

**M.Sc. (Part-I) Semester-I (C.B.C.S. Scheme) Examination**  
**GEOLOGY**  
**(Geochemistry and Analytical Techniques)**  
**Paper-III**

Time : Three Hours]

[Maximum Marks : 80

**Note :—**(1) All questions are compulsory and carry equal marks.

(2) Draw neat sketches wherever necessary.

1. Write in brief on the following :

- (a) Origin of the Earth.
- (b) Abundance of elements in the Earth.

**OR**

- (c) Atomic Structure.
- (d) Periodic Table.

2. Describe in brief the Geochemical Classification of the Earth.

**OR**

Explain in detail the radioactive decay scheme of U-Pb.

3. Write in brief on the following :

- (a) Radiometric dating single mineral.
- (b) Nature of stable Isotopes.

**OR**

- (c) Growth of daughter isotopes.
- (d) Concept of free energy.

4. Write in brief on the following :

- (a) Principles of ionic substitution.
- (b) Concept of biogeochemical Exploration.

**OR**

- (c) Eh-pH diagrams.
- (d) Element partitioning in mineral and rock formations.

5. Describe in detail about the thin section and polished section making.

**OR**

Principles and geological applications of X-ray diffraction.

