

# AMEV20 ENVIRONMENTAL INSTRUMENTATION

## UNIT-1 GENERAL

- 1.1 Study of machinery, electric motors types and characteristics, other prime covers, pumps, capacity, operation and maintenance of pumping machinery,
- 1.2 Air compressors preventive maintenance, break-down maintenance, schedules – Factors to be considered in the selection of the equipment's.

## UNIT-2 INSTRUMENTATION

- 2.1 pH meter - Flame Emission Spectrometry. Absorption spectrometry Nephelometry
- 2.2 Atomic Absorption Spectrometry- Gas chromatography- working principle and components.
- 2.3 Total carbon analyser- Mercury Analyser polar graph for metal estimation and organic compounds - Ion selective Electrode -SO<sub>2</sub> and CO analyzer
- 2.4 Instrument components and its working principle.

## UNIT-3 WATER SUPPLY MACHINERY AND WASTEWATER MACHINERY

- 3.1 Drilling equipment, pumping equipment for wells.
- 3.2 Machinery required for primary and secondary treatment, sewage pumps, sludge pumps, vacuum filtration equipment.

## UNIT-4 EQUIPMENTS FOR TREATMENT UNITS

- 4.1 Equipment for treatment unit- electrically and mechanically operated agitators,
- 4.2 Mixers, aerators, chlorinators, Surface aerators.
- 4.3 Meters for measurement of flow, head, electricity.

## UNIT-5 AIR POLLUTION CONTROL EQUIPMENTS

- 5.1 Working principles of electrostatic precipitator- cyclone separators- settling chamber- operation and Maintenance.
- 5.2 Machinery for solid waste collection and disposal incineration- compactors- magnetic separators- incinerators.

### Reference Books:

1. Course Manual on Preventive Maintenance of Water Distribution System, NEERI, 1-73.
2. Standards Methods for the Examination of Water and Waste Water, 17th Edition, WPCF, APHA and AWWA, USA, 1-8.