

22548

**11920**

**3 Hours / 70 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. Attempt any FIVE of the following :**

**10**

- (a) Draw block dia of basic cardiac pacemaker.
- (b) Give concept fibrillation of heart & state need of defibrillator.
- (c) Draw labelled diagram of suction apparatus.
- (d) Draw neat sketches of defibrillator electrodes. (any two)
- (e) List different life support equipments. (any two)
- (f) State need of baby incubator.
- (g) State the application of
  - (i) NICU
  - (ii) ICU

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

**12**

- (a) Give different pacing modes of pacemaker and state the condition of application for each mode.
- (b) List tech specification of DC defibrillator. (any four)
- (c) Draw a labelled spirogram. Also show ideal values of all volumes on spirogram.
- (d) Identify the instrument which is used to monitor various parameters of a patient. Draw block diagram of it.

- 3. Attempt any THREE of the following : 12**
- (a) For kidney failure of any patient, which life supporting equipment is used. Draw it's block diagram.
  - (b) Draw & give function of programmable microprocessor based infusion pump.
  - (c) For emergency cardiac situations occur on airports, railway station etc., which defib is used. Give it's concept in brief.
  - (d) Compare fixed & demand modes of external pacemaker. (any four point)
- 4. Attempt any THREE of the following : 12**
- (a) Compare ac & dc defibrillator. (any 4 point)
  - (b) Give significance of pacemaker leads.
  - (c) Draw & label the block dia of heart lung bypass m/c.
  - (d) State the need of ballon pump in OT.
  - (e) The defibrillator m/c has following problems displayed on its monitor screen. Identify the cause & give solutions for it.
    - (i) Energy not delivered properly
    - (ii) Machine doesn't get on
- 5. Attempt any TWO of the following : 12**
- (a) Give significance of programmable pacemaker. Draw & explain labelled dia. for same.
  - (b) Give working of nebulizer, with neat dia. List applications (any 3) of it.
  - (c) Give steps for maintenance of baby incubator.
- 6. Attempt any TWO of the following : 12**
- (a) Name the instrument which is used to give artificial respiration to patient in ICU. State & explain different modes used in the same device. (any 5 modes)
  - (b) State diff. needs of bedside & central monitor. List tech specifications of bedside monitor (any 4).
  - (c) Choose the following instrument related to NICU and explain it with neat sketch :
    - (i) Heart-lung bypass machine
    - (ii) Hemodialysis machine
    - (iii) Baby incubator
    - (iv) Anaesthesia machine
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