

22548

23124

3 Hours / 70 Marks

Seat No.

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- Instructions :**
- (1) All Questions are *compulsory*.
  - (2) Answer each next main Question on a new page.
  - (3) Illustrate your answers with neat sketches wherever necessary.
  - (4) Figures to the right indicate full marks.
  - (5) Assume suitable data, if necessary.
  - (6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

**Marks**

**1. Attempt any FIVE :**

**10**

- (a) List any two life support equipments.
- (b) List any four critical care instruments used in ICU.
- (c) Explain use of following :
  - (i) Defibrillator
  - (ii) Hemodialysis machine
- (d) State need of baby incubator.
- (e) List the technical specification of ventilator.
- (f) List the parameters measured by bed side monitor.
- (g) State the use of infusion pump.

**2. Attempt any THREE of the following :**

**12**

- (a) Describe the advantage of DC-defibrillator as compared to AC defibrillator.
- (b) Explain the various measurable parameter related to respiratory system.
- (c) Draw block diagram of nebulizer.
- (d) Explain the working operation and use of synchronous pacemaker.



- 3. Attempt any THREE of the following : 12**
- (a) State need of central monitor.
  - (b) Describe the function of programmable microprocessor based infusion pump with sketch.
  - (c) Explain with sketches the working principle of anesthesia machine.
  - (d) Describe charging and discharging section of DC defibrillator with diagram.
- 4. Attempt any THREE of the following : 12**
- (a) Describe pacemaker leads in detail.
  - (b) Distinguish between internal and external pacemaker.
  - (c) Explain concept of NICU.
  - (d) The defibrillator has following problems displayed on its monitor screen, identify the cause and solution for it :
    - (i) Lead off
    - (ii) No paddles
  - (e) Explain need of defibrillator. List types of it.
- 5. Attempt any TWO of the following : 12**
- (a) State the important steps of maintenance of ventilator.
  - (b) Explain working principle of bedside monitor system and need of bedside monitors.
  - (c) A patient requires a pacemaker in which parameters can be operated through external program. Draw block diagram of it and explain it in detail.
- 6. Attempt any TWO of the following : 12**
- (a) Explain need of baby incubator. Draw circuit diagram related to temperature control in baby incubator.
  - (b) Explain :
    - (i) Parallel plate dialyzer
    - (ii) Hollow fiber dialyzer
  - (c) Explain working of heart-lung bypass machine.
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