

17666

21819

3 Hours / 100 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.
- (5) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. a) **Attempt any THREE of the following:** **12**
- (i) State any four functions of kidney.
- (ii) List the specifications of DC fibrillator.
- (iii) Compare internal and external pacemaker (any four points).
- (iv) Explain with neat diagram the working of phonocardiograph.
- b) **Attempt any ONE of the following:** **6**
- (i) Draw and describe the blood flow measurement plethysmograph.
- (ii) Define electrocardiogram. Describe ECG with the help of block diagram.

P.T.O.

- 2. Attempt any TWO of the following:** **16**
- a) Explain the working of ultrasonography imaging technique of human body with neat diagram. List its technical specification (any four points).
 - b) Draw block diagram of x-ray machine and explain its working in detail.
 - c) Explain lung volumes and capacities with waveform.
- 3. Attempt any FOUR of the following:** **16**
- a) Draw the block diagram of man-instrument system and state the function of any two components.
 - b) List the technical specifications of x-ray machine.
 - c) Draw and describe electromagnetic type blood flow measurement method.
 - d) Draw the diagram of CAT machine and state the function of any two components.
 - e) Draw and describe the function of needle electrode.
- 4. a) Attempt any THREE of the following:** **12**
- (i) Describe action potential with the help of neat and labeled diagram.
 - (ii) List various effects of leakage current that occur with the increasing current density on human body.
 - (iii) Describe working of spirometer to measure respiration rate with neat and labeled diagram.
 - (iv) Describe A and B mode of ultrasonography with the help of waveform.
- b) Attempt any ONE of the following:** **6**
- (i) Draw different waveform of EEG. At the various stages of sleep.
 - (ii) Describe the working of sphygmo manometer with the help of diagram.

- 5. Attempt any TWO of the following:** **16**
- a) Draw block diagram of dialysis machine. Describe its working in detail.
 - b) Describe cardio vascular system with neat and labeled diagram.
 - c) Draw the neat diagram of EMG. State the functions of each component.
- 6. Attempt any FOUR of the following:** **16**
- a) State functions of cerebrum and medulla oblongata.
 - b) Describe the working of nervous system in human body with neat diagram.
 - c) Explain DC defibrillator with neat circuit diagram.
 - d) Describe micro shock and macro shock with patient safety.
 - e) Classify pacemaker. Describe any one in brief with diagram.
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