

SARDAR PATEL UNIVERSITY
Programme: B.Sc (Instrumentation-Vocational)
Semester: VI
Syllabus with effect from: June - 2013

Paper Code: US06CINV04	Total Credit: 3
Title of Paper: Spectroscopy & Biomedical Instrumentation	

Unit	Description in detail	Weightage (%)
I	Electromagnetic Radiation, Beer Lambert Law, Absorption Instruments, Radiation Sources, Monochromators, Detectors: Photovoltaic, Photo Emissive, Single & Double Beam Photometers, Sources of Errors in Spectrophotometer.	25%
II	Components of IR Spectroscopy: Radiation Sources, Monochromators, Slits, Mirrors, Photoconductive Cells, Thermal Detectors: Thermocouple, Bolometer, Pneumatic, Pyroelectric, Optical Null Method, Sample Handling.	25%
III	Sources of Biomedical Signals, Basic Medical Instrumentation System, Body Temperature Measurement Transducers, Optical Fiber Sensors for Medical Field, Methods of Cell Counting, Coulter Counter, Errors in Electronic Counters.	25%
IV	Biopotential, Electrocardiogram (ECG), Electroencephalogram (EEG), Electromyogram (EMG), Blood Pressure Measurement.	25%

Basic Text & Reference Books:

- Handbook of Analytical Instruments, R. S. Khandpur, Tata McGraw-Hill.
- Instrumental Methods of Chemical Analysis, Gurdeep R. Chatwal & Sham Anand, Himalaya Publishing House.
- Handbook of Biomedical Instrumentation, R. S. Khandpur, Tata McGraw-Hill.
- Biomedical Instrumentation and Measurements, Leslie Cromwell, Fred J. Weibell & Erich A. Pfeiffer, Prentice Hall of India.

