Code No: 07A51106 **R07** **Set No. 2**

III B.Tech I Semester Examinations,November 2010
BIOMEDICAL EQUIPMENT
Bio-Medical Engineering

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. Explain the principle , operation and calibration of bio-chemical analyzer? [16]
2. Describe in detail the ink jet recorders with suitable examples. [16]
3. With a neat schematic explain a surgical microscope. [16]
4. (a) What is the principle of Diathermy?
   (b) Bring out the difference between microwave and ultra sound diathermy.[8+8]
5. Explain the oxygenators and its uses, discuss on membrane oxygenators, film oxygenators. [16]
6. Explain multichannel EEG machine with block diagram and what are the various troubleshooting arise in EEG recordings and how do you rectify them? [16]
7. Write short notes on:
   (a) Differential Auscultatory technique.
   (b) Oscillometric measurement method. [8+8]
8. write short notes on
   (a) electric hazards in operation rooms
   (b) patient isolation circuits. [8+8]

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Code No: 07A51106 **R07** **Set No. 4**

III B.Tech I Semester Examinations,November 2010
BIOMEDICAL EQUIPMENT
Bio-Medical Engineering

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. What are nerve stimulators ? Discuss its applications in brief. [16]
2. (a) Explain about Gross shock & Micro current shock?
   (b) Ventricular fibrillation is the serious hazard due to electric shock. Discuss. [8+8]
3. Explain about foetal monitor with a neat sketch. [16]
4. With a neat schematic explain the ink jet recorder. What are its demerits? [16]
5. Explain briefly preamplifier, filters and writing part used in EEG? How is evoked potentials recorded in EEG and discuss various waveforms of EEG? [16]
6. What is Nebulizer? Explain nebulizer system used in anesthetic delivery System? [16]
7. Discuss the differences between the arterial heat exchanger, coronary heat exchanger, settling reservoir of heart lung machine. [16]
8. Explain the principle , operation and calibration of bio-chemical analyzer? [16]

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Code No: 07A51106 **R07** **Set No. 1**

III B.Tech I Semester Examinations,November 2010
BIOMEDICAL EQUIPMENT
Bio-Medical Engineering

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. With a neat schematic explain the function and principle of an incubators. [16]
2. (a) Discuss on the importance of TMT and its uses on the various abnormalities.
   (b) Brief on the procedures applied in TMT measurement. [8+8]
3. Explain the working of heart lung machine taking the example of a thin film membrane type blood oxygenators. [16]
4. (a) Define a 'pacemaker'. What are the types of pacemaker's. Which are available in the market? Compare their performances.
   (b) Discuss the power sources used for Implantable pacemakers. [8+8]
5. Discuss on the various types of precautions to minimise electric shock hazards.[16]
6. What are the various parts of biochemistry analyzers? Explain about them. [16]
7. (a) Discuss on the thermal recorder with suitable figures.
   (b) Explain in detail the photographic recorder suitable for biomedical applications. [8+8]
8. Describe on the various aspects of humidification to protect the patients from infection. [16]

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Code No: 07A51106 **R07** **Set No. 3**

III B.Tech I Semester Examinations,November 2010
BIOMEDICAL EQUIPMENT
Bio-Medical Engineering

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. What is PH? What is the principle of PH measurement? Discuss various types of electrodes used for PH measurement. [16]
2. Discuss on the principle of thermal array recorder with suitable figures. [16]
3. (a) What are the key functions of kidney? Give the various pathological conditions of kidney.
   (b) With block diagram explain membrane oxygenators. Give its important features. [8+8]
4. How do you determine conduction velocity in motor nerves? What is the instrument used for the determination of electrical activity in muscles explain with block diagram? [16]
5. With a neat block diagram explain the apnea monitor. [16]
6. Explain with neat block diagram ventricular synchronous demand pacemaker. [16]
7. Describe on natural protective mechanism and leakage currents in brief with suitable examples. [16]
8. (a) Discuss on artificial ventilation and its uses with suitable figures.
   (b) Describe the positive pressure ventilator with suitable figures. [8+8]

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