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Q.P. Code: 63844

Programme No. 3A00141 / F.Y.B.A. / Sem - I Choice Base
Subject ID and Paper ID - 81042

Q.1. Answer any **Two** of the following questions.

(a) Write characteristics of igneous rocks.

Meaning - igneous rocks are also called as primary rocks as all other types of rocks evolved from igneous rocks. Igneous rocks are formed after solidification of molten rock (lava) on or beneath the earth surface.

Types - intrusive and extrusive, Acidic lava and basic lava

(b) Critically examine Wegner's theory of continental drift.

Background of the theory - Wagner as plant scientist who found evidences of similar kinds of plants species in different continents which led to conceptualization of continental drift.

The theory - pangaea and panthalasa - drift (laurasia and gondwana - present world)

Evidences - jig saw fit, similar species, fossils, migration of birds

Critics - incomplete evidences, no sufficient explanation on some anomalies

(c) Write a note on "structure of earth's interior".

Earth's interior - direct and indirect sources of information about earth's interior

Three layers - crust, mantle and core

Crust - sial and sima, mantle - upper mantle and lower mantle, core - upper core and nife.

Q.2. Answer any **Two** of the following questions.

(a) Explain the process of folding and discuss different types of folds.

Forces responsible for formation and destruction of the landscape -

Mountain building forces - lateral / horizontal movements

Folding and faulting, Anticline and syncline

Types of Folding - symmetric, asymmetric, recumbent, overturn, isoclinal, angular, fan shaped

(b) Discuss different types of volcanic eruption.

Major processes operating during volcanic eruption.

Intrusive and extrusive

Extrusive - central type, fissure type

Intrusive - batholiths, lacolith, sill, sheet, dykes

Types on the basis of frequency of occurrence

(c) Name the types of seismic waves and write a note on intensity of earthquakes.

Seismic waves - primary (P) waves, secondary (S) waves and surface (L) waves

Measurement of intensity of earthquakes - Richter scale, seismometer

Mecali's classification based on earthquake intensities.

Q.3. Answer any **Two** of the following questions.

(a) Define weathering. Explain process of mechanical weathering.

Weathering as the process by which hard rock converts to soil.

Effects of weathering - soil formation, accelerates the rate of erosion by other agents.

Types of weathering – mechanical, chemical and biological

Mechanical weathering - role of temperature and humidity in mechanical weathering

- frost and thaw process, - expansion and contraction of rocks due to change in temperature, onion pilling, - in situ weathering, - granular disintegration, joint disintegration.

(b) Discuss erosional landforms caused by rivers.

Work of river – erosion, transportation and deposition

Stages of river – youth, mature and old stage

Factors affecting erosivity of river – slope, discharge, nature of rock, amount of traction, suspended and dissolved load etc.

Landforms associated with erosion of river – gorge, v shape valley, rapids, waterfall, potholes.

(c) Explain depositional landforms of glaciers.

Factors determining rate of deposition by glaciers – slope, length of the glacier, amount of snowfall, nature of rock etc.

Depositional landforms of the glacier – moraines – lateral moraine, middle moraines and end moraine, kames, drumlins, eskers, kames, outwash plains.

Q.4. Answer any **Two** of the following questions.

(a) Explain major landforms associated with wind erosion.

Factors controlling wind erosion – wind velocity, amount of sand lifted, sand grain size, landscape dissection (topography) etc.

Erosional landforms of wind – mushroom rock, zeugen, yardang, inselberg

(b) Explain erosional landforms caused by sea waves.

Erosion by sea waves – Sea cliff and recession of sea cliff, base of the sea cliff is abraded by sea waves leading to the formation of wave cut platform. Excessive erosion of sea wave attack at the base of the sea cliff often leads to the formation of sea caves (diagrams).

(c) Briefly describe the landforms caused by groundwater.

Ground water as agent of erosion,

Karst landforms – blind valley, stalactite and stalagmite, sink holes, limestone caves and pillars.

Q.5. Answer any **Two** of the following questions.

(a) Define contour. Explain characteristics of contours.

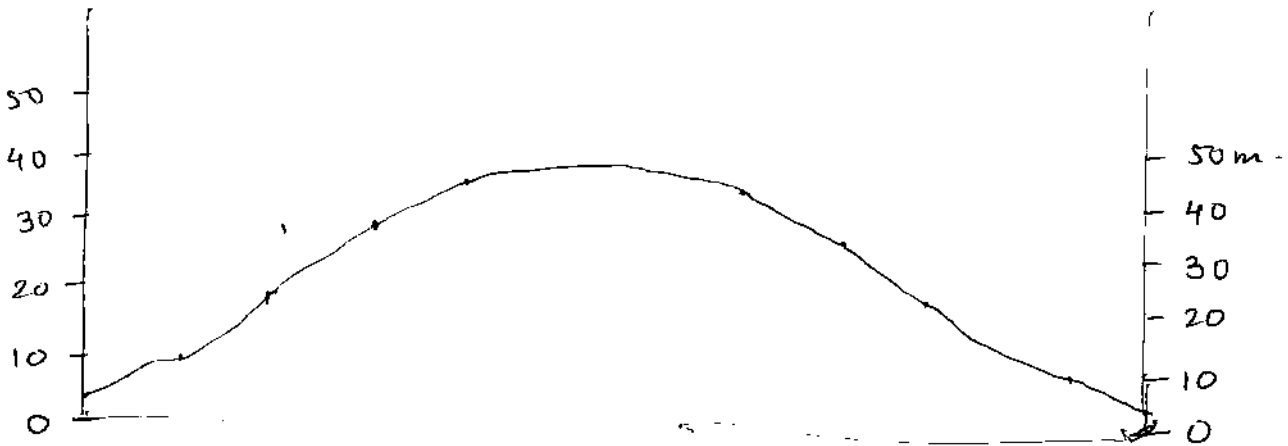
The elevation above mean sea level is commonly measured in meters. The elevation of any place above sea level is marked on the topographical maps in three ways – spot height, benchmark, trigonometric points.

Contours are the lines connecting places at same elevations above mean sea level.

Characteristics – 1. Contours never intersect, 2. The difference in elevation of two consecutive contours are same everywhere. This is called as contour interval, 3. Contours closer to each other represent steep slope whereas those farther from each other represent gentle slopes, 4. Contours of different elevations come together at cliff.

(b) Draw cross section on line 'A – B' and identify the landform. (Appendix – I).

Q. 5 (b)
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Q. 5. (c)

Distance Between P & Q = 5.0 cm

Difference in the Elevation = 40 m - 10 m

$$\boxed{VI = 30 \text{ m}}$$

HE = 5 cm (scale = 1:1000 m)

$$= 5 \times 1000 \text{ m}$$

$$\boxed{HE = 5000 \text{ m}}$$

$$G = \frac{VI}{HE} \times 100 = \frac{30}{5000} \times 100 = \frac{3}{5} = \boxed{0.6\%}$$

Q. 5. (d) - Intervisibility - The contour map depicts contours of different elevations ASL. Intervisibility exists when the value (elevation) of the contours between the two contours are less.

