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3 (Sem-2/CBCS) GLG HC 2

2023

GEOLOGY

(Honours Core)

Paper : GLG-HC-2026

(Structural Geology)

Full Marks : 60

Time : Three hours

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

1. Answer the following questions : $1 \times 7 = 7$

(a) What is synformal-anticline fold geometry?

(b) What do you mean by 'Incremental Strain'?

(c) Why geological mapping of a terrane is important?

(d) What are the primary and secondary planar structures generally occur in nature?

Contd.

- (e) What do you mean by 'Oblique strike-slip' movement along a fault surface?
- (f) What is 'effective stress'?
- (g) What do you mean by non-plunging inclined fold geometry?

2. Answer the following : 2×4=8

- (a) Define the structure and surface topography in case of 'Domes and Basins' in any region.
- (b) What is brittle deformation and what are the naturally occurring materials normally found as products of this deformation?
- (c) Show the differences in between cylindrical and non-cylindrical fold geometries with stereonet projections.
- (d) What are the differences in between a fault zone and shear zone?

3. Write short notes on **any three** of the following : 5×3=15

- (a) Structural features and stereographic projections

- (b) Rheology and rock's deformation
- (c) Mesoscopic and microscopic structural features
- (d) Correlation of mineral lineation with a strain ellipsoid
- (e) Geomorphology related to 'Oblique compression' and 'Oblique extension'

4. Answer **any three** of the following questions : 10×3=30

- (a) How the structural geology impacts on geomorphology as a case study from NE of India?
- (b) What is strain and how it can be determined from a deformed rock?
- (c) Explain different fold geometries based on their fold axle and axial plane orientations.
- (d) What do you mean by thrust and what are the thrust imbricate structures normally occur in Eastern Himalaya?

- (e) How the fault rock's behaviour changes from surface towards depth within a fault zone ?
- (f) What are the different types of shear zones generally occur in nature ?