

17672

21718

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.

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|-----------|---|--------------|
| 1. | (A) Attempt any THREE : | 12 |
| | (a) Differentiate between fixed and demand pacemaker. | |
| | (b) Describe the concept of AED. | |
| | (c) List various steps for maintenance of ventilator. | |
| | (d) Draw a block diagram of conventional method and closed loop control drug delivery system. | |
| | (B) Attempt any ONE : | 6 |
| | (a) (i) Describe instant and sync modes in defibrillator. | |
| | (ii) Differentiate between AC & DC defibrillator (any four points). | |
| | (b) Describe heart-lung bypass machine with its suitable diagram. | |
| 2. | Attempt any FOUR : | 16 |
| | (a) Differentiate between endocardial and myocardial leads. | |

- (b) Describe hollow fiber dialyzer with suitable diagram.
- (c) List the possible faults and its solution in ventilator (any four).
- (d) List technical specifications of Central Monitor (any four).
- (e) Describe principle of operation of hemodialysis machine with suitable diagram.
- (f) Differentiate between internal and external pacemaker (any four points).

3. Attempt any FOUR :

16

- (a) Describe atrial synchronous pacemaker with suitable diagram.
- (b) Differentiate between biphasic and monophasic defibrillator.
- (c) List any four technical specifications of ventilator.
- (d) State the maintenance steps carried out for bedside monitor.
- (e) Describe the need of hemodialysis machine.

4. (A) Attempt any THREE :

12

- (a) Describe Rate Responsive pacemaker with suitable diagram.
- (b) Draw block diagram of Suction Apparatus and describe its working.
- (c) List any four possible faults and their solutions in Bedside monitor.
- (d) Draw a labelled block diagram of Nebulizer.

- (B) Attempt any ONE :** **6**
- (a) Draw circuit diagram of charging and discharging sections of DC Defibrillator and explain it.
 - (b) Describe block diagram of baby incubator and also give any four technical specifications of it.
- 5. Attempt any FOUR :** **16**
- (a) Describe programmable pacemaker with suitable diagram.
 - (b) Describe following modes of ventilator :
 - (i) assist
 - (ii) assist/control
 - (c) Draw a neat labelled block diagram of programmable microprocessor based infusion pump.
 - (d) Draw block diagram of cardioverter.
 - (e) Explain the role of oxygenators used in Heart-Lung Machine.
 - (f) Describe the fail-safe system of Anesthesia machine.
- 6. Attempt any FOUR :** **16**
- (a) Describe the concept of Apnea.
 - (b) A patient requires artificial pacing for long period of time. Suggest the type of pacemaker required for the patient. Draw block diagram of it.

- (c) Draw block diagram of Bedside Monitor.
 - (d) Describe the need of following machines :
 - (i) Baby Incubator
 - (ii) Heart-Lung Bypass Machine
 - (e) Describe Unipolar and Bipolar leads of pacemaker.
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