



# KAPSABET HIGH SCHOOL

(Kenya Certificate of Secondary Education) Paper 1



## INTERNAL MOCK EXAM GEOGRAPHY

Dec. 2020– 2 <sup>3</sup>/<sub>4</sub> Hours

### MARKING SCHEME

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#### 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.**
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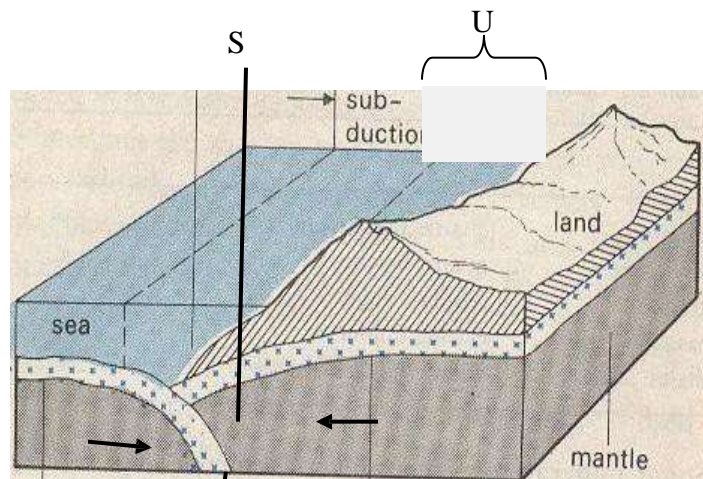
**SECTION A**

Answer *all* the questions in this section.

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

(2mks)

- Full sqs = 5

-  $\frac{1}{2}$  sqs =  $\frac{9}{2} = 4.5$

- Total area =  $5 + 4.5 = 9.5 \pm 0.5 \text{ km}^2$

(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:

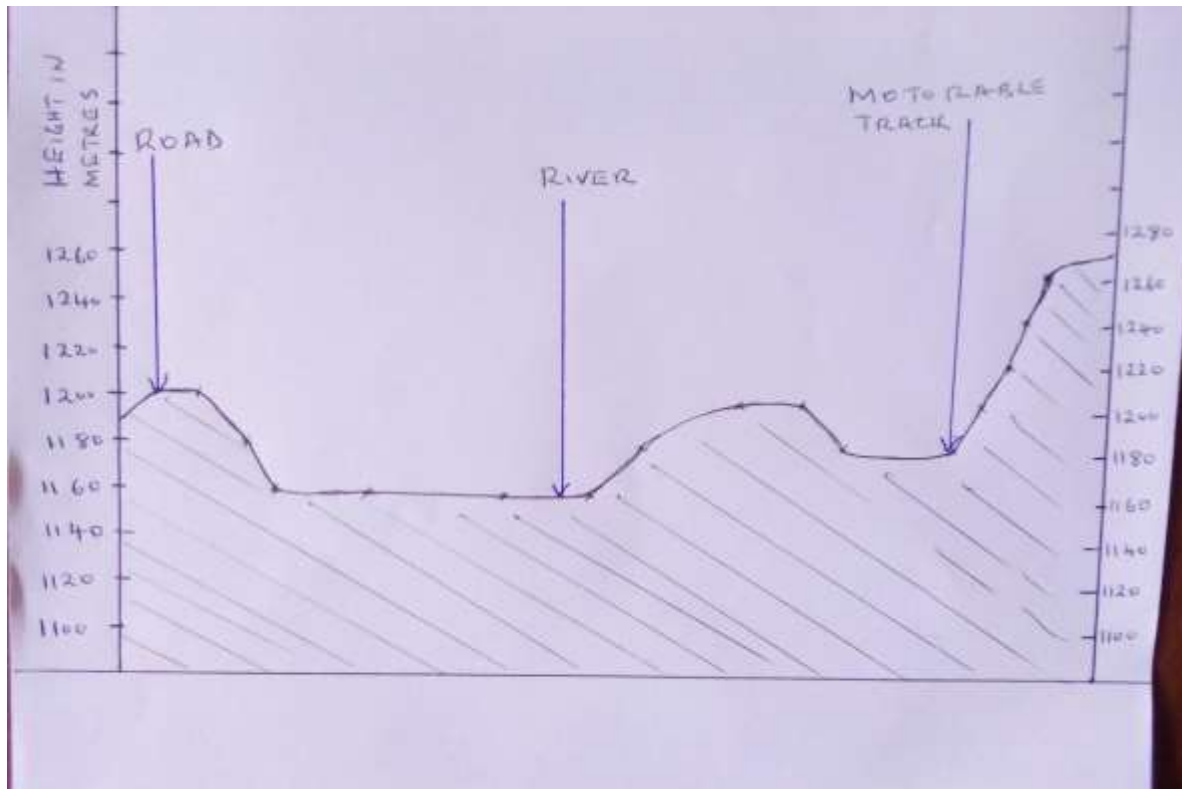
. All weather road:- loose surface

. Indefinite River

. Motorable track

(3mks)

CROSS-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 ( $0^{\circ}$ ), 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*

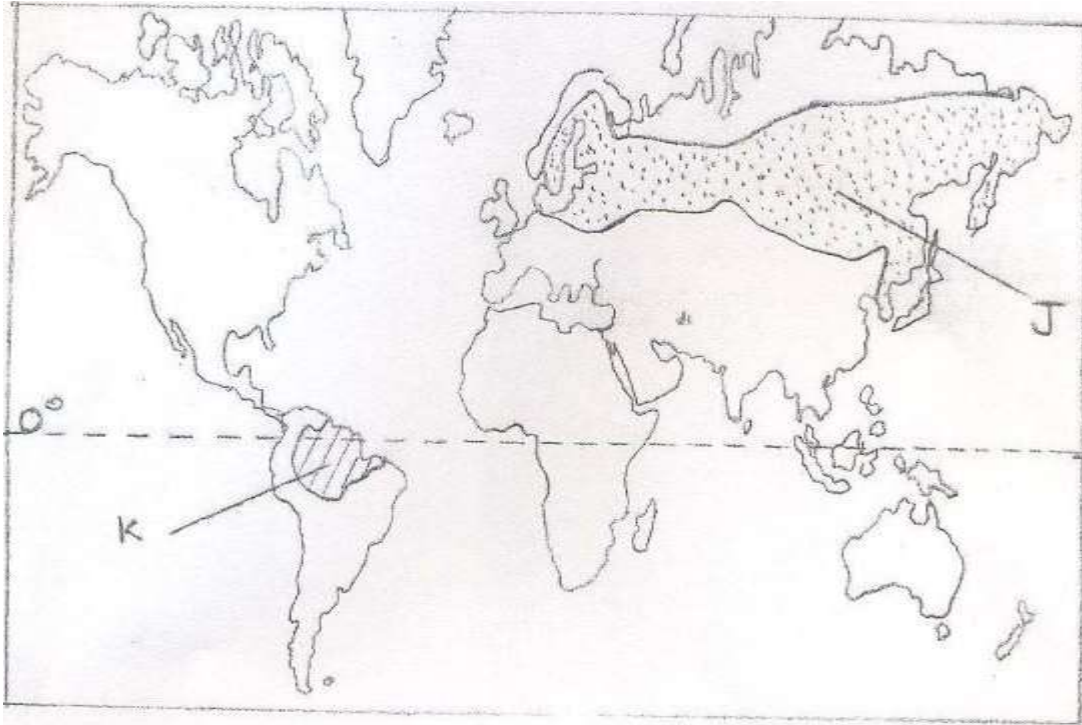
(c) (i) Apart from autumn name three other seasons that occur on the earth (3 marks)

- *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 trees have needle like leaves which help 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 protects 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 root system 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)

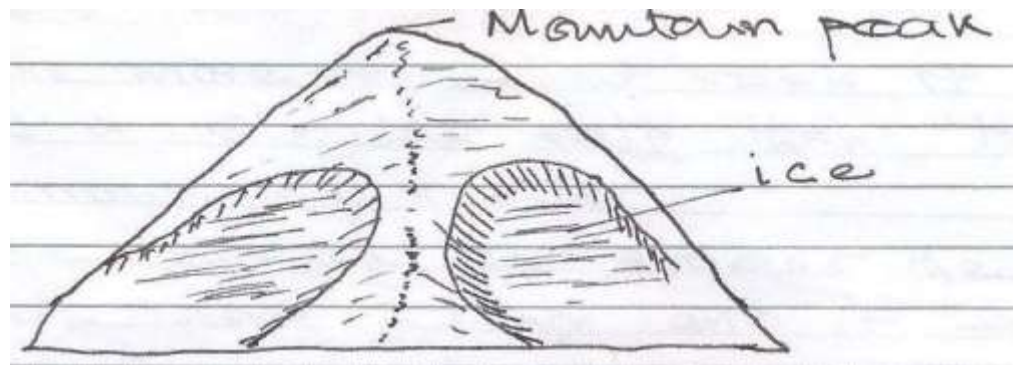
- *A fast moving glacier erodes more than a slow moving glacier because it has more energy.*

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

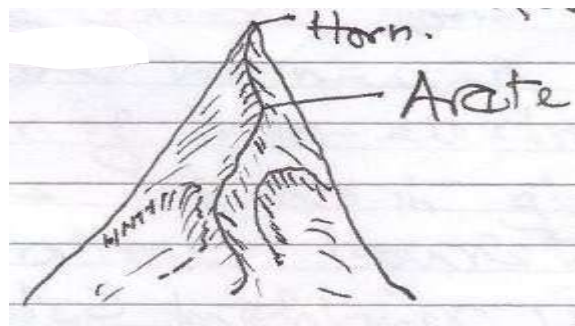
- *Thicker ice is heavier and thus erode the rocks more by abrasion because it exerts more pressure.*



- (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 basins/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 an oncoming 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 smoothed 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.*
- *Fjords provide suitable sites for development of harbours.*
- *Fjords provides sheltered waters suitable for fish breeding. This promotes fishing.*

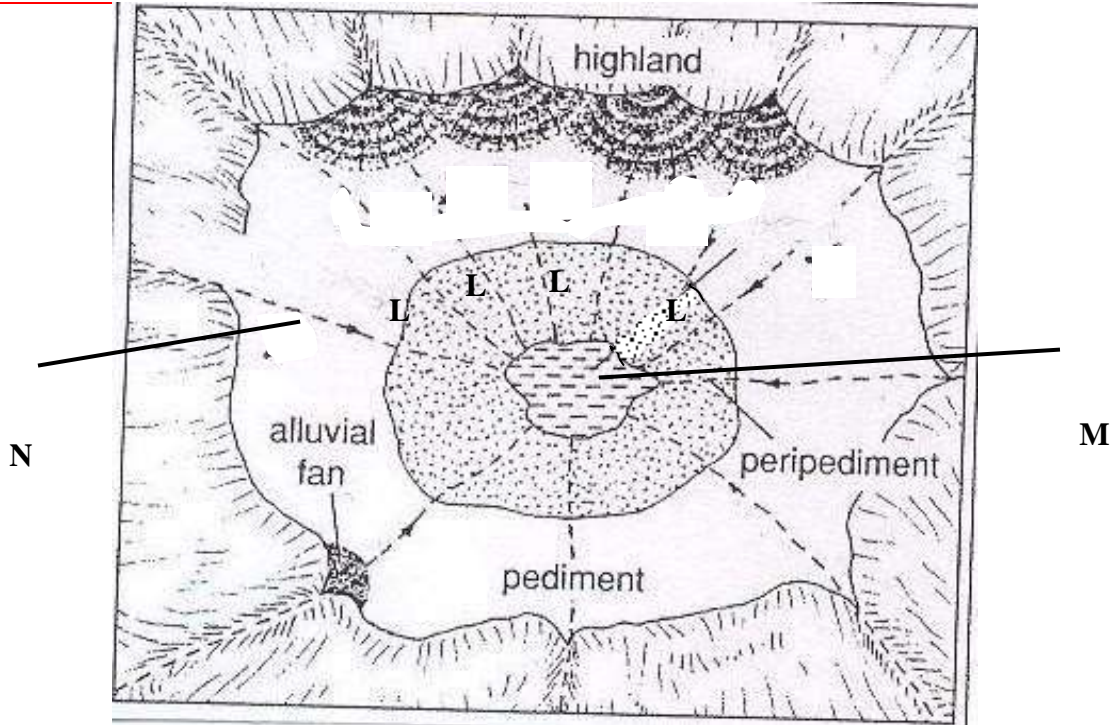
10. (a) Identify **three** processes of wind erosion in desert areas. (3 marks)

- *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 underlying 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.*