

M. Sc. GEOLOGY FOURTH SEMESTER

**Paper –I  
401**

**Metamorphic Petrology**

**Code: Geol**

UNIT – I

Agents and kinds of metamorphism; metamorphic zones; grades; iso-grades; metamorphic facies; Fabric of metamorphic rocks formed under regional, dynamic and thermal metamorphisms; Classification of regional metamorphism based on P/T ratio.

UNIT – II

Principles of thermodynamics; Mineralogical phase rule; Diagrammatic representation of mineral paragenesis in: ACK, AKF and AFM diagrams; thermodynamics and kinetics of metamorphic reactions.

UNIT – III

Studies of metamorphic facies: zeolite facies; pumpellyite-prehnite facies; glaucophane schist facies; greenschist facies; amphibolite facies; granulite facies, eclogite facies; albite-epidote hornfels facies; hornblende-hornfels facies; pyroxene-hornfels facies; sanidine facies.

UNIT – IV

Principles of metasomatism and metamorphic differentiation; petrogenetic grids; pressure, temperature, time paths; mineralogical and textural changes accompanying progressive regional metamorphism of mafic, ultramafic, pelitic and carbonate rocks.

UNIT – V

Anatexis and formation of migmatites and origin of granitic magma; petrographic and petrogenetic studies of charnockite, migmatite and amphibolite; metamorphism in relation to magma and orogeny; metamorphism in relation to plate tectonics.

