

IV-SEMESTER

Paper-IV- Metamorphic Petrology and Structural Geology

Unit-I

Definition of metamorphism, agents of metamorphism, types of metamorphism, grades and Zones, of metamorphism. Metamorphic minerals - stress and antistress minerals. Structures of metamorphic rocks - Cataclastic, maculosc, schistose, granulose and gneissose. Textures of metamorphic rocks- crystalloblastic, xenoblastic.

(12 hrs)

Unit-II

Classification of metamorphic rocks Cataclastic metamorphism of argillaceous and arenaceous rocks. Thermal metamorphism of argillaceous, arenaceous and calcareous rocks. Dynamo thermal metamorphism of argillaceous, arenaceous and igneous rocks. Plutonic metamorphism, metasomatism. Descriptive study of the following metamorphic rock- Gneiss, schist, slate, phyllite, quartzite, marble, Clirianockite and khondalite.

(12 hrs)

Unit-III

Definition of structural geology, aim and objectives of the structural Geology; Importance of study of structures, primary and secondary structures; outcrop, attitude of beds - strike, dip and apparent dip. Use of clinometer and Brunton compass. Folds -description, nomenclature of folds - Geometrical and genetic classification. Recognition of folds in the field.

(12 hrs)

Unit-IV

Joints- Classification of Joints- geometrical and genetic classification. Faults – geometrical and Genetic Classification of faults, recognition of faults in the field, effects of faults on the outcrops.

(12 hrs)

Unit-V

Unconformities- Definition of unconformity- types of unconformities. Recognition of unconformities in the field. Distinguishing the faults from unconformities. Definitions of overlap, outlier, cleavage, schistosity, foliation and lineation

(12 hrs)

Signature of the Chairman / Chairperson:

Signature of the Members :


13/12/16

Text books

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|-------------------------------------|---|------------------------|
| 1. The principles of petrology | - | G. W. Tyrrell: |
| 2. Metamorphic petrology | - | B Bhaskar Rao |
| 3. Structural Geology | - | Marlarid. F. Billings. |
| 4. An outling of structural Geology | - | E.S. Hills |

Reference

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|---|---|----------------|
| 1. <i>Petrology of Igneous
and Metamorplic rocks.</i> | - | <i>Hyndman</i> |
| 2. Structural Geology | - | L.U. De Setter |
| 3. An outline of structural Geology | - | E.S. Hills |

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