

17672

21819

3 Hours / 100 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) Use of Non-programmable Electronic Pocket Calculator is permissible.
 - (7) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. (A) Attempt any THREE : 12

- (a) Explain different electrodes used in defibrillator. (any two with diagram)
- (b) State the need of respirator.
- (c) Draw the block diagram of internal pacemaker.
- (d) State the concept of balloon pump.

(B) Attempt any ONE : 6

- (a) Explain cardioverter with neat diagram.
- (b) State the preventive maintenance steps of ventilator.

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P.T.O.

- 2. Attempt any FOUR :** **16**
- (a) Differentiate Internal and External pacemaker on the basis of size, cost, need and battery life.
 - (b) Justify Heart-lung machine is called “By-pass Machine”.
 - (c) Give the significance of Boils apparatus in O.T. (Operation Theatre) and list its any four technical specification.
 - (d) Draw the block diagram of programmable microprocessor based infusion pump.
 - (e) Compare AC and DC defibrillator.
 - (f) List any four faults related to ventilator.
- 3. Attempt any FOUR :** **16**
- (a) List any four specification of Incubator.
 - (b) State the concept of biphasic and monophasic defibrillator.
 - (c) A patient requires clear Vomit. Suggest the equipment required for patient and draw its block diagram.
 - (d) State the need of Infusion pump.
 - (e) List any four technical specification of external pacemaker.
- 4. (A) Attempt any THREE :** **12**
- (a) State the meaning of Endocardial and Myocardial leads.
 - (b) Identify the equipment acts as a kidney in dialysis and list its types.
 - (c) Explain the concept of energy analyzer.
 - (d) Draw the block diagram of bedside monitor.
- (B) Attempt any ONE :** **6**
- (a) Explain the atrial synchronous pacemaker with neat diagram.
 - (b) Draw the block diagram of hemodialysis machine and explain it.

5. Attempt any FOUR :

16

- (a) Bedside monitor has following problems. Identify the cause and solution for it.

	Problem	Cause	Solution
1.	Temp not displayed	?	?
2.	ECG	?	?

Waveform not properly display.

- (b) State the concept of assist and control mode of ventilator.
 (c) Define heart block and cardiac arrhythmias.
 (d) Draw and explain block diagram of Microprocessor based ventilator.
 (e) Give the function of oxygenator and heat exchanger in heart lung machine.
 (f) Draw the block diagram of baby Incubator and give the significance of humidity sensor and temperature sensor in it.

6. Attempt any FOUR :

16

- (a) State the need of artificial kidney and baby Incubator.
 (b) Define unipolar and bipolar leads.
 (c) List any four technical specification of bedside monitor.
 (d) Explain the fibrillation of heart.
 (e) Name the Fig. Identify the missing block A and B. Give the importance of it.

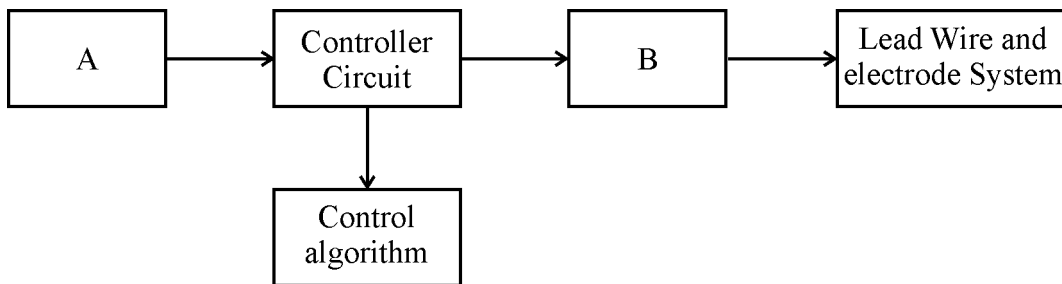


Fig.

