



17545

16117

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.*

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| 1. A) Attempt any three : | 12 |
| a) Describe digital blood pressure meter with suitable diagram. | |
| b) Explain Beer and Lamberts law. | |
| c) Enlist technical specification of heart rate meter. | |
| d) Explain the concept of vector cardiography. | |
| B) Attempt any one : | 6 |
| a) Draw fault finding tree of ECG machine. | |
| b) Define EEG. Explain with neat sketch of preamplifier circuit of EEG. | |
| 2. Attempt any four : | 16 |
| a) Explain BP waveform with neat sketch. | |
| b) Draw a block diagram of ultrasonic FHR meter. | |
| c) Explain principle of operation of pure tone audiometer. | |
| d) Describe 1 mV calibration circuit used in ECG machine. | |
| e) Explain with neat sketch, preamplifier circuit of EMG | |
| f) Explain operation of phonocardiograph machine. | |
| 3. Attempt any four : | 16 |
| a) Differentiate, direct and indirect blood pressure measurement technique. | |
| b) Draw and explain block diagram of heart rate meter. | |
| c) Draw with neat sketch, block diagram of EEG machine. | |
| d) Enlist technical specification of phonocardiograph. | |
| e) Write note on generation of ECG signal. | |

P.T.O.



4. A) Attempt **any three** : 12
- a) Enlist technical specifications of respiration rate meter.
 - b) Draw block diagram of GSR meter.
 - c) Explain principle of operation of ECG machine.
 - d) Explain principle of operation of EMG machine.
- B) Attempt **any one** : 6
- a) Describe 12-lead configuration system of ECG machine.
 - b) Draw fault finding tree of EEG machine.
5. Attempt **any four** : 16
- a) Draw block diagram of digital temperature meter.
 - b) Explain with neat sketch, working principle of spirometer.
 - c) Describe principle, operation of hearing aid.
 - d) Compare between ECG and PCG.
 - e) Draw any two respiratory parameter with their standard spirogram.
 - f) List any two problems and state remedies to eliminate it, for EMG machine.
6. Attempt **any four** : 16
- a) Enlist technical specification of ECG machine.
 - b) With neat sketch, describe air and bone conduction.
 - c) Explain block diagram of pulse oxymeter.
 - d) Enlist technical specification of EMG machine.
 - e) What is audiometer ? List types of audiometer. Also explain any one type of audiometer.
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