

Roll No. :

Total No. of Questions : 11]

[Total No. of Printed Pages : 3

BPP-1087

M.Sc. (Previous) Examination, 2022

GEOLOGY

Paper - II

(Geochemistry, Crystallography and Mineralogy)

Time : 3 Hours]

[Maximum Marks : 75

Section-A

(Marks : 2 × 10 = 20)

Note :- Answer all *ten* questions (Answer limit **50** words). Each question carries **2** marks.

Section-B

(Marks : 5 × 5 = 25)

Note :- Answer all *five* questions. Each question has internal choice (Answer limit **200** words). Each question carries **5** marks.

Section-C

(Marks : 10 × 3 = 30)

Note :- Answer any *three* questions out of five (Answer limit **500** words). Each question carries **10** marks.

Section-A

1. (i) Define Geochemistry.
- (ii) What are Stable Isotopes ?
- (iii) Define Crystal Symmetry.

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- (iv) What is X-ray Crystallography ?
- (v) Define Birefringence.
- (vi) Define Interference Figure.
- (vii) Define Twinning.
- (viii) What is Mineral Alteration ?
- (ix) Write optical properties of Quartz.
- (x) Differentiate the Calcite and Dolomite.

Section-B

2. Discuss Radioactive Decay.

Or

Discuss Carbon Isotopes.

3. Discuss Spherical Crystal Projections.

Or

Discuss the laws of Crystallography.

4. Discuss about Extinction Angle.

Or

How to differentiate between Biaxial and Uniaxial Interference Figure ?

5. Discuss the chemical composition, physical and optical properties of Olivine Group.

Or

Discuss the Sorosilicates.

6. Discuss the physical and optical properties of Feldspathoid Group.

Or

Discuss the Phyllo-silicates.

Section–C

7. Discuss the isotopes of Oxygen and Hydrogen.
8. Discuss the axes, class, symmetry and forms of Tetragonal System.
9. Discuss the important properties of minerals under polarized light.
10. Discuss the chemical composition, physical and optical properties and mode of occurrence of minerals of Pyroxene Group.
11. Discuss the gem minerals with their properties and varieties.