

## **DEPARTMENT OF GEOLOGY**

### **SYLLABUS FOR THE ENTRANCE TEST OF FYUG PROGRAMME**

Origin of the Earth, major internal structure (crust, mantle and core), age of the earth. Geological time scale. Earthquake: Definition, cause, effect, waves scale of measurement. Weathering and erosion of rocks, different types of weathering, Geological action of running water. Wind – Geological action of winds. Landforms of Aeolian origin, Mountain: its types and mode of formation. Physiographic features of the ocean floor. Composition of sea water, Composition and thermal structure of the atmosphere, Volcano: its types, products, causes, effects and distribution. Landslides :its causes and preventive measures.

Chemical bonding, Cosmic abundance of elements, Abundance of elements in the solar system, The periodic table. Definition of a mineral and its major physical and optical properties.

Dip and strike of rock strata, elements of fold, types of fold (anticline, syncline, symmetrical, asymmetrical, recumbent isoclinal). Fault : elements of fault, types of faults (normal, reverse, horst, graben, thrust), Unconformities: definition and types (angular U.C. disconformity and non conformity).

Rocks: its definition and classification (igneous, sedimentary and metamorphic), their distinguishing characters.

Igneous rocks: Forms of igneous rocks. Differentiation of magma. Texture and structures of igneous rocks. Texture : Porphyritic, Poikilitic, Ophitic, Coarse, Fine and Glassy. Structures : columnar, flow, pillow, vesicular, sheet, amygdaloidal. Classification of igneous rocks on the basis of texture, mineralogical composition and colour.

Sedimentary rocks: Texture and structure of sedimentary rocks. Processes of formation of sedimentary rocks.

Metamorphic rocks: Definition, agents and types of metamorphism.

Principles of stratigraphy : Principle of Uniformitarianism; principle of order of superposition; principle of cross-cutting relationships, principle of truncation; principle of original horizontality.

Precambrian and Mesozoic stratigraphy of India. Tertiary stratigraphy of India with emphasis on its lithology, paleontology and economic importance.

Definition of ore. Elementary idea of the processes of formation of mineral deposits. Origin and mode of occurrence of coal and petroleum.

Ground Water : Definition, elementary idea of hydrologic cycle, porosity and permeability, water table, Confined and unconfined aquifers, vertical distribution of water in the Earth's crust.

Fossil : Definition and mode of preservation. An outline of the important forms of life (plant and animal) through geological ages.