



(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
- a) Explain different types of physiological systems of the body.
 - b) List the various problems encountered in the measurement of living body.
 - c) What do you mean by man-Instrument system? Explain with block diagram.
 - d) What is bio electric potential ? Explain with suitable diagrams.
 - e) What do you mean by transducers? Explain active and passive transducers.
 - f) What is ECG? Draw its distribution graph.

2 Attempt any four parts. $5 \times 4 = 20$

- a) What are electrodes? Explain.
- b) Explain the biochemical transducers.
- c) What do you mean by cardiovascular system? Draw its circulation diagram.
- d) What are the various characteristics of blood flow? Discuss briefly.
- e) What do you mean by 'ECG' recording? What are the methods of it ?
- f) Explain Heart sounds.

3. Attempt any four parts. $5 \times 4 = 20$

- a) Write short notes on anatomy of Nervous system.
- b) What is the procedure of measurement of neuronal firing with suitable diagrams?
- c) Explain the different components of EMG measurement.
- d) Describe the desired features of Electromyography.
- e) Explain clinical applications of ECG in detail.
- f) Explain ultrasonic measurements in Human beings.

4 Attempt any two parts ; $10 \times 2 = 20$

- a) Eye Pressure measurement.
- b) Intensive Care Unit? Draw its block diagram.
- c) Bio telemetry & Applications in patient care.

5 Attempt any two parts.

10×2= 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.
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