

22648

24225

3 Hours / 70 Marks

Seat No.

--	--	--	--	--	--	--	--

- Instructions :**
- (1) All Questions are *compulsory*.
 - (2) Illustrate your answers with neat sketches wherever necessary.
 - (3) Figures to the right indicate full marks.
 - (4) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. Attempt any FIVE of the following :

10

- (a) State the function of
 - (i) Cerebrum
 - (ii) Medulla oblongata
- (b) List the different types of heart sound.
- (c) State the importance of cardiac output.
- (d) Define :
 - (i) Action potential
 - (ii) Resting potential
- (e) Draw a labelled block diagram of phonocardiograph.
- (f) Define Fibrillation. How it is overcome ?
- (g) List any four applications of MRI.

2. Attempt any THREE of the following :

12

- (a) Draw a neat labelled block diagram of Man Instrument System and explain it.
- (b) Explain the working of instrument used to measure muscular activity with the help of block diagram.
- (c) Explain the procedure for respiration rate measurement using spirometer.
- (d) Draw a neat labelled diagram of hemodialysis machine. State its need.



- 3. Attempt any THREE of the following : 12**
- (a) Explain operation of kidney with suitable diagram.
 - (b) Describe electrode-electrolyte interface with a neat labelled diagram.
 - (c) Explain ultrasonic method for blood flow measurements.
 - (d) State the need of pacemaker. List different types of pacemakers.
- 4. Attempt any THREE of the following : 12**
- (a) Explain the following terms :
 - (i) TLC
 - (ii) TV
 - (iii) IRV
 - (iv) FRC
 - (b) Name and explain electrode used for measuring EEG.
 - (c) Draw block diagram of audiometer and explain its working.
 - (d) For dc defibrillator
 - (i) Name the electrode used
 - (ii) Draw block diagram
 - (iii) Draw output waveform
 - (e) State the working principle of CAT. List its any four applications.
- 5. Attempt any TWO of the following : 12**
- (a) Draw a neat labelled diagram of internal structure of heart and explain cardiovascular circulation.
 - (b) Explain unipolar and bipolar lead configuration of ECG with suitable diagram.
 - (c) Draw a neat labelled block diagram of X-ray machine. State the role of each block in short.
- 6. Attempt any TWO of the following : 12**
- (a) Draw a neat labelled diagram of sphygmomanometer. Explain its construction and working in brief.
 - (b) Discuss effect of leakage current on human body. List any three precautions to be taken to minimize electric shock hazard.
 - (c) Explain different modes of ultrasonography in brief.
-