

17545

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.

- | | Marks |
|---|--------------|
| 1. (A) Attempt any THREE : | 12 |
| (a) Enlist technical specifications of digital blood pressure meter. (any four) | |
| (b) State any two methods for calculation of heart rate. | |
| (c) Explain Beer & Lambert's Law. | |
| (d) Enlist technical specifications of pulse oxymeter. (any four) | |
| (B) Attempt any ONE : | 6 |
| (a) Explain fault finding tree of ECG machine. | |
| (b) Define EEG. Explain with neat sketch of pre-amplifier circuit of EEG. | |
| 2. Attempt any FOUR : | 16 |
| (a) Draw BP waveform & explain it. | |
| (b) Explain principle of operation of pure tone audiometer. | |
| (c) Explain working of ultrasonic FHR meter. | |

- (d) Explain with sketch pre-amplifier circuit of EMG machine.
- (e) Describe 1 mv calibration circuit used in ECG machine.
- (f) State technical specifications of phono-cardiograph. (any four).

3. Attempt any FOUR :**16**

- (a) Describe working of heart rate meter with neat sketch.
- (b) Differentiate between direct & indirect blood pressure measurement techniques.
- (c) Describe working of EEG machine with neat sketch.
- (d) Explain Bipolar lead configurator for ECG measurement.
- (e) Draw block diagram of phono-cardiograph.

4. (A) Attempt any THREE :**12**

- (a) Enlist technical specifications of respiration rate meter.
- (b) Explain Galvanic skin reflex meter.
- (c) Describe EEG spectrum with suitable diagram.
- (d) Explain working of ECG machine.

(B) Attempt any ONE :**6**

- (a) Describe Wilson's network circuit used in ECG machine.
- (b) Draw fault finding tree of EEG machine.

5. Attempt any FOUR :**16**

- (a) Describe working of digital temperature meter.
- (b) Describe working of spirometer with neat sketch.
- (c) Describe the generation of heart sounds.
- (d) Draw and state any two respiratory parameters with their standard Sphygmogram.
- (e) Draw block diagram of hearing aid and describe it.
- (f) State maintenance steps for EMG machine.

6. Attempt any FOUR :**16**

- (a) Enlist technical specifications of ECG machine.
 - (b) Describe the concept of impedance audiometry.
 - (c) Explain block diagram of pulse oxymeter.
 - (d) Enlist technical specifications of EMG machine.
 - (e) Draw block diagram of Bekesy audiometer.
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