



(Following Paper ID and Roll No. to be filled in your Answer Book)

**PAPER ID : 121855**

Roll No.

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**B. Tech.**

(SEM. VIII) THEORY EXAMINATION, 2014-15  
**BIO INSTRUMENTATION**

Time : 3 Hours]

[Total Marks : 100

Note : Attempt all questions.

- 1 Attempt any four parts. 5×4=20
- Explain different types of physiological systems of the body.
  - List the various problems encountered in the measurement of living body.
  - What do you mean by man-Instrument system? Explain with block diagram.
  - What is bio electric potential ? Explain with suitable diagrams.
  - What do you mean by transducers? Explain active and passive transducers.
  - What is ECG? Draw its distribution graph.

- 2 Attempt any four parts. 5×4=20
- What are electrodes? Explain.
  - Explain the biochemical transducers.
  - What do you mean by cardiovascular system? Draw its circulation diagram.
  - What are the various characteristics of blood flow? Discuss briefly.
  - What do you mean by 'ECG' recording? What are the methods of it ?
  - Explain Heart sounds.
3. Attempt any four parts. 5×4=20
- Write short notes on anatomy of Nervous system.
  - What is the procedure of measurement of neuronal firing with suitable diagrams?
  - Explain the different components of EMG measurement.
  - Describe the desired features of Electromyography.
  - Explain clinical applications of ECG in detail.
  - Explain ultrasonic measurements in Human beings.
- 4 Attempt any two parts ; 10×2=20
- Eye Pressure measurement.
  - Intensive Care Unit? Draw its block diagram.
  - Bio telemetry & Applications in patient care.

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5 Attempt any two parts.  $10 \times 2 = 20$

- a) Write short notes on radiation therapy.
- b) Write short notes on following.
  - (i) Biomedical computer applications.
  - (ii) Method of accident prevention.
- c) Write short notes on any two.
  - (i) Automation of chemical tests.
  - (ii) Instrumentation for diagnostic X Rays.
  - (iii) Interfacing computer with medical instrumentation and other equipments.