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Total No. of Pages : 02

Total No. of Questions : 18

B.Tech.(Electronics & Electrical) / (Electrical & Electronics) (Sem.-7)

BIOMEDICAL INSTRUMENTATION

Subject Code : BTEEE-804D

M.Code : 71966

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTION TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A**Write briefly :**

- 1) What are the performance characteristics of transducers? List them out and define them.
- 2) Explain the principle of thermocouple. Which is the most common thermocouple used for body temperature measurement?
- 3) How thermistors are useful as temperature sensing elements?
- 4) What are the materials employed for piezoelectric transducers? Mention these characteristics.
- 5) Discuss various methods of measuring and recording blood flow.
- 6) Discuss the benefits of Nuclear medicine.
- 7) Compare ultrasonic diagnosis with X-ray diagnosis.
- 8) Discuss various noise sources and how it can be removed.
- 9) How Defibrillators are useful in restoring a normal heartbeat?
- 10) How pulse rate can be measured? Discuss.



**SECTION-B**

- 11) Explain various components of Radio-telemetry of biological signal.
- 12) What are Transducers? Indicate the factors which decide the choice of a particular transducer for bio-medical applications.
- 13) An ultrasonic imaging system is capable of operating at different frequencies. Under what circumstances these are used?
- 14) Explain the constructional details, principle and working of an LVDT.
- 15) Discuss various methods of measuring and recording pressure and temperature.

SECTION-C

- 16) What is the difference between an ECG, EEG and EMG?
- 17) What is a Pacemaker? How it is helpful for a human being?
- 18) What do you understand by the term Prosthetics? How they are helpful in restoring the normal function?

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.

