1. Geotectonics, Geomorphology and Remote Sensing


2. Structural Geology, Stratigraphy and Paleontology


3. Mineralogy and Economic mineral deposit


Controls of Mineral Localisation, Metallogenic epoch and provinces, Classification of mineral deposit, Precious metals, nonferrous metals iron and ferro-alloy metals, Mineral fuels, ceramic minerals, structural and building materials, metallurgical and refractory materials, fertilizer minerals, abrasive minerals, gemstones. Mineral deposit of India

4. Igneous and Metamorphic and Sedimentary Petrology

Forms, textures and structures of igneous rocks. Petrology and geotectonic evolution of granites, basalts, andesites and alkaline rocks. Petrology of gabbros, kimberlites, anorthosites and carbonatites.

Textures and structures of metamorphic rocks. Regional and contact metamorphism of pelitic and impure calcareous rocks. Mineral assemblages and P/T conditions. Characteristics of different grades and fades of metamorphism. Metasomatism and granitization, migmatites. Plate
tectonics and metamorphic zones. Paired metamorphic belts.


5. Hydrogeology and Environmental Geology


Theory of groundwater flow, Darcey's Law and its applications, Types of wells, drilling methods, construction, design, development and maintenance of wells, specific capacity and its determination. Groundwater quality - physical and chemical properties of water, quality criteria for different uses, graphical presentation of water quality data, groundwater quality in different provinces of India - problems of arsenic and fluoride, Saline water intrusion in coastal and other aquifers and its prevention.

Natural hazards- preventive/precautionary measures- floods, landslides, earthquakes, river and coastal erosion. Impact assessment of anthropogenic activities such as urbanization, open cast mining and quarrying, disposal of industrial and radio-active waste, excess withdrawal of ground water, use of fertilizers, dumping of ores, mine waste and fly-ash. Organic and inorganic contamination of ground water and their remedial measures. Soil degradation and remedial measures. Environment protection-legislative measures in India.

NOTE: - It may be noted that apart from the topics detailed above, questions from other topics prescribed for the educational qualification of the post may also appear in the question paper. There is no undertaking that all the topics above may be covered in the question paper.