

S.No. 5434

16 SCCGL 5

(For candidates admitted from 2016-2017 onwards)

B.Sc. DEGREE EXAMINATION, APRIL 2022

Part III – Geology – Major

CRYSTALLOGRAPHY AND OPTICAL MINERALOGY

Time : Three hours

Maximum : 75 marks

PART A — (10 × 2 = 20)

Answer ALL questions.

1. Define unit cell.
2. Law of constancy of angle.
3. Define double refraction?
4. What are the non-silicate minerals?
5. Concept of symmetry elements?
6. Define lattice and space group?
7. Write five uniaxial minerals
8. Short notes on birefringences.

9. What is extinction angle?
10. Define Miller indices

PART B — ($5 \times 5 = 25$)

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

11. (a) Explain double refraction methods.

Or

- (b) Define the law of rational indices and miller's indices.

12. (a) Explain liquid immersion method.

Or

- (b) Short notes on Twinned crystals.

13. (a) Define minerals due to recrystallization:

Or

- (b) Define parameters, indices and symbols.

14. (a) Define refraction and reflections of polarized light.

Or

- (b) What is the relation between velocity, wavelength, and frequency for light?

15. (a) Write an optical properties of rock forming minerals.

Or

- (b) Elements of symmetry and crystallographic angles.

PART C — ($3 \times 10 = 30$)

Answer any THREE questions.

16. Principals of petrological microscope and draw the diagram and explain how it's worked

17. Define repeated twinning, polysynthetic and symmetrical and its examples.

18. Write an essay on hexagonal system and add notes on normal classes of hexagonal system.

19. Explain about plane polarized light and uses of Nicol prism.

20. Explain the general twinning laws and its classes and systems, examples of minerals