

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

Paper ID : 154853

Roll No.

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B.TECH.

Theory Examination (Semester-VIII) 2015-16

BIOMEDICAL INSTRUMENTATION

Time : 3 Hours

Max. Marks : 100

Section-A

**Q.1. Attempt all parts. All parts carry equal marks. Write
answer of each part in short. (2×10=20)**

- (a) Discuss the role of instrumentation in biomedical science.
- (b) What are signal transducers?
- (c) Write down about colored Doppler.
- (d) What are scintillations?
- (e) Write down the noninvasive instruments?

- (f) What do you understand by bioelectric potential?
- (g) What are good laboratory practices?
- (h) Explain the parameter of cardiac measurement?
- (i) What do you understand by behavior change?
- (j) Write a short note on patient care?

Section-B

Q.2. Attempt any five parts. All parts carry equal marks:

(5×10=50)

- (a) What are the effective methods to monitor cardiovascular parameters? Discuss the instrumentation which monitors the working of cardiovascular system.
- (b) What do you understand by source of bioelectric potential? How does it help in biomedical instrumentation?
- (c) Describe the role of computer in biomedical instrumentation with the help of suitable examples. Describe its role for monitoring and measurement intervention.

(2)

- (d) What do you understand by radioactive- tracers. Describe the emission of radiation from any radio nuclei used in radiotherapy and its measurement with the help of suitable example.
- (e) Describe the behavioral parameters. How does the instrumentation work for monitoring the behavioral changes change with the help of an example?
- (f) Write down the safety rule of medical equipment and their categorization.
- (g) Explain the principle, working and advantages of CT-SCAN and MRI.
- (h) Write down the principle and purpose of electrical safety of medical equipment?

Section-C

Note: Attempt any two questions from this section.

(2×15=30)

- Q.3. What do you understand by X-rays? Define its role in diagnostics and explain its advantages and disadvantages in medical field.

(3)

- Q.4. Explain the principle of EEG. How does it help in estimating the nervous system?
- Q.5. What is biotelemetry? Write down its principle, working and application with the help of a suitable diagram.