

**H-55019**                      Seat No. \_\_\_\_\_  
**M. Sc. (Part -I) Examination**  
April / May – 2003  
**Geology**

Time : 3 Hours]

[Total Marks : 100

**Instructions :** (1) Draw **neat** diagrams wherever **necessary**.  
(2) Your answer should carry the same number as per question paper.

1. State the important rock forming mineral families and describe the 20 pyroxene group of minerals with reference to atomic structure, chemical composition, optical characters, condition of formation and distribution in rock types.

**OR**

1. Write notes on :- (1) Zeolite family, (2) Sorosilicates and phyllosilicates, 20  
(3) Zoning in minerals.  
2. Explain interference figures. Describe typical interference figures and 20  
optic sign determination of biaxial minerals.

**OR**

2. Discuss :- (1) Optic axis interference figures of uniaxial minerals, 20  
(2) Pleochroic scheme of uniaxial minerals, (3) Biaxial indicatrix.  
3. Define the term optic orientation and describe it with reference to 20  
mineral crystals of different systems.

**OR**

3. Explain :- (1) Dispersion in orthorhombic crystals, (2) Flash figure, 20  
(3) Immersion method of R. I. determination, (4) Melatopes.  
4. Write an illustrative account of space lattices. Comment on the 20  
importance of the study of lattices in crystallography.

**OR**

4. Write explanatory notes :- (1) Atoms, ions and ionic radii, (2) X – ray crystal 20  
structure of NaCl, (3) Percussion figures and etch marks.  
5. Discuss :- (1) Twinning in monoclinic and triclinic crystals, (2) Normal 20  
symmetry classes, (3) Point groups.

**OR**

5. Write critical notes on :- (1) Development of trigonal prisms and pyramids 20  
from holohedral forms, (2) Hemimorphic classes, (3) Crystal projections.