

17672

11819

3 Hours / 100 Marks

Seat No.

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- Instructions :**
- (1) All Questions are *compulsory*.
 - (2) Illustrate your answers with neat sketches wherever necessary.
 - (3) Figures to the right indicate full marks.
 - (4) Assume suitable data, if necessary.

Marks

1. (A) Attempt any THREE : 12
- (a) Differentiate between synchronous and asynchronous pacemaker. (Any 4 points)
 - (b) State the need of defibrillator.
 - (c) State the maintenance steps for ventilator.
 - (d) Draw a neat labelled diagram of central monitor.
- (B) Attempt any ONE : 6
- (a) Draw block diagram of cardioverter and explain it.
 - (b) Describe principle of operation of heart-lung bypass machine with suitable diagram.
2. Attempt any FOUR : 16
- (a) Differentiate between internal and external pacemaker. (Any four points)
 - (b) Explain any one type of dialyzer with suitable diagram.
 - (c) List any four possible faults of ventilator machine & give their possible solution.
 - (d) State the need of bedside monitor.
 - (e) Draw block diagram of haemodialysis machine and describe it.
 - (f) Describe programmable mode of pacemaker with suitable diagram.

- 3. Attempt any FOUR :** **16**
- (a) Describe endocardial and myocardial pacemaker leads with suitable diagram.
 - (b) Explain monophasic and biphasic defibrillation with their current waveforms.
 - (c) List any four technical specifications of ventilator.
 - (d) State the need of central monitor and give its technical specifications.
 - (e) Describe principle of operation of baby incubator with suitable diagram.
- 4. (A) Attempt any THREE :** **12**
- (a) Explain demand mode of pacemaker with suitable diagram.
 - (b) Describe the principle of operation of nebulizer with suitable diagram.
 - (c) State the evolution levels in the control of drug delivery.
 - (d) Draw a neat labelled diagram of anaesthesia machine.
- (B) Attempt any ONE :** **6**
- (a) (i) Describe charging and discharging circuit of DC defibrillator with suitable diagram.
 - (ii) Describe defibrillator electrodes.
 - (b) State the need and any two technical specifications of following machines :
 - (i) Heart – lung bypass machine
 - (ii) Haemodialysis machine
- 5. Attempt any FOUR :** **16**
- (a) Describe atrial synchronous pacemaker with suitable diagram.
 - (b) Describe principle of operation of suction apparatus.
 - (c) Draw block diagram of programmable microprocessor based infusion pump.
 - (d) Differentiate between AC and DC defibrillator.
 - (e) List different types of oxygenators and give its importance in heart lung bypass machine.
 - (f) Describe the concept of apnea.
- 6. Attempt any FOUR :** **16**
- (a) Draw block diagram of ventilator and explain it in detail.
 - (b) Describe rate responsive pacemaker with suitable diagram.
 - (c) Describe the concept of infusion pump.
 - (d) Explain the function of roller pump and heat exchanger used in heart-lung by pass machine.
 - (e) Describe unipolar and bipolar pacemaker leads with suitable diagram.
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