

**M. Sc. (Previous) Environmental Sciences
Semester I**

Paper-III

NATURAL RESOURCES AND THEIR CONSERVATION

Unit I

Natural resources and their classification, biosphere reserves, nature conservation and its importance in national economy. Human use of surface and ground water. Environmental impact of resource exploitation; Resources of oceans and their conservation; Mineral resources and their conservation

Unit II

Types of energy resources: conventional and non conventional energy resources; Renewable and non-renewable energy resources, commercial and non commercial energy demand; Fossil fuel classification, composition, energy content of coal, petroleum and natural gas; Principles of generation of hydroelectric power, tidal power, thermal energy conversion, wind, geo thermal energy, solar collectors, photovoltaics, solar ponds, oceans.

Unit III

Nuclear energy- fission and fusion, bio energy -energy from biomass and biogas, anaerobic digestion, energy use patterns in different parts of the world; energy conservation policies. Impacts of large scale exploitation of solar, wind, hydro and ocean energy.

Unit IV

Biomass fuel types: solid fuels, liquid fuels, gaseous fuels; biomass fuel conservation devices; management of information on biomass fuels; Concept of environmental sustainable technology; Sun as the source of energy, solar radiation and its special characteristics.

Unit V

Economic and environmental perspectives of energy demand, Energy conservation, energy from Refuse; Studies of biomass fuels; availability of biomass fuels in India: Organic residues, energy plantation, carbohydrate crops, petro crops, energy weeds.

