KAPSABET HIGH SCHOOL

312/1 (*Kenya Certificate of Secondary Education*) **Paper 1**

INTERNAL MOCK EXAM

GEOGRAPHY

Dec. 2020– 2 ¾ Hours

MARKING SCHEME

Instructions to candidates

a) *Write your Name, Index, Admission number and stream in the spaces provided above.*
b) *Sign and write the examination date on the spaces provided above.*
c) *This paper contains two sections: **A** and **B.***
d) *Answer **all** the questions in **section A** in the spaces provided below each question.*
e) *In section B, answer **question 6** in the spaces provided below it and **any other two** questions in the spaces provided after question 10.*
f) *Do not remove any pages from this booklet.*
g) Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.
h) Candidates must answer the questions in English.

SECTION A

*Answer **all** the questions in this section.*

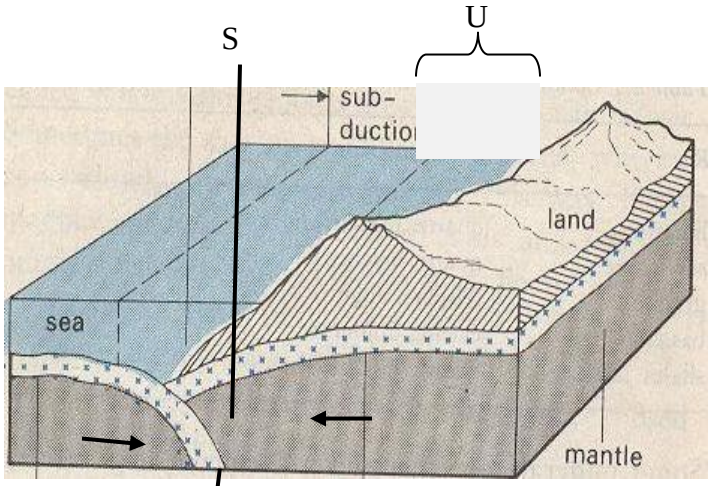
1. (a) Name two layers of discontinuity in the earth's interior (2 marks)
   - Mohorovicic/Moho discontinuinity
   - Gutenberg discontinuity

   (b) State three characteristics of the outer core in the internal structure of the earth (3 marks)
   -Forms the continental crust/upper crust
   -Consist mainly of silica and aluminium
   -Made up of light rocks/2.7g/cc/floats on SIMA
   -Made up of granitic/sedimentary/metamorphic rocks
   -Made up of rigid/brittle rocks

2. (a) Name ***two*** types of earth movements. (2 marks)

   - *Horizontal earth movement*
   - *Vertical earth movement*

   (b) The diagram below represents tectonic plate boundary.



   (i) Name the areas marked **S, T**, and **U**. (3 marks)

   S – *Oceanic trench*
   T – *Destructive boundary*
   U – *Subduction zone*

3. (a) Differentiate between Seismic focus and epicenter. (2 marks)

   - *Seismic focus is the origins of shock waves inside the earth's crust.*
   - *The epicenter is the point on the earth's surface vertically above the focus.*

(b) Name ***two*** types of surface longitudinal waves. (2 marks)

- *Rayleigh waves*
- *Love waves*

4. (a) Apart from exfoliation, name two other physical weathering processes influenced by temperature changes (2 marks)

- *Block disintegration/block separation*
- *Granular disintegration*
- *Crystal growth*

(b) Describe exfoliation process. (3 marks)

- *Exfoliation occurs within rocks of **uniform structure** mainly in arid and semi-arid areas*
- *During the night, temperatures are high and the rocks are heated on the surface making the surface **expand** (the inner core is cooler and does not expand)*
- *During the night, temperatures are lower and the rocks will and contract on the surface*
- *Continued expansion and contraction makes the rock surface to develop cracks which will finally break and **peel off** in curved sheets, this is exfoliation*

5. (a) Name two main sources of underground water. (2 marks)

- *Rainwater*
- *Melt water*
- *Lake and sea water*
- *Magmatic water*

(b) How is a limestone pillar formed? (2 marks)

- *It is formed inside a Cavern in a limestone area where a **stalagmite** and a **stalactite** form.*
- *Both the stalagmite and stalactite grow towards each other, eventually meeting to form a continuous column that resembles a pillar. This is a limestone pillar*

SECTION B

*Answer question **6** and any **two** other questions from this section.*

6. Study the map of Yimbo 1:50,000(sheet 115/1) provided and answer the following questions.

(a). (i) Give the title and sheet number of the map extract. (2mks)

- *East Africa 1:50000 (Kenya/Uganda), sheet 115/1*

(ii) What is the six figure Grid Reference of the Trigonometrical. Station at Abiero Hill on the South Eastern area of the map? (1mk)

- *391806*

(iii) Name the height of the highest point in the area covered by the map. (1mk)

- *1318 meters*

(b) (i) Calculate the area of Yala swamp found to the north of Regional Boundary. Give your answer in $Km^{2.}$ (2mks)

- *Full sqs =5*
- *½ sqs =9/2=4.5*
- *Total area =5+4.5=9.5±0.5km²*

(ii) Citing evidence from the map identify two economic activities carried out in the area. (2mks)

- *Crop/cereals/grains growing evidenced by presence of posho mill*
- *Mining evidenced by mineral workings/gold mine*
- *Trade evidenced by presence of several markets*
- *Transport evidenced by presence of port, ferry, roads*

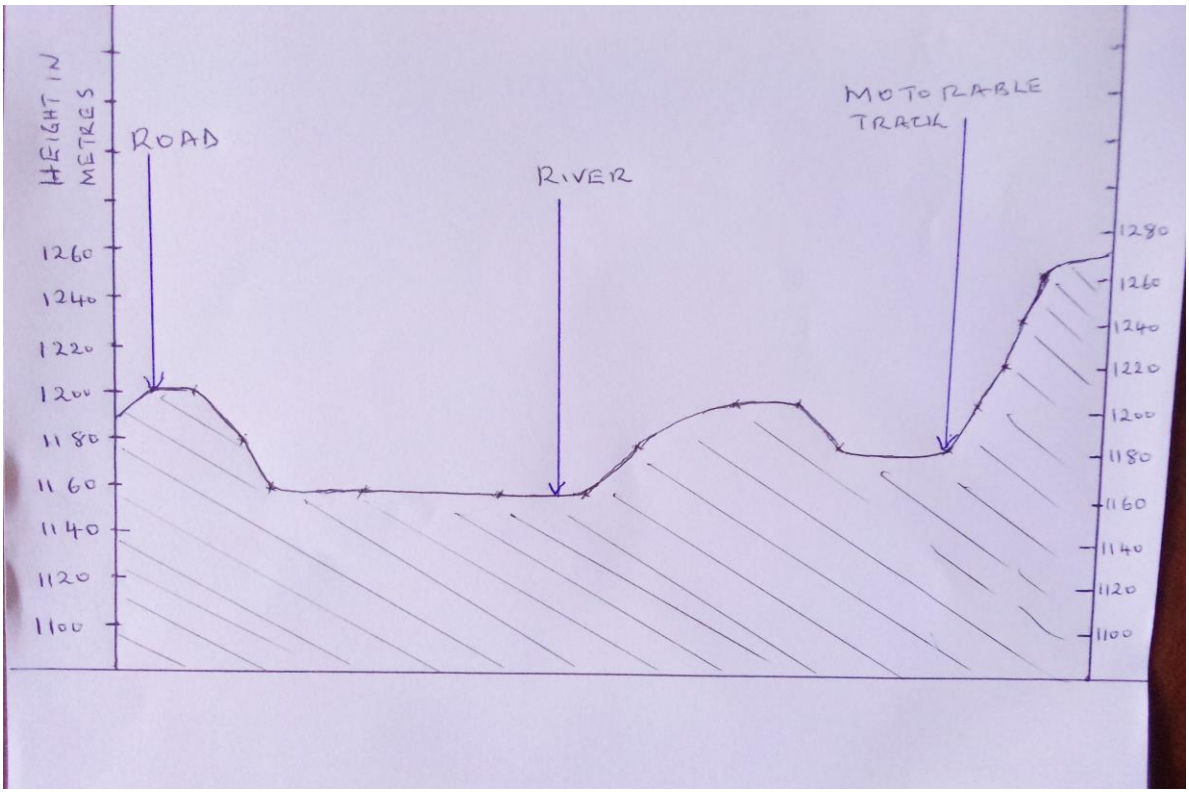
(c). (i) Using a vertical scale of 1cm represent 20 metres, draw a cross-section along Northing 80 from Easting 30 to Easting 39. (4mks)

(ii) On the cross-section, mark and name the following:

. All weather road:- loose surface
. Indefinite River
. Motorable track

(3mks)

CROOSS-SECTION ALONG NORTHING 80 FROM EASTING 30 TO 39



Title 1mk
Vs 1mk
Tr 1mk
Sp ½mk
Ep ½mk
River 1mk
Road 1mk
Track 1mk

(d). (i) Describe the distribution of natural vegetation in the area covered by the map. (4mks)

- *Papyrus vegetation dominates Yala swamp/NW area and along River Yala in NE area*
- *Thicket vegetation is found in areas such as Mageto Island, Ogare hill, Ramogi hill*
- *Scrub vegetation is found in several place such as around Migwena/Eastern side of the area covered by the map, north eastern sides*
- *Woodland vegetation dominates the north eastern side of the area covered by the map*

(ii) Explain three factors which have influenced the distribution of Settlement in the area. (6mks)

Transport:

- *Along the roads/motorable tracks/footpaths, there is linear settlement*
- *At road junctions there are clustered/nucleated settlements*

Vegetation:

- *there are no/few settlements within the woodlands/thickets/areas where there are papyrus swamp vegetation*
- *most areas covered by scrub/scattered trees have clustered/nucleated settlement*

Relief:

- *There are no/few settlements on the hills, isolated islands in the lake.*
- *There are clustered/nucleated settlements on the undulating land*

Drainage:

- *There are no settlements in the areas having seasonal/papyrus swamps*

Market:

- *Market centers have dense/nucleated/clustered settlements*

7. (a) (i) Name two forces that are responsible for the varied shapes of planet earth (2 marks)

- *Centrifugal*
- *Centripetal*
- *Gravity/force of gravity/gravitational force*

(ii) State two ways through which geographers gather information about the internal part of the earth (2 marks)

- *Carrying out seismic experiments/studies*
- *Crustal boring/drilling*
- *Studying of volcanic materials extruded on the earth's surface*

(iii) Describe the origin of the earth according to the Nebula Cloud Theory (5 marks)

- *The explosion of the stars led formation of a huge cloud of gases (hydrogen and helium), dust and ice pellets*
- *The cloud of gases whirled. Cooled and condensed to a disc shape*
- *The gravitational attraction within the material increased and caused the particles to compact*
- *Some particles broke from the edge of the disc and whirled*
- *The compacted particles whirled faster towards the centre of the disc in different directions.*

- *As they whirled in different directions they cooled and solidified to form planets*
- *The swirling caused particles to collide losing a little energy at a time*
- *The of the spinning disc condensed to form the sun while the material spinning around condensed into large chunks of materials called planetoids*
- *The planetoids collided and coalesced into large bodies called planets*
- *The earth is one of them*
- *The centre of the disc formed the sun.*

(b) (i) Differentiate between Revolution and Rotation of the earth (2 marks)

- *Revolution is movement of the earth around the sun following a path called orbit while Rotation is the spinning/movement of the earth on its own axis*

(ii) When it is noon in London (0^o), what is the East African Standard time? (2 marks)

12.00+3hrs=1500hrs or 3.00p.m.
(NB East African time zone is 3hrs ahead of London)

(iii) Outline three effects of the rotation of the earth (3 marks)

- *Causes the occurrence of day and night*
- *Causes deflection of winds and ocean currents*
- *Causes the rising and falling of ocean tides*
- *Causes variation in time at different longitudes*
- *Causes difference in atmospheric pressure on the surface of the earth*

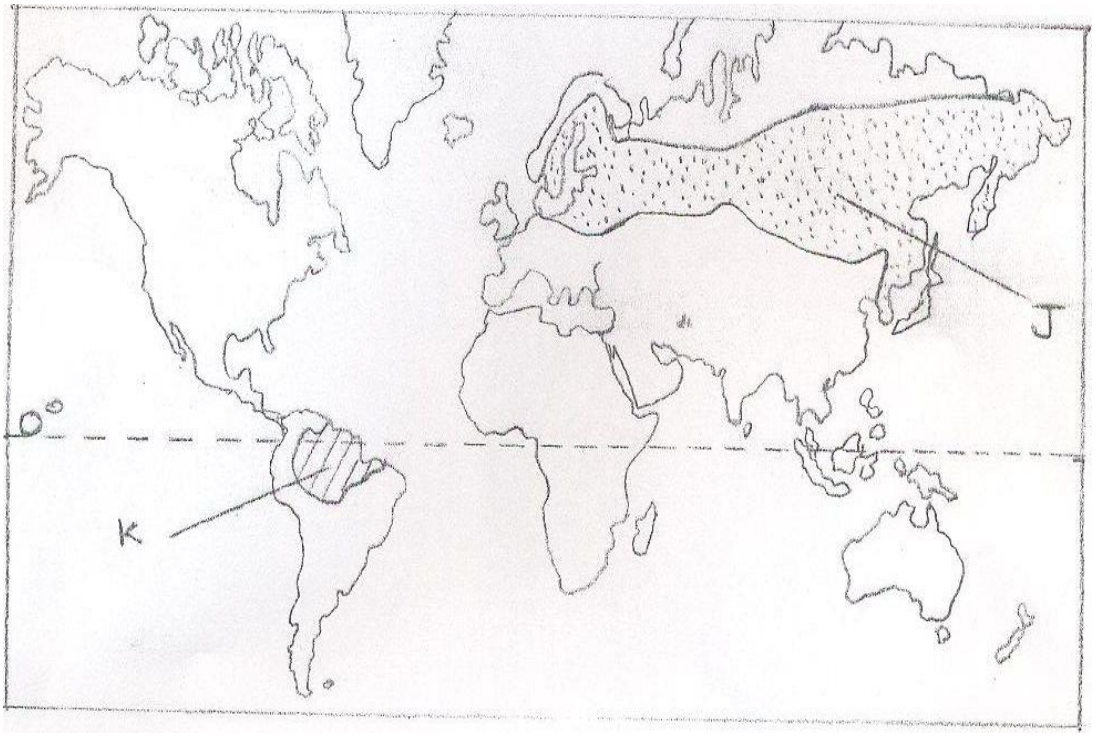
(c) (i) Apart from autumn name three other seasons that occur on the earth (3 marks)

- *Summer*
- *Spring*
- *Winter*

(ii) Describe three climatic conditions associated with autumnal season (6 marks)

- *Temperatures begin to drop*
- *The air starts becoming cool and eventually chilly*
- *Hours of sunlight begin to reduce and nights become longer*
- *The sky becomes hazy/misty*
- *Towards the end of the season, snow instead of rain, begins to fall*

8. Use the map below to answer questions a (i) and (ii).



(a) (i) Name the types of forests marked **J** and **K**. (2 marks)

J - *Coniferous forests*
K - *Equatorial/tropical rain forests*

(ii) Explain how the vegetation marked **J** is adapted to the climatic conditions. (5 marks)

- *The tree have needle like leaves which were to reduce loss of water in winter when there is no moisture to be absorbed from the soil.*
- *The leaves have a tough waxy skin which protect them from winter cold.*
- *The trees are conically shaped and this allows snow to slide off easily.*
- *The trees have flexible branches that allow snow to easily slide, hence reducing drainage to the trees.*
- *Most of the trees are evergreen to allow maximum use of sunlight during the short growing season*
- *The tree trunks are flexible hence able to sway without breaking during strong winter winds.*
- *The trees have a widely spread shallow to utilize from the topsoil.*

(b) Explain how the following factors influence distribution of vegetation.

(i) Soils (2 marks)

- *Areas of deep, well drained fertile soils where large varieties of plants e.g. forests.*
- *Areas of poorly drained shallow and infertile soils have few varieties of plants, hence such areas are dominated by scattered trees, shrubs and grasslands.*

(ii) Wind (2 marks)

- *Hot dry winds created during hot conditions, leading to scanty vegetation in an area e.g. scattered trees.*
- *Moist winds bring in rainfall hence growth of thick vegetation cover e.g. forests.*
- *Winds disperse seeds hence establishment of plants in certain areas.*

(iii) Slope (2 marks)

- *On steep slopes there is little/scanty vegetation cover due to high of soil erosion by raining water.*
- *Gentle slopes have of vegetation because they are well drained.*
- *Flat areas in areas of high rainfall will have poor drainage thus encourage the growth of swamp plants.*

(c) State ***five*** characteristics of tropical savanna grasslands. (5 marks)

- *Consist of a mixture of trees and grass.*
- *Grass is the dominant type of vegetation of the savanna.*
- *Most of the trees are umbrella-shaped.*
- *The common tree species are acacia, baobab, palms and ceiba.*
- *Some trees are stunted barks and are drought resistant.*
- *Most of the trees shade their leaves during the dry season and the grass withers and dry up.*
- *Some of the trees have long tap roots which develop in the ground.*
- *Some of the trees like baobab have thick stems.*
- *Along some river valleys there are tall trees and thick bushes*

(d) A group of geography students are planning to carry out field study vegetation in Nandi County.

(i) State ***three*** reasons why sampling would be appropriate for this study. (3 marks)

- *Saves time*
- *Would be less expensive*
- *Enables them to relevant areas.*

- *Sampling allows detailed study*
- *Sampling reduces bias in data collection.*
- *Vegetation grows randomly so random sampling is appropriate.*
- *A county is too large to be covered as a whole.*

(ii) Apart from collecting samples, state ***three*** other primary methods they would use to collect data on vegetation while in the field. (3 marks)

- *Observation of the vegetation to determine the types.*
- *Measuring weights of the trees*
- *Counting number of plants in a given area.*
- *Touching/feeling the leaves to determine their texture.*
- *Taking photographs of the vegetation.*
- *Tasting some leaves from the roots.*
- *Interview the resource person in the forest department in the county.*

9. (a) Name ***two*** types of glaciers which are found on mountains in East Africa. (2 marks)

- *Ice caps*
- *Cirque glaciers*
- *Valley glaciers*

(b) Explain how the following factors influence erosion by a glacier.

(i) Nature of the underlying rock. (2 marks)

- *Softer rocks are eroded faster by ice abrasion than harder ones.*
- *Well-jointed rocks/rocks with faults and cracks are eroded faster/easily by plucking than smooth ones.*

(ii) Speed of the glacier. (2 marks)

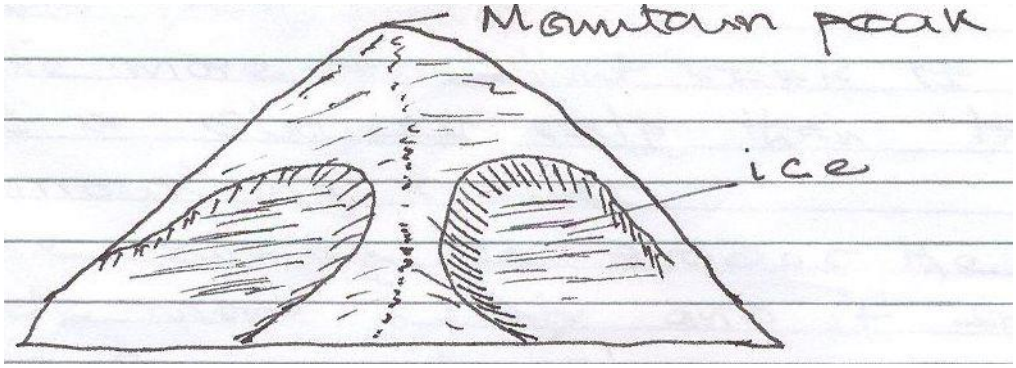
- *A fast moving glacier erodes move than a slow moving glacier because it has more energy.*

(iii) Thickness and weight of ice. (2 marks)

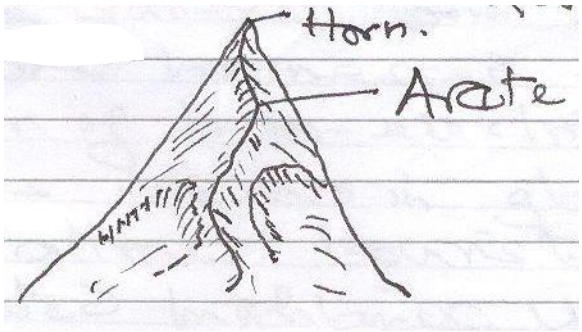
- *Thicker ice is heavier and thus erode the rocks more by abrasion because it exerts more pressure.*

(c) With the aid of labeled diagrams, describe how an arête is formed. (6 marks)

- *Snow accumulates in several hollows on mountain sides.*
- *The snow gets compacted into ice.*



- *The plucking action of ice enlarges the hollows allowing more ice to collect in them.*
- *Freeze-thaw action enlarges the hollows to form large basings/cirques.*
- *The hollow is enlarged and deepened by the cirque glacier through plucking and abrasion.*
- *Nivation eats into the backwalls of the depressions making them recede into the mountain side.*
- *Steep-sided knife edged ridges called arêtes are formed separating the basins.*



Text = 4 marks
Diagram = 2 mks

(d) (i) Describe the process through which a roche moutonnee is formed. (5 marks)

- *A large block of a more resistant rock stands on the path of on coming glacier in a low lying area.*
- *The more resistant rock is eroded at a slower rate than the surrounding rocks.*
- *The moving ice erodes the upstream side more evenly and it smoothens its surface by abrasion with time.*
- *As the ice moves over the downstream side, it erodes by plucking process.*
- *When the ice retreats, it exposes the resistant rock.*
- *The rock outcrop has a gentle smoothened upstream side and a steep, rugged downstream side formed is called roche moutonnee.*

(ii) Explain the significance of glaciated features to human activities. (6 marks)

- *Hanging valleys form water falls, which are harnessed for the generation of hydro-electric power.*
- *Features found in glaciated areas attract tourists.*
- *In glaciated highlands, u-shaped valleys floors provide suitable areas for settlement/agriculture/communication routes.*
- *Melting glaciers are sources of rivers which provide water for domestic/industrial/agriculture base.*
- *Alluvial fans/out-wash plains have fertile soils suitable for agriculture.*
- *Fiords provide suitable sites for development of harbours.*
- *Fiords provides sheltered waters suitable for fish breeding. This promotes fishing.*

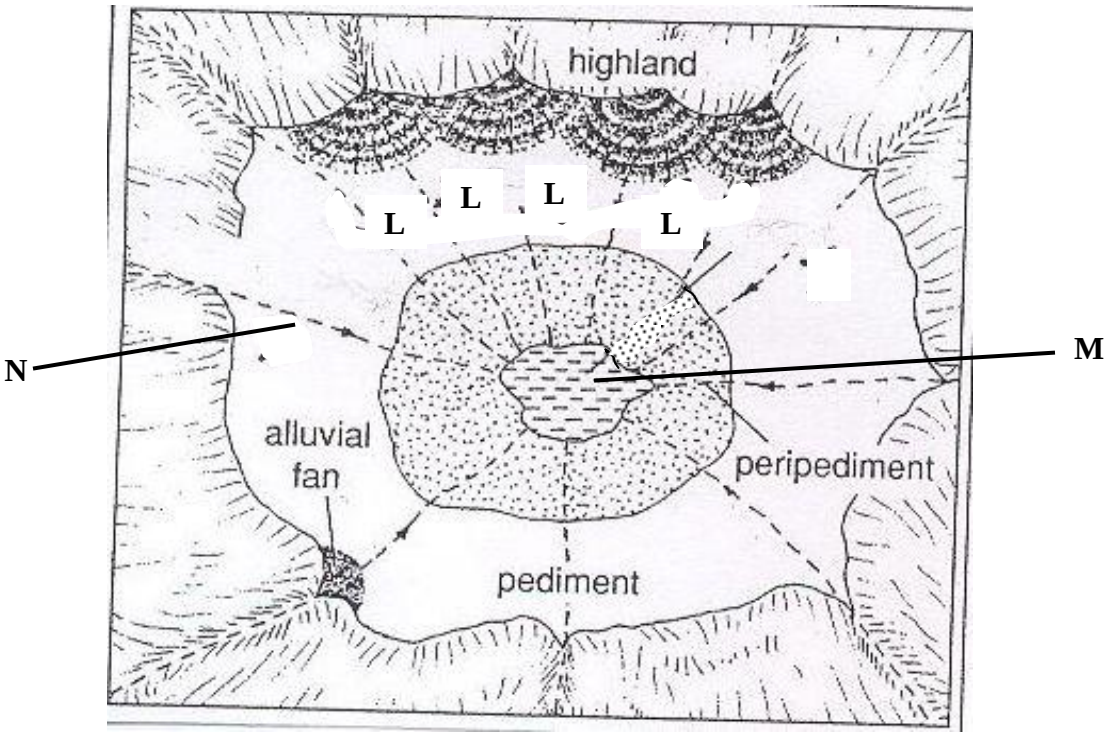
10. (a) Identify ***three*** processes of wind erosion in desert areas. (3 marks)

- *Abrasion*
- *Deflation*
- *Attrition.*

(b) Explain ***three*** factors Influencing wind deposition in arid areas (6 marks)

- *Presence of obstacles such as rocks, bushes and shrubs in the path of prevailing wind creates friction have wind drops some of its load.*
- *Wind carrying too many particles it may lead to some of the load to the deposited*
- *Sudden down pour experienced in deserts may lead to some practices carried by wind & suspended in the air may be washed down and have deposited.*
- *When the strength of wind slackens, there may be deposition of load.*
- *Occurrence of a water surface or a moist ground along a desert landscape leads to friction have deposition of materials.*

(c) The diagram below shows some features found in a desert landscape. Use it to answer the following questions:



(i) Identify the landscape shown in the diagram. (1 mark)

- *Inland Drainage basin in a desert landscape.*

(ii) Name the features marked **L, M** and **N** (3 marks)

X - *Bajada*
Y - *Playa*
Z - *Seasonal Stream*

(iii) Describe how the feature marked **L** is formed.. (4 marks)

- *It is formed when many adjacent alluvial fans/ cones merge together to form a continuous underlaying features composed of coarse sand, - and fine deposits at the foot of slopes, forming a bajada/ bahada sloping to the centre of the basin.*

(d) Explain ***four*** negative effects of deserts to human activities (8 marks)

- *Formation of sand dunes across transport and communication lies makes transportation of goods and people difficult.*
- *Migrating sand dunes may destroy settlements and farm lands causing loss of life and human property.*
- *Scarcity of vegetation and water makes such areas less habitable discouraging human activities*
- *Sudden rainy storms may lead to flash flooding causing destruction of property and loss of human life in settled areas and along the wadis.*