

**Academic Year** : 2017-2018  
**Department** : ECE Year/Semester  
: III –II Semester AB  
**Subject** : BIO-MEDICAL

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**Unit-1** a) What is a man instrument system along

b) Components involved in the man instrument system.

2. Discuss about the various Physiological systems of the body

3. Discuss the various problems encountered in living system

4. a) What are the Sources of Bioelectric Potentials?

b) Explain the resting and action potentials of a cell.

5. Explain the bioelectric Potentials-

a) ECG

b) EEG

c) EMG.

1. a) Explain the Electrode theory

b) Explain the different active and passive transducers

**Unit-2**

2. a) Explain various 4types of Biochemical transducers

b) What are the Applications of Biochemical Transducers?

3. Explain different types of Bioelectric Electrodes

4. Explain about the basic transducer principles.

5. a) Explain the Transducers for Biomedical Applications.

b) Explain the Pulse and Respiration Sensor

**Unit-3**

1. Explain the analogy of Heart along with the cardiovascular system.

2. a) Explain the Electrocardiography

b) Explain the blood Pressure measurement

3. a) Explain the measurement of blood flow

b) Explain Plethysmography

4. a) Explain the Physiology of the respiratory System

5. Describe the various Respiratory therapeutic Equipment

#### **Unit-4**

1. Explain the Elements of Intensive Care Monitoring
2. Describe the Diagnosis ,Calibration and reparability of patient care monitoring
3. a) What is a Defibrillator  
b) Describe the use and different defibrillators
4. a) Describe the different pacing modes of a pacemaker  
b) Describe the laparoscope technique
5. What is Diathermy? Explain the Different types of Diathermy

#### **Unit-5**

1. a) What are the principles of Ultrasonic measurement?  
b) What are the ultrasonic applications of therapeutic uses?
2. a) discuss about the various implantable units  
b) Explain how telemetry can be used for measurement of ECG during exercise.
3. a) Discuss about MRI  
b) Mention the applications of MRI
4. a) Describe the CAT scan  
b) Write the applications of CAT scan.
5. Explain the Principle involved in the X-ray System

#### **Unit-6**

1. a) Explain about the various physiological effects.  
b) Give examples of the physiological effects of electric current
2. a) what are Biopotential amplifiers? Explain  
b) What are the applications of biopotential amplifiers?
3. a) what are the various Shock Hazards from Electrical Equipment  
b) Give a brief note on methods of accident Prevention
4. Explain the Isolated Power distribution system
5. a) Explain the monitors involved in the Biopotentials measurement  
b) Explain the monitors involved in the Biopotentials measurement