

**DHANALAKSHMI SRINIVASAN ENGINEERING COLLEGE
PERAMBALUR
DEPARTMENT OF BIOMEDICAL ENGINEERING**

QUESTION BANK

BM 1353- DIAGNOSTIC AND THERAPUETIC EQUIPMENTS I

UNIT 1

PART A

1. Briefly mention the uses of ECG
2. What is meant by defibrillator?
3. What is a defibrillator
4. Write any 2 advantages of external pacemaker
5. What are the advantages of AC defibrillator over DC defibrillator.?
6. What is a defibrillator?
7. Differentiate internal and external defibrillator?
8. Explain AC defibrillator
9. Explain DC defibrillator with block diagram
10. Explain synchronized dc defibrillator
11. What is a PM?
12. Diff. external and implanted PM
13. What are the different modes of operation
14. Explain ventricular asynchronous PM
15. Differentiate unipolar and bipolar electrodes

PART B

1. With a neat block diagram explain the working of am recording set up
2. Explain the working of D.C. defibrillator with a neat diagram
3. What are the drawbacks of AC defibrillator? Explain the working of DC defibrillator
4. Discuss diff lead configuration used in ECG
5. Explain ventricular synchronous PM
6. Explain ventricular inhibited PM

UNIT 2

PART A

1. Expand EEG and give its medical application.
2. Name the type of lead system used in EEG
3. What is meant by evoked response
4. Mention different rhythms of brain waves
5. Give the origin of brain waves
6. Explain the waves char of EEG
7. Define epilepsy

8. Explain the frequency band of EEG waves

PART B

1. Describe the lead position used in 10-20 electrode system
2. Explain the char features of brain waves
3. Draw the block diagram of an EEG unit to explain the different parts in it
4. Explain genesis of EEG
5. Explain the epileptic discharges

UNIT 3

PART A

1. Draw the structure of muscles
2. Expand EMG and draw the waveform
3. What are the diff types of stimulator waveforms?
4. What is meant by electromyography and electroneurography?
5. What are the muscle stimulators?
6. Draw the structure of muscles
7. Explain sliding theory of contraction
8. What are the electrodes used for obtaining EMG waveforms
9. Diff unipolar and bipolar electrodes

PART B

1. Describe the recording set up used for EMG?
2. Draw the Circuit diagram of Peripheral nerve stimulator and explain it?
3. Explain Different types of Stimulator Waveform
4. Explain the Sliding theory of Contraction

UNIT 4

PART A

1. What are the requirements for blood pump?
2. What are the requirements for oxygenator?
3. Why do we require Heart lung Machine
4. What are the uses of oxygenator in medical field
5. What is priming volume
6. What is the principle of bubble oxygenator?
7. What is the principle of film oxygenator?
8. What is the principle of membrane oxygenator?
9. What is the principle of Li-Li oxygenator?
10. What is a Pulsatile pump
11. What is a Non Pulsatile pump
12. What are the uses of traps and filters in heart lung machine
13. What are the uses of heat exchangers in heart lung machine

PART B

1. Describe the Non Pulsatile type blood pump in detail
2. Explain the working of bubble oxygenator and Li-Li oxygenator with a diagram?
3. Explain the functioning of Roller pump
4. Describe the functioning of Heart lung machine with Block diagram
5. Explain the film and foam oxygenators

UNIT 5

PART A

1. What is a Ventilator
2. What is meant by Pneumograph
3. Name the Instrument used to measure respiratory volume
4. Define TLC
5. Define ERV
6. What is RV
7. What is a Spirometer
8. Define FEV
9. Define Lung capacities

PART B

1. Explain the Lung volumes and capacities
2. Explain Spirometer with a neat diagram
3. Describe a method to determine TLC
4. Draw the Block diagram of a Ventilator with its accessories and explain in detail.