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Name:

Reg.No:

EIGHTH SEMESTER M.Sc. INTEGRATED GEOLOGY DEGREE EXAMINATION, APRIL 2025

(CBCSS)

(Regular/Supplementary/Improvement)

CC20 GLO8 IB16 - ADVANCED STRUCTURAL GEOLOGY

(Geology)

(2020 Admission onwards)

Time : Three Hours

Maximum : 80 Marks

Credit: 4

Section A

Answer any *ten* question. Each question carries 2 marks.

1. Elastic and plastic behaviour.
2. How to find out stretching of a 15 km wide oceanic rift zone by 8 cm per year.
3. Name any two tools used in geological mapping.
4. What are the major classes of folds by Donath and Parker.
5. Fold symmetry of a fold.
6. What are superposed folds?
7. Explain strikeslip of fault.
8. Discuss fault trace and cut-off line.
9. Discuss crush breccia.
10. Discuss the importance of joints.
11. Name two common types of gravity-induced structures.
12. Why is an equal-area projection preferred over an equal-angle projection in structural geology?

(10 × 2 = 20 Marks)

Section B

Answer any *five* question. Each question carries 8 marks.

13. Various Types of Stress Acting on Rocks.
14. Describe the major Folding mechanisms of rocks.
15. Describe the distribution of strain in the hinge and limb regions of a fold. Provide suitable sketches.
16. Describe the geometry of shear zones and explain sub-parallel, diverging, and converging margins.

17. Explain the sequence of thrusting. Describe in-sequence thrusting, out-of-sequence thrusting, and piggyback thrusting.
18. Explain joints and fractures. Discuss their characteristics and differences.
19. Describe blended unconformity. How does it form, and what are its characteristics?

(5 × 8 = 40 Marks)

Section C

Answer any *two* question. Each question carries 10 marks.

20. Write a detailed note on Flinn Diagram and its application in strain analysis.
21. Define dip isogon and discuss the relationship between strain, curvature, and layer thickness in Ramsay's classification of folds with neat sketches.
22. Explain how faults influence rock deformation and landscape evolution. Discuss structural indicators (mylonite, breccia, silicification), physiographic criteria (offset streams, ridges, scarps), and folding associated with faulting.
23. Discuss the importance of petrofabric analysis in understanding rock deformation.

(2 × 10 = 20 Marks)
