(6 pages)

S.No. 9323 **22 SCCGL 2**

(For candidates admitted from 2022-2023 onwards)

B.Sc. DEGREE EXAMINATION, NOVEMBER 2022.

Part III — Geology — Major

STRUCTURAL GEOLOGY

Time : Three hours Maximum : 75 marks

SECTION A — (20 marks)

Answer ALL questions.

I. (A) Multiple choice questions : (5 × 1 = 5)

1. If on a geological maps, contour lines run parallel to contact lines, the beds are

(a) Horizontal (b) Vertical

(c) Inclined (d) None of the above

2. Form of igneous rock where magma is injected and cooled along planes of host rocks is ————————

(a) Discordant bodies

(b) Concordant bodies

(c) Parallel bodies

(d) Synchronous bodies

3. When the rock layers bend downwards, they form a ————————

(a) Limbs

(b) Syncline

(c) Anticline

(d) Cliff

4. Which of the following is not a component of a fault in crustal rocks?

(a) Protruding wall

(b) Anticlinal axis

(c) Discontinuous dip

(d) Footwall

5. Lineation is more commonly expressed by minerals ————————

(a) Mica (b) Feldspar

(c) Tourmaline (d) Hornblende

(B) Fill in the blanks. (5 × 1 = 5)

6. On a flat topography the outcrop width of a bed is 30 m. If the true dip of the bed is 30°, the actual thickness of the bed in meters is ————————

7. The type of concordant body whose thickness is much smaller than its length and width is _____

8. The two sides of a fold are called its _____

9. There are two end-member varieties of faults: dip-slip and strike-slip. The displacement along a strike-slip fault is _____ to the strike of the fault.

10. Crenulation cleavage is also known as _____

II. Answer ALL the questions: (5 × 2 = 10)

11. Define Contour.

12. Define Salt domes.

13. Define Inlier.

14. What is meant by rift valleys?

15. Define Schistosity.

SECTION B — (5 × 5 = 25)

Answer ALL the questions, choosing either (a) or (b).

16. (a) Compare and contest between ductile deformation and brittle deformation (discuss processes and products of each).

Or

(b) Recognition of the top of the bed by using topographic contour-Explain.

17. (a) Primary stores of Sedimentary rocks-Explain.

Or

(b) Write a detailed note on Salt domes with appropriate diagrams.

18. (a) Write a note on the following:

(i) Flexure fold

(ii) Synclinorium

(iii) Chevron fold

(iv) Recumbent fold

Or

(b) Write a note on the stages of development of an unconformity. Add a note on Disconformity.

19. (a) Write a note on the criteria used for the recognition of faults in the field.

Or

(b) What are Faults? Explain Rotational and Translational movement along the fault with a neat sketch.

20. (a) Define and describe different types of foliations.

Or

(b) Explain the mechanism and uses of the clinometer with an appropriate sketch.

SECTION C — ($3 \times 10 = 30$)

Answer any THREE questions.

21. Elucidate the following:

(a) Stress and strain relationships

(b) Preparation of topographic maps to represent physiographic features.

22. Explain the following :

(a) Batholith

(b) Dyke

(c) Chonolith

(d) Stock

(e) Cone sheets

23. Give a detailed note on Drag folds their formation and utility elucidation of major earth structures.

24. Write an explanatory note on Translational and Rotational movement along the fault.

25. What are lineations? Explain the formation of primary lineations.

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