22I701 (Pages: 2) Name: .....

Reg.No: .....

SEVENTH SEMESTER M.Sc. INTEGRATED GEOLOGY DEGREE EXAMINATION, NOV. 2025

(CBCSS)

(Regular/Supplementary/Improvement)

CC20GLO7IB12 - ADVANCED CRYSTALLOGRAPHY AND MINERALOGY

(Geology)

(2020 Admission onwards)

Time : Three Hours Maximum : 80 Marks

Credit: 4

(Draw neat sketches, wherever necessary)

Section A

I. Answer in one or two sentences. Answer any ***ten*** questions. Each question carries 2 marks.

1. Point groups.
2. Primitive and Non-primitive unit cell.
3. Napier's theorem.
4. Find the retardation of quartz wedge with thickness of 0.056 mm thick.
5. Symmetrical extinction.
6. Apparent optic angle, 2E.
7. Electron probe Micro analyzer.
8. Metals and sub-metals as native elements.
9. Rutile.
10. Witherite.
11. Barite.
12. Chrysotile group.

(10 × 2 = 20 Marks)

Section B

II. Write short notes on any ***five*** of the following. Each question carries 8 marks.

13. Describe the role of rotational symmetry in the classification of crystal systems.
14. Uniaxial indicatrix and its uses.

15. Determination of optic sign in biaxial minerals.

16. Various processes of radioactivity.

17. Classification of minerals on the basis of chemistry.

18. Covellite group.

19. Major transition zones within the Earth.

(5 × 8 = 40 Marks)

Section C

III. Write long essay on any ***two*** of the following. Each question carries 10 marks.

20. Write an essay on Schoenflies notation.

21. Write an essay on Biaxial interferene figures.

22. Differentiate between ICPAES and ICPMS.

23. Write an essay on the structure and paragenesis of major minerals of single chain silicates.

(2 × 10 = 20 Marks)

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