M.Sc. (Geology) (NEP Pattern) Semester-I

NEP-51 / PSCGEOT01 - Paper-I : Mineralogy and Crystallography

P. Pages : 2 **GUG/S/25/15103**

Time : Three Hours * 2 7 4 7 * Max. Marks : 80

Notes : 1. All questions carry equal marks.
2. Draw neat diagrams wherever necessary.

1. Describe in detail scanning electron microscope.

OR

Write notes on the following.

a) Double retraction.

b) Interference figures.

c) Pleochroism.

d) Radioactive properties of minerals.

2. Give a brief account of polymorphism and types of polymorphic transformations.

OR

Write notes on the following.

a) Isomorphism.

b) Paragenesis of gypsum.

c) Psedomorphism.

d) Calculation of mineral formulae.

3. Give an account of olivine group of minerals by giving their general formulae, classification, atomic structure, chemistry and paragenesis.

OR

Write notes on the following.

a) Mica group.

b) Serpentine group.

c) Scapolite group.

d) Garnet group.

4. Give axial and symmetry elements of galena class of cubic system and describe its forms with millerian indices.

OR

Give an account of the following.

a) Axis of symmetry.

b) Axial and symmetry elements of zircon type symmetry.

c) Twinning.

d) Axial ratio.

5. Write brief notes on the following.

a) Anisotropic substances.

b) Becke line effects.

c) Co-ordination numbers.

d) Bonding in minerals.

e) Epidote.

f) Aragonite.

g) Plane of symmetry.

h) Basal pinacoid.

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