

Roll No. ....

Total Pages : 2

**CMDE/M-24**

**4716**

**MINERALOGY, INSTRUMENTATION AND  
ANALYTICAL TECHNIQUES**

Paper–G–201

Time Allowed : 3 Hours]

[Maximum Marks : 75

**Note** : Attempt **five** questions in all, selecting **one** question from each Unit. Question No. **1** is compulsory. All questions carry equal marks.

**Compulsory Question**

1. Write short notes on the following :

- (a) Stereoscopic projection in crystals.
- (b) Uniaxial minerals.
- (c) Chemical properties of Carbonate minerals.
- (d) Electron microscopy.

**UNIT–I**

- 2. What are the different types of crystal morphology?
- 3. (a) Twinning in crystals.  
(b) Weiss and Miller indices.

**UNIT–II**

- 4. Describe the Extinction phenomenon in minerals with examples.
- 5. (a) Order of Interference colors.  
(b) Optic sign.

**UNIT–III**

- 6. Discuss about the Physical, Chemical and Optical properties of Pyroxene minerals.
- 7. (a) Structure of Cyclo-silicate minerals.  
(b) Mode of occurrence of Zircon.

**UNIT–IV**

- 8. What are the techniques of Photomicrography?
- 9. (a) Modal count techniques.  
(b) ICP-MS.