3 (Sem–5/CBCS) GLG HC 2

2023

GEOLOGY

(Honours Core)

Paper : GLG–HC–5026

(Geomorphology)

Full Marks : 60

Time : Three hours

The figures in the margin indicate full marks for the questions.

1. Tick (✓) the correct option 1×7=7

(i) Consider the following two statements :

A. Material movement in the lunar surface is confined to mass movement.

B. The transporting agents of water, wind and ice are not active in the lunar surface.

Which of the following is correct ?

(a) Statement *'A'* is correct but *'B'* is wrong.

(b) Statement 'B' is correct but 'A' is wrong.

(c) Both the statements are correct and 'B' is explanation for 'A'.

(d) Both the statements are correct but neither explains the other.

(ii) Which of the following is not true?

(a) The geoid is a reference surface of gravity equipotential.

(b) Geoid is an important reference surface for geomorphic process.

(c) Ultimate base level is represented by the geoidal projection of mean sea level under the subaerial landscape.

(d) Mean sea level is uniform across the earth without undulations.

(iii) Based on global hypsometry, the mean altitude of land is

(a) ~823m

(b) 3729m

(c) 1823m

(d) 1000m

(iv) The primary source of energy that drives the earth's surface geomorphic processes is :

(a) rotational energy of the earth

(b) solar energy

(c) gravitational energy

(d) tidal energy

(v) The submarine extension of a continent is called :

(a) continental slope

(b) continental rise

(c) continental shelf

(d) continental platform

(vi) The concept of 'peneplain' is explained by :

(a) Penk's uplift-denudation model

(b) King's pedeplanation model

(c) Davisian cycle of erosion

(d) Budel etchplanation model

(vii) Which of the following minerals is the most unstable in the weathering series ?

(a) Biotite

(b) Hornblende

(c) Quartz

(d) Olivine

2. Briefly answer the following : 2×4=8

(a) Why aeolian landforms are abundant on Mars ?

(b) What are the major morphological and structural elements of the Himalaya ?

(c) What are the submarine erosional and depositional landforms ?

(d) Define moraine and drumlin.

3. Write short notes on : ***(any three)*** 5×3=15

(a) The hydrological cycle

(b) Fluvial landforms in Brahmaputra valley

(c) Drainage pattern and their geological significance

(d) Landforms associated with faulting

(e) Volcanic landforms

4. Answer the following : 10×3=30

A. Explain the processes of weathering and their associated landforms.

Or

Define mass movement and safety factor. Briefly describe different types of mass movement.

B. Write an account on the Aeolian erosional and depositional landforms.

Or

Explain with examples the landforms associated with convergent and divergent plate margins.

C. What are evidences of seal level changes? Explain the causes and effects of Quaternary sea level changes.

Or

Write a comparative account of the 'Davisian cycle of erosion' and the "King's model of landform development".

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