

CC - VI : INSTRUMENTATION ANALYSIS

UNIT – I: VISIBLE, UV AND IR SPECTROSCOPY

Electromagnetic spectrum - Spectroscopic principles instruments - Fundamentals-Visible, UV and IR radiation sources Monochromators - Filters – Prism- Grating types - Detectors - various types of instruments - Applications in industry

UNIT – II: X- RAYS AND LASER

X-ray production - Instruments – Medical equipment Laser principle - Different types - Applications – Fibre optics and its applications

UNIT – III: RAMAN AND NMR SPECTROSCOPY

Principles of NMR - Description of NMR spectrometer - Types - Applications - Raman spectra - Applications

UNIT – IV: GAS CHROMATOGRAPHY AND MASS SPECTROMETRY

Gas chromatographic principle - Description of the instruments – Applications Mass spectrometer principle - Description of the instrument - Magnetic deflection and time of flight methods - Electrophoresis – Principle – Instruments - Applications

UNIT - V: ANALYZING INSTRUMENTS

Saccharimeter - pH meters – Conductivity cell – Oxygen analyzer - Polarimeter

BOOKS FOR STUDY AND REFERENCE

1. Instrumental methods of chemical analysis – B.K. Sharma - Goel Publishing House - Meerut
2. Instrumental method of analysis - Willard, Merrit, Dean and Settle – CBS Publishers and Distributors - Delhi