

Name of Specialization: Environmental Engineering

No. of Question: 50 (Objective Type)

Duration: 1 Hr. 30 Min

Maximum Marks:50

**Water Treatment:** Importance of water, water demand, design flow, design periods, design population, factors affecting water consumption, variation in water demand, quality of water: water quality parameters, water quality requirements, various water treatment methods, method of distributing water, distribution reservoirs, distribution system, distribution system components, capacity and pressure requirements.

**Wastewater Treatment:** Quality parameters, standards of disposal into natural watercourses and on land, collection systems of sewerage, components of sewerage systems, systems of layout, hydraulic design of sewers, construction and testing of sewer line, sewer materials, joints and appurtenances, sewage pumping and pumping stations, maintenance of sewerage system, various methods of sewage treatment, wastewater disposal and reuse.

**Air and Noise Pollution:** Air quality, emission standards, vehicular pollution, effect of air pollution on human health, air pollution modeling, control of gaseous pollutants, noise Pollution, global effect of air and noise pollution, greenhouse effect, acid rain etc.

**Solid Waste Management:** problems associated with solid waste disposal, goals and objectives of solid waste management, classification of solid waste, onsite handling, storage and processing, solid waste collections, transfer and transport, processing and disposal methods, recovery of resources, conversion, products and energy, industrial solid waste: nature, treatment and disposal methods.

**Hydrology:** evaporation and infiltration, hydrograph analyses, unit hydrograph, fundamentals of ground water flow, Darcy's law, ground water development and ground water pollution.

**Industrial Waste Water Treatment:** Comparative study of industrial waste water with municipal waste water, industrial waste water problems in India, salient feature of water act-1974, air act 1981 and environmental (protection) act 1986, specific industrial treatment processes, neutralization, equalization and proportioning, volume and strength reduction, flow sheet of industrial waste

waters generated from various industries.

**Environmental Impact Assessment:** Concepts of EIA, prediction and assessment of impacts on air, water, biota, noise, cultural and socio-economic environment, air quality impact, methods of assessment, litigation of impact, water quality impact, effects of noise on people, cultural and socio-economic

impacts, EIA of hydro, thermal and nuclear power plants, methodologies for EIA, preliminary assessment, quantification.