SYLLABUS
B.Sc. II
GEOLOGY
SEMESTER-IV

Paper-I
(Sedimentary Petrology and Metamorphic Petrology)

Unit –I  Definition –Sedimentology and Sedimentary petrology. Processes involved in the formation of sedimentary rocks : Weathering, transportation, deposition, consolidation, lithification and diagenesis. Sedimentary textures, structures and mineralogy of sedimentary rocks. Concept of sedimentary facies.

Unit-II  Classification of sedimentary rocks : Residual, clastic, chemical and organic sedimentary deposits.

Unit-III  Definition of metamorphism. Agents, kinds and products of metamorphism. Structures, textures and classification of metamorphic rocks.

Unit-IV  Basic concepts about grade, zones and facies of metamorphism. Metamorphism of pelitic, acidic, basic and calcareous rocks. Metasomatism- Definition, metasomatic processes, granitisation and migmatisation with suitable Indian examples.

Books Recommended :
SEMESTER IV
Paper-II
(Indian Stratigraphy)

Unit-I
Geological time Scale. Methods of Collecting stratigraphic data. Principles of Stratigraphy. Stratigraphic Classification: Lithostratigraphic, Chronostratigraphic and biostratigraphic Units, Stratigraphic Correlation. Physical and structural subdivisions of Indian subcontinent and their characteristics. Classification, Geographic distribution, lithological characteristics and economic importance of Dharwar Supergroup of Peninsular India and associated granitic rocks.

Unit II
Classification, geographic distribution, lithological characteristic, and economic importance of the following:- Sausar Group, Sakoli Group, Dongargarh Supergroup, Aravalli Supergroup and associated gneissic rocks, Iron Ore Group. Cuddapah Supergroup of Cuddapah basin, Kaladgis, Pakhals, Penganga Formation, Delhi Supergroup, Shimla Formation. Vindhyan Supergroup of Vindhyan basin, Kurnool Supergroup, Chattisgarh Supergroup.

Unit III
Classification, geographic distribution, lithological characteristics, fossil content and economic importance of the following: Palaeozoic succession of Spiti valley, Gondwana Supergroup. Triassic of Spiti. Jurassic of Kutch, Rajasthan and Spiti.

Unit IV
Classification, geographic distribution, lithological characteristics, fossil content and economic importance of the following: Cretaceous of Narmada valley, Trichinopoly, Spiti and Lameta Formation. Deccan traps. Tertiary of Assam and coastal areas of India. Siwalik Group. Karewa Formation of Kashmir. Stratigraphy of Maharashtra

Books Recommended:
Indian Stratigraphy:
5) Ramkrishnan and Vaidhyanadhan: Geology of India, Volume I and II, Geological Society of India, Bangalore

PRACTICALS

PETROLOGY:

Microscopic study of the following rock types:

**Igneous Rocks:**
Granite, Granodiorite, Diorite, Anorthosite, Lamprophyre, Porphyries, Gabbro, Norite, Dolerite, Diabase, Peridotite, Dunite, Pyroxenite, Obsidian, Pitchstone, Pumice, Trachyte, Andesite, Phonolite, Tuff, Basalt, Rhyolite, Charnokite

**Megascopic and microscopic Study of the following rock type:**

**Sedimentary Rocks:**
Conglomerate, Breccia, Grit, Arkose, Graywacke, Arenite, Sandstone, Shale, Clay, Marl, Limestone, Bauxite, laterite, Agglomerate, Tufa, Chert, Coal.

**Metamorphic Rocks:**
Hornfels, slate, phyllite, Schist, Gneiss, Granulite, Amphibolite, Quartzite, Marble, Khondalite, Gondite, Kodurite, Mylonite, Eclogite.

FIELD WORK:

Every Student Should attend field work for one week duration and submit field notes, geological specimens and a report. The field work shall be treated as a part of practical examination of Semester IV and is Compulsory and shall be assessed by teacher and Head of the Department. Marks are assigned on field work.