Seek permission from the relevant authorities.
– Acquire appropriate stationery/tools/equipment.
– Prepare a working schedule.
– Read more information about vegetation from secondary sources.
– Divide students into groups and assign work to each group

(ii)How will you identify the different types of vegetation? (3 marks)

– By their appearance
– Their colour
– By their age
– By their leave size/pattern type
– By the nature of their barks
– By the texture of their leaves.
– By their system of the roots.