

22648

12425

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) Enlist the organs of respiratory system.
- (b) Define the following terms :
 - (i) Heart Rate
 - (ii) Expiratory Reserve Volume
- (c) Explain the mechanism of respiration.
- (d) Draw diagram of any one type of microelectrode.
- (e) Classify the pacemaker based on their modes.
- (f) State any two applications of MRI.
- (g) Draw block diagram of phonocardiograph.

2. Attempt any THREE of the following :

12

- (a) State any four functions of cerebrum.
- (b) Draw block diagram of EEG machine.
- (c) Identify the instrument which is used to measure blood flow. Explain it in detail.
- (d) Enlist any four effects of leakage current on human body.



- 3. Attempt any THREE of the following : 12**
- (a) Draw block diagram of Man-instrument system and explain it in detail.
 - (b) Describe ECG machine with suitable diagram.
 - (c) Describe working of sphygmomanometer with suitable diagram.
 - (d) Draw and explain DC defibrillation circuit in detail.
- 4. Attempt any THREE of the following : 12**
- (a) Draw a neat labelled diagram of neuron and explain it.
 - (b) Draw and explain block diagram of EMG machine.
 - (c) Describe working of spirometer with suitable diagram.
 - (d) Describe the concept of biotelemetry.
 - (e) Draw block diagram of Ultrasonography machine. Explain its working.
- 5. Attempt any TWO of the following : 12**
- (a) Describe electrical conduction system of heart with suitable diagram by using following points :
 - (i) S.A. node
 - (ii) A.V. node
 - (iii) Bundle of His and Purkinje fibres
 - (b) Explain the concept of resting and action potential with diagram.
 - (c) Describe SPECT in detail. State its two applications.
- 6. Attempt any TWO of the following : 12**
- (a) Draw a neat diagram of Audiometer and state its two applications.
 - (b) Draw and explain block diagram of X-ray machine in detail.
 - (c)
 - (i) Identify the machine which can be used in case of kidney failure. Also draw its schematic diagram.
 - (ii) State the function of dialyzer.
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