

M. Sc. GEOLOGY SECOND SEMESTER

**Paper - II**  
**202**

**Geochemistry**

**Code: Geol**

UNIT – I

Introduction to atomic structures, periodic table and properties of elements including trace and REE. Basic principles of crystal chemistry, radius ratio, co-ordination number and co-ordination polyhedron; Silicate structures; Isomorphism, polymorphism, solid solution and exsolution.

UNIT – II

Earth in relation to solar system and universe; Introduction to meteorites and planets; Cosmic abundance of elements; Structure and composition of earth and distribution of elements; Geochemical classification of elements.

UNIT – III

Partition coefficient and elemental variation during crystal-liquid fractionation; Geochemistry of atmosphere, hydrosphere and biosphere; Geochemical cycle.

UNIT – IV

Fundamentals of isotope geochemistry; Radiogenic and stable isotopes and their geological applications.

UNIT – V

Introduction to thermodynamics; Gibbs energy and equilibrium; Gx and Tx diagrams; Fundamentals of mole fraction and activity co-efficient; Ideal and non-ideal solutions.