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Time : 3 Hours

Max.Marks: 100

Q1

Fill in the blanks.

10 X 1=10

- i) **RADIAL** drainage pattern develops over a conical hill.
- ii) **CENTRIPETAL** drainage pattern develops if the streams are flowing towards lake.
- iii) salt weathering or salt wedging is a type of **PHYSICAL** weathering.
- iv) Yardangs form as a result of **WIND/AEOLIAN** erosion.
- v) Elongated, sinuous ridge deposited as a result of glacial activity is called as **ESKERS**.
- vi) A coastal landforms where a sea arch gets eroded to a vertical pillar like feature, is called as **SEA STACK**.
- vii) A conical depositional feature on the floor of the underground karst cave is called as **STALAGMITE**.
- viii) A **BIFURCATION** ratio is the ratio of number of streams of lower order to number of streams of higher order in a basin.
- ix) A landform having one slope with gentle angle and other with steep angle is identified as **CUESTA**.
- x) An imaginary line joining points of equal elevation is called as **CONTOUR**.

Q1B Define the following:

10 X 1=10

- i) Exfoliation: **a type of physical weathering involving formation of sheets due to weathering**
- ii) Caldera lake: **a lake formed within the caldera**
- iii) Tephra: **a combined term used for pyroclastic material comprising of ash, lapilli and tuff.**
- iv) Lahars: **Volcanic ash/mud flows which move along the flanks of a volcano after eruption**
- v) Ventifacts: **Smooth multi faceted pebbles , result of an aeolian erosion.**
- vi) Bajada: **The coarser sediment is deposited to form alluvial fans, which may coalesce to form complex sloping plains known as bajadas**

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- vii) **Arete: A sharp edge ridge like feature which is result of a glacial erosion.**
- viii) **Hogback: Ridge like landform having slope of equal gradient on either side.**
- ix) **Projected profile: combined profiles of the landform where only highest most of each profile are marked.**
- x) **Mesa: A flat top table land, where the length of the top is more than that of the height of the landform.**

Q2 Answer any **Two** of the following.

10X 2 = 20

- a) Write a note on various types of volcanoes.  
**Types of Volcanoes: Cinder cones, Scoria cone, Strato-volcanoes, Shield volcanoes, Composite volcanoes.**
- b) Write a note on formation of corestones, rills and duricrust.  
**Corestones- unweatherd rocks in a soil proifiles,**  
**Rills- small rivulets which ultimately contribute to the fluvial streams**  
**Duricrust: chemicals precipitated in soils and sediments forming hard layers.**
- c) Give an account of relationship between drainage patterns and lithology/structure citing suitable examples.  
**Example include dendritic, trellis , rectangular, radial, annular, centripetal, centrifugal, distributary drainage patterns and their associated lithology or structures.**
- d) Describe various types of methods used in dating of materials.  
Four categories are recognized:  
**numerical-age methods-**  
**calibrated-age methods-**  
**relative age-methods-**  
**correlated age method**

Q3 Answer any **Two** of the following.

10X 2 = 20

- a) Describe various types of aeolian erosional landforms.  
**Yardangs, Hamada, Zeugens-Mushroom rocks, Deflation Hollows and Pans**
- b) Write a note on various glacial depositional landforms.  
**Moraines types- Medial, Ground, Blanket, Recessional Drumlins, Eskers,**
- c) Describe various types of poljes formed in karst landforms.  
**Border, Structural and Base level Polje**
- d) Write a note on various coastal depositional landforms.

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**Beach, Spit Barrier, Tombolo, Recurved spit**

Q4. Answer any **Two** of the following.

10X 2 = 20

- a) Differentiate between spur and saddle. Draw and explain their topographic profiles.  
**Give the differentiation and draw appropriate diagram.**
- b) Write a note on various types of landform profiles used in topography.  
**Superimposed, Projected and Composite Profile.**
- c) Describe various types of a stream ordering schemes with suitable examples.  
**Three types- Strahler, Shreve, Scheidegger**
- d) Explain the relationship between the storm hydrograph response and various basin shapes.  
**Give the variation of hydrograph as the shape of the basin changes**

Q5 Answer any **Four** of the following.

4X5=20

- a) Landforms associated with acidic volcano  
**Tholoids, Coulee, Upheaved Plug etc.**
- b) Meandering streams  
**Formation and factors contributing**
- c) Parabolic and barchan dunes  
**Labelled diagram showing direction of wind and shapes.**
- d) Dolines and its types  
**Suffossion, Solution, Alluvial Stream sink,**
- e) Drawback of any stream ordering scheme  
**The areas which directly contribute to the higher order are not considered.**
- f) Any two laws of drainage basin geometry  
**Any two laws out of eight laws.**

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