

- N.B. :** (1) Question No. 1 is **compulsory**.
 (2) Attempt any **four** questions from the remaining **six** questions.
 (3) **Figures** to the **right** indicate **full** marks.
 (4) Assume **suitable** data.

- Q1. (a) Explain the generation of EMG signal and the electrodes used for EMG in detail. (5)
 (b) Draw and explain the Cardiac action potential. (5)
 (c) What are the sources of noise in low level measurements? (5)
 (d) List the different techniques used to calculate the heart rate and explain instantaneous heart rate meters in detail. (5)
- Q2. (a) With the help of suitable diagrams, explain the working of a 12 Lead ECG. (10)
 (b) Explain using suitable block diagram and waveforms oscillometric method of blood pressure measurement. (10)
- Q3. (a) Explain using suitable diagram 10/20 electrode system of EEG. (10)
 (b) What is biofeedback? Explain the clinical significance of EMG biofeedback. (10)
- Q4. (a) Explain the Patient Monitoring system in detail. (10)
 (b) With the help of a neat diagram, explain the QRS detection technique ST/AR system. (10)
- Q5. (a) Draw and explain the procedure for monitoring the labour activity. (10)
 (b) Explain using suitable block diagram ambulatory monitoring system. (10)
- Q6. (a) Draw and explain block diagram of a single channel telemetry system. (10)
 (b) Explain the concept of Telemedicine, its essential parameters and applications of Telemedicine. (10)
- Q7. Write short notes on:- (20)
- Cardiotocograph.
 - Measurement of Pulse Rate.
 - EEG Biofeedback.
 - Macroshock and Microshock.