

Sample Test Paper - I

Course Name : Diploma in Medical Electronics

Course Code : MU

Semester : Sixth

Subject Title : Intensive Care Equipment.

Marks : 25

17672

Time: 1 Hour

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.
5. Preferably, write the answers in sequential order.

Q1. Attempt any THREE

9 Marks

- a) Differentiate between internal and external pacemaker. (any three points)
- b) Define fibrillation .State the need of debrillator.
- c) List the technical specification of external pacemaker.(any three)
- d) State the concept of AED (Automated External Defibrillator).

Q2. Attempt any TWO

8 Marks

- a) Describe the electrodes used in defibrillator with neat diagram.
- b) Draw the labeled block diagram of rate responsive pacemaker and state the function of each block.
- c) List the possible faults of defibrillator and write their possible solution.(any four)

Q3. Attempt any TWO

8 Marks

- a) State the concept of cardiac arrhythmias and Give the need of cardiac pacemaker.
- b) Draw the block diagram of cardioverter. And label it
- c) Describe the endocardial and myocardial leads.

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Sample Test Paper - II

Course Name : Diploma in Medical Electronics

Course Code : MU

Semester : Sixth

Subject Title : Intensive Care Equipment.

Marks : 25

17672

Time: 1 Hour

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.
5. Preferably, write the answers in sequential order.

Q1. Attempt any THREE

9 Marks

- a) List any three technical specifications of bedside monitor.
- b) State the need of artificial kidney.
- c) Write the principal of balloon pump.
- d) State any four application of ventilator.

Q2. Attempt any TWO

8 Marks

- a) Draw the labeled block diagram of hemodialysis machine.
- b) Draw the labeled block diagram of programmable microprocessor based infusion pump.
- c) Name the fig A. Identify the blocks A,B .State the significance of it.

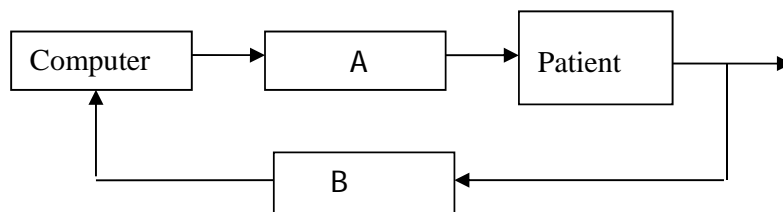


Fig A

Q3. Attempt any TWO

8 Marks

- a) Draw a neat labeled block diagram of ventilator and describe its working.
- b) State the need of heart lung bypass machine.
- c) Draw a neat labelled diagram of anaesthesia machine.

Sample Question Paper

Course Name : Diploma in Medical Electronics

Course Code : MU

Semester : Sixth

Subject Title : Intensive Care Equipment

Marks : 100

17672

Time: 3 Hours

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.
5. Preferably, write the answers in sequential order.

Q1. A) Attempt any THREE**12 Marks**

- a) State the need of cardiac pacemaker.
- b) Define ventricular fibrillation, and Differentiate between A.C. and D.C.defrillator on following points 1) circuit diagram 2) waveform generated.
- c) List the possible faults of ventilator and Give their possible solution.(any four).
- d) Draw the neat label block diagram of programmable microprosser based infusion pump.

Q1. B) Attempt any ONE.**06 Marks**

- a) Draw the block diagram of cardioverter .State the function of each block.
- b) Identify the fig.A.State the function of missing blocks A,B,C.

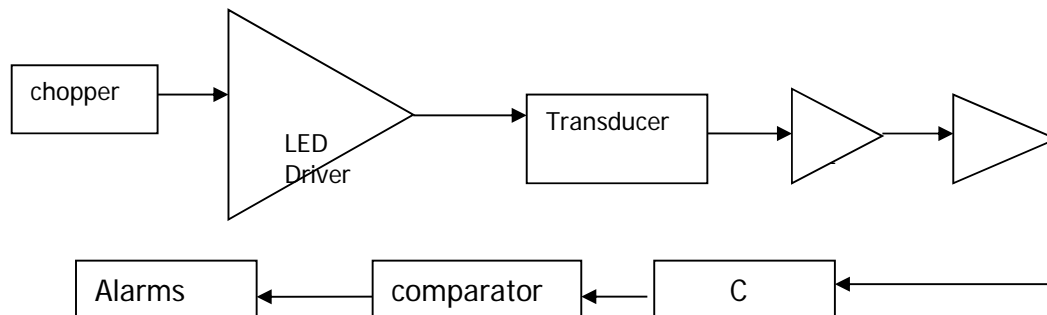


Fig -A

Q.2 Attempt any FOUR.**16 Marks**

- a) Differentiate between Internal and External pacemaker. (Any 04 points)
- b) Draw a neat diagram of heart-lung machine. State it's application.
- c) Write the significance of following mode of ventilator.
 - i) Assist mode.
 - ii) Control mode.

- d) List the technical specification of Bed Side monitor(Any 04).
- e) Draw the circuit diagram of temperature control and indicator used in baby incubator and describe it's working. .
- f) Differentiate between fixed and demand pacemaker.(any 4)

Q3. Attempt any FOUR.

16 Marks

- a) State the different pacing modes of pacemaker, and write it's applicable condition.
- b) A defibrillator delivers a square pulse of 4000volts with duration of 4ms.The internal resistance of defibrillator is about 15 ohm. The skin electrode resistance is 50 ohm and thorax resistance is 30 ohm Compute the energy deliver to the patients thorax and total energy available from the defibrillator.
- c) List any four technical specifications of nebulizer.
- d) In which condition central monitor is used describe with diagram.
- e) Draw the labeled block diagram of heart lung bypass machine

Q4. (A)Attempt any THREE.

12 Marks

- a) Give application area of following electrodes.
 - i) Endocardial leads
 - ii) Myocardial leads
 - iii) Unipolar leads
 - iv) Bipolar leads.
- b) State the troubleshooting steps carried out for ventilator.
- c) State the causes for the the following faults of bedside monitor.
 - i) ECG wave not display proper.
 - ii) SpO2 or pulse not displayed.
 - iii) Temperature varies frequently
- d) Draw a labeled block diagram of suction apparatus.

Q4. (B) Attempt any ONE.

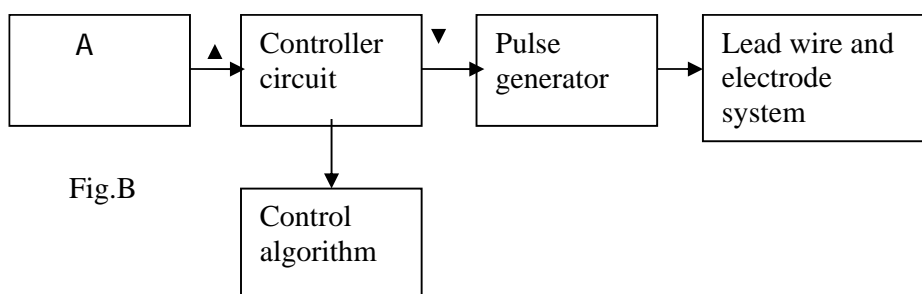
06 Marks

- a) Draw the fault finding tree for defibrillator.
- b) Draw a neat block diagram of haemodialysis machine. List the technical specification of the same. (any 04).

Q5. Attempt any FOUR.

16 Marks

- a) Name the fig B. Identify the missing block A. Give the importance of block A.



- b) Draw the block diagram of microprocessor based ventilator.
- c) State the principle of .1) Infusion pump 2) balloon pump
- d) List technical specifications of DC defibrillator. (Any 04)

- e) Write the different types of oxygenators and give it's importance in heart-lung machine
- f) State the need of following apparatus
 - i) Ventilator
 - ii) Anesthesia machine
 - iii) Suction machine
 - iv) Nebulizer.

Q6. Attempt any FOUR.

16 Marks

- a) Draw a neat diagram of boils apparatus.
- b) A patient is required pacemaker for a short time while operating him. Suggest the type of pacemaker required for patient. And draw the block diagram of pacemaker.
- c) Draw the block diagram of conventional method and closed loop control drug delivery system.
- d) State the need of baby incubator. State it's technical specification. (Any 04)
- e) State the meaning of cardiac arrhythmia. State the significance of Tachycardia & bradycardia.

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