

## 312/1 GEOGRAPHY (2017)

## PAPER 1

## MARKING SCHEME

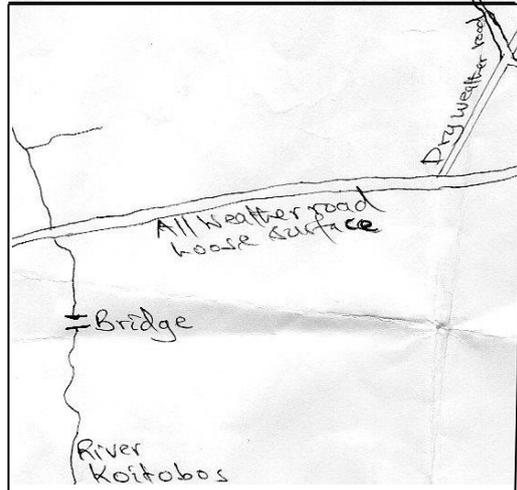
1. a) i) Mohorovicic discontinuity. (2 mks)  
 ii) Guternberg discontinuity
- b) *Characteristics of mantle (3mks)*
- Is divided into two parts namely the upper mantle and the lower mantle.
  - On average is about 2900 km thick
  - Has an average density of 3.0 to 3.3 gm/cc
  - The upper mantle has lower temperatures than the lower one between 1000<sup>0</sup> C and 3000<sup>0</sup>C
  - The upper mantle is semi molten
  - The lower mantle is viscous liquid
  - The dominant mineral is olivine.
2. a) *What is a rock?* A rock is a substance made up of a mineral particle cemented together and forms solid part of the earth's crust/Naturally formed. (2 mks)
- b) (i) *Sandstone* - Quartzite or slate. (3 mks)  
 ii) *Limestone* - marble  
 iii) *Clay* – slate or schist
- 3 a) *Types of weathering. (3 mks)*  
 Biological weathering  
 Physical weathering  
 Chemical weathering
- b) *Negative effects of mass wasting. (2mks)*
- When materials break away from a hillside, they leave behind scars of bare ground.
  - Soil erosion can easily start on bare slopes where scars have formed.
  - When soil creep occurs, the regions where the soil moves from are deprived the top fertile soils.
- 4a) A playa is an inland drainage basin or a small lake in such a basin which is found in semi-arid and arid areas while a bajada is an accumulation of alluvial material made of coalesced adjacent alluvial fans in a desert basin.
- 5.a) i) Parts X - Epicenter (2 mks)  
 Y - Seismic focus
- ii) How tsunami occurs (3 mks)
- When an earthquake occurs beneath an ocean basin the sea floor is rocked by the shock waves. The mass of water in the part of the sea is rocked back and forth and this results in formation of a massive sea wave which grows bigger and higher as it approaches the shore.
6. a) i) Longitudinal extent 35<sup>0</sup> 00'E to 35<sup>0</sup> 15' East (2mks)  
 ii) 1 cm rep 0.5 kilometers (2mks)  
 iii) Rogurr Hill - 4624 (2mks)
- b) i) Area of Kaptaber forest = 48 km<sup>2</sup> (2mks)

iii) - Scrub –

- woodland -
- scattered trees
- Riverline trees -
- Papyrus
- Thicket

(3mks)

c) i) 10 cm by 10 cm



(5mks)

d) Describe the relief of the area covered by the map. (5 mks)

- The altitude of the highest point is 2362 metres Rogurr Hill.
- The steep areas are located at the Eastern parts of the map as indicated by closely spaced contours.
- Most parts of the western part of the map are gently sloping.
- The Northing 18 to 26 is swampy indicating that the area has low altitude and fairly flat.
- Many hills are situated at the North Eastern and Eastern parts of the map.
- The lowest altitude is about 1760 metres.

e) Function as of Kitale Town. (4 mks)

Trading presence of market centres and shops

Health centre - Presence of hospital

Transport – presence of roads within the town.

Recreational – Presence of sports club and Golf course

Religious centre – presence of church.

7. a) Orogenesis refers to the process through which fold mountains are built or formed. (2 mks)

b) In a symmetrical fold, the limbs dip uniformly from the axis whereas in an asymmetrical fold, one limb dips more steeply than the other. (2 mks)

c) Two fold mountains in Africa. (2 mks)

- Cape Ranges
- Atlas mountains

- d) i) Rolling plains (3 mks)
- Intermontane plateaus
  - Intermontane basins
  - Synclinal valleys
  - Valley and ridge landscape
  - cuestas
- e) Significance of folding to human activities
- Fold mountains are sources of rivers that provide water for generation of hydroelectric power or for domestic use or industrial use or irrigation.
  - Fold mountains are often forested and provide timber which is used in building and construction industry/medicinal, aesthetic and wildlife habitat.
  - Some fold mountains have exposed valuable minerals deposits which are mined.
  - Fold mountains are tourist attractions, snow covered slopes off old mountains Encourage sporting activities thus earning countries foreign exchange.
  - The windward slopes of fold mountains receive heavy precipitation which encourages agricultural activities.
  - The leeward slopes of some fold mountains create rain shadow effect which result into aridity discouraging crop farming. (5x 2)
- f) i) *Reasons for conducting reconnaissance. (4mks)*
- Helps in designing the research methods to be used during the study.
  - Helps to formulate relevant hypothesis for the study.
  - Helps in designing working schedule.
  - Helps in identifying appropriate equipment or instrument to be used in the study.
  - Helps in identifying the features and their location before the study tour.
  - Helps in identifying problems likely to be faced.
- ii) Relevant textbooks – Journals (2 mks)  
Newspapers, - Geography notes – Videotapes  
Internet or electronic media
- 8 a) Natural vegetation is the plant cover that grows wildly on the earth's surface without interference from man and his animals. (2 mks)
- b) Canada - Prairies                      Russia - Steppes                      Australia – Downs
- c) How precipitation influences distribution of vegetation.
- Moisture is an essential commodity for survival of plants.
  - It is the various forms of precipitation which provide moisture to plants through the soil.
  - The amount of rainfall a region receives determines the type of plants that would grow.
  - Heavy rainfall in a region of high temperatures would support vegetation grown.
- d) Characteristics of savanna vegetation. (6 mks)  
Savanna vegetation is a mixture of trees and grass.  
The dominant type of vegetation is grass. The wetter areas have continuous cover of long thick grass. In drier areas trees are shorter, few and scattered.  
Most trees are umbrella shaped. Most trees are acacia. Along the valleys there are fall trees and thick bushes. Most of the trees are deciduous. Some trees have long roots. Most seeds are dormant during the dry season.

- e) Reasons why Tundra region has scanty vegetation (2mks)
- i) The temperatures are too low to support vegetation
  - ii) The surface is mainly bare rock, so no soil has formed to support vegetation.
  - iii) Water is always in frozen state ie. Snow therefore not available to plants.
- f) i) *Seeking permission. (2 mks)*
- Is an official requirement
  - Enable administration arrange for transport, lunch or meals
  - Enables the administration to take care of the disruption of school programmes.
  - Enables administration provide entry fees if required.
  - Enables administration provide essential tools and equipment for use.
- ii) *Challenges include*
- Attacks by wild animals or insect or snake bites
  - Adverse weather conditions
  - Thick or thorny vegetation or rugged terrain may hinder movement within the forest.
  - Tiredness due to walking long distances
  - Inadequate time for data collection
  - Getting lost or loss of direction to follow
  - Uncooperative or absent respondent
  - Injuries thus disrupting the study and working schedule.
9. a) i) A glacier is a mass of ice moving outward from an area of accumulation. (2 mks)
- b) (i) East Africa experiences high temperatures under which ice sheets cannot form.
- ii) Most parts of East Africa have low altitudes.
- iii) East Africa is located at low latitudes. (3 mks)
- c) i) *Hanging valley (6mks)*
- There exist river valleys, both the main and a tributary valley. A glacier occupies former river valleys. Both the main and tributary valleys are occupied by the glacier. There will be more erosion on the main valley compared to tributary valley. The main valley is therefore deepened and widened faster than tributary valley. When the glacier melts, it exposes a deep, U-shaped glacial valley with the smaller tributary valley suspended high up in the valley side. The suspended tributary valley forms a hanging valley.
- ii) *Arete* – Two adjacent cracks or hollows exist on a mountain side. The two hollows or cracks are filled with ice. The ice erodes the sides through plucking and deepens the hollow through abrasion.
- Through erosion the back walls of the hollows slowly recede and eventually the hollows are separated by a knife edged ridge. The ridge is called an arête. (6 mks)
- d) i) *Erosional features in lowlands. (3 mks)*
- Crag and tail - ice eroded plains – Roche moutonne
- e) *Positive effects of glaciations in lowland areas. (6 mks)*
- Glacial till provides fertile soils suitable for farming.
  - Outwash plains comprises of ..... and gravel used as building materials.
  - Glacial lakes in low lakes can be exploited for various economic use such as fishing
  - Glaciations forms features such as drumlins and eskers which are tourist attraction.
  - Glaciated lowlands are generally flat and ideal for establishment of settlements.

10. a) **Desert** – Is an area of land with scanty rainfall and scarce vegetation. (2 mks)
- b) *Factors that contribute to development of deserts.*(3 mks)
- An increase in temperature accompanied by excessive evaporation.
  - Prolonged period of drought
  - Existence of cold ocean currents offshore.
  - Remoteness of land in the interior of continent far away from direct influence of the sea.
  - Human activities such as deforestation, and overgrazing.
- c) *Ways of wind transport.* (6 mks)
- i) Suspension – The fine and light particles are lifted off the ground and carried in the wind currents.
- ii) Saltation – The large fragments are lifted off the ground by wind eddies. They bounce back on the ground and lifted again thus moved in a series of hops and jumps within the wind currents.
- iii) Surface creep – The heavy materials like small stones or pebbles are pushed along the ground by wind currents. They may slide or roll along.
- d) i) *Zeugen* (5 mks)
- The zeugen form in deserts when there is rock outcrops made of horizontal layers of alternating hard and soft rocks. The top layers have cracks and weathering process opens up the joints.
- Wind an abrasion erodes the hard rock along the joints. The cracks or joints are deepened and widened. The soft rock below is eventually exposed. Deflation process blows away loose broken materials.
- Furrows are formed as wind a abrasion attack the soft rock. The hard and more resistant rock forms ridges which are separated by the furrows.
- The ridges are the zeugen.
- ii) *Rock pedestal* (5 mks)
- A rock pedestal forms from a rock outcrop that sticks above the general surface and made of horizontal and alternating layers of hard and soft rocks.
- The rock is weakened by weathering and wind abrasion.
  - The softer rock are eroded faster than hard layers
  - Wind abrasion attacks the lower part of the rock and is reduced to a thin stem ---- supporting huge column of rock. The new feature is called rock pedestal.
- d) i) *Reasons for route map* (2 mks)
- To show the extent or delimit the area of study
  - To show the route to be followed during the study
  - To show drainage features
  - To estimate distances
  - To show general nature of terrain.
- ii) Draw sketches (2 mks)
- Take notes
  - Take photographs