

Biomedical Instrumentation - III

B.E. Sem. VII [BIOM]

EVALUATION SYSTEM

	Time	Marks
Theory Exam	3 Hrs.	100
Practical & Oral Exam	–	–
Oral Exam	2 Hrs.	50
Term Work	–	25

SYLLABUS

- 1. Physiotherapy, Electrotherapy and Radiation Therapy Equipments**
Basic principle, working and technical specifications of Shortwave Diathermy, Ultrasonic therapy unit, Infrared and UV lamps, Nerve and Muscle Stimulator, Radiation and Physical therapy Units.
- 2. Surgical Instruments**
Surgical Diathermy machine, electrodes used with surgical diathermy, safety aspects in electronic surgical units, surgical diathermy analyzers.
- 3. Cardiac Pacemakers**
Modes of operation, leads and electrodes. Power supply sources. External and Implantable Pacemaker, Performance aspects of Implantable Pacemaker.
- 4. Cardiac Defibrillators**
DC defibrillator, Modes of operation and electrodes, Performance aspects of dc-defibrillator, defibrillator analyzers. Implantable defibrillator and defibrillator analyzer.
- 5. Hemodialysis Machine**
Basic principle of Dialysis. Different types of dialyzer membrane, Portable type.
- 6. Laser Applications in Biomedical Engineering**
Laser Classifications, Types of Lasers, Medical Applications, Laser Delivery Systems.
- 7. Heart rate variability measurement and applications**

Reference Books

1. Encyclopedia of Medical Devices and Instrumentation (*J G. Webster*) Vol I,II,III,IV PH Pub.
 2. Various Instruments Manuals
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