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Sub Code: NBT-052

Paper Id:

154237

Roll No.

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B TECH
(SEM-VIII) THEORY EXAMINATION 2018-19
BIOMEDICAL INSTRUMENTATION

*Time: 3 Hours**Total Marks: 100***Note: 1.** Attempt all Sections. If require any missing data; then choose suitably.**SECTION A**

- 1. Attempt *all* questions in brief. 2 x 10 = 20**
- a. What is active and passive transducer?
 - b. Write down the two application of Biomedical instrumentation
 - c. What is the principle of ECG recorder?
 - d. Mention any two Transducers for body temperature measurement.
 - e. Write down the any four medical imaging equipment.
 - f. Write down any two medical safety equipment.
 - g. What is invasive and noninvasive measurement? Give one example.
 - h. Write down the principle of Electrocardiogram.
 - i. What do you understand by a Biotelemetry?.
 - j. Discuss the measurement of Blood flow with suitable example.

SECTION B

- 2. Attempt any *three* of the following: 3x10 = 30**
- a. Discuss about the element of intensive care monitoring and write down the application of respiratory therapy equipment.
 - b. Explain about the organization of hospital for patient care monitoring.
 - c. Explain about the transducer for biomedical application with suitable example.
 - d. What are the various shock hazards from electrical equipment?
 - e. Draw a block diagram of biomedical instrumentation system and Explain each block.

SECTION C

- 3. Attempt any *one* part of the following: 1x10 = 10**
- a. Explain the various respiratory therapy equipment with some applications.
 - b. Draw the physiology of heart and explain the cardiovascular system in detail.

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4. **Attempt any *one* part of the following:** **1x10 = 10**
- a. Compare the characteristics of micro needle and surface electrode.
 - b. Explain the different parts of X-ray machine and write down the application of X-ray machine.
5. **Attempt any *one* part of the following:** **1x10 = 10**
- a. Explain the working and application of haemodialysis machine.
 - b. Give the principle of operation of breath in and explain its working.
6. **Attempt any *one* part of the following:** **1x10 = 10**
- a. Explain about the instrumentation for sensory measurement with suitable application.
 - b. Discuss about the physiological effect of electric current with suitable example.
7. **Attempt any *one* part of the following:** **1x10 = 10**
- a. Discuss about the temperature measurement and ultrasonic measurement with suitable examples.
 - b. Explain the characteristics of microelectrodes. Draw neat block diagram with explain the function of EMG.