

Code No: 126BB**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B.Tech III Year II Semester Examinations, May - 2016****BIOMEDICAL EQUIPMENT-II****(Bio-Medical Engineering)****Time: 3 hours****Max. Marks: 75****Note:** This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A.

Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART - A**(25 Marks)**

- 1.a) Write a note on classification codes for pacemakers. [2]
- b) Discuss various types of power sources used for Pacemakers. [3]
- c) Write a note on different membranes used for haemodialysis. [2]
- d) Give the principle of IABP. [3]
- e) Write a note on Lung compliance and airway resistance. [2]
- f) Discuss the terms Fulguration, Desiccation and Homeostasis mode. [3]
- g) What are the types of waveforms required for electrodiagnosis? [2]
- h) Discuss the terms Chronaxie, Rheobase and Accommodation. [3]
- i) What is an infusion pump? List different infusion systems? [2]
- j) Write a note on different transducers used in audiometry. [3]

PART - B**(50 Marks)**

- 2.a) Explain the working of ventricular synchronous demand pacemaker with a neat block diagram.
 - b) Write a note on rate responsive pacemakers. [5+5]
- OR**
- 3.a) With neat block diagram explain the working principle and advantages of AED.
 - b) Give the significance of synchronizer circuit in the defibrillator. [5+5]
4. With a neat block diagram explain the working of haemodialysis machine? [10]
- OR**
- 5.a) Discuss the functional details of Blood oxygenators.
 - b) Write a note on portable kidney machines. [5+5]
6. With a neat schematic diagram explain Anesthesia machine in detail? [10]
- OR**
- 7.a) What are the various types of electrodes used with surgical diathermy?
 - b) Discuss various types of hazards associated with the use of electrosurgical units. [5+5]
8. Explain the working of an ultrasonic therapy unit with the help of neat block diagram. Discuss the advantages of ultrasonic therapy. [10]
- OR**
- 9.a) Describe the working of microwave diathermy machine with a neat block diagram.
 - b) Write short notes on Bladder stimulator. [5+5]
10. With a neat block diagram explain the working of Bekesy audiometer. [10]
- 11.a) Write a note on closed loop control in infusion systems.
 - b) Explain the working of drop rate counter type infusion system. [5+5]