

## III B. Tech II Semester Supplementary Examinations, February-2022

**BIO-MEDICAL ENGINEERING**

(Electronics and Communication Engineering)

Time: 3 hours

Max. Marks: 70

- Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)  
 2. Answer **ALL** the question in **Part-A**  
 3. Answer any **FOUR** Questions from **Part-B**
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**PART –A****(14 Marks)**

1. a) List various Bioelectric Potentials. [2M]
- b) What is Nernst Equation? [2M]
- c) How many Lobes are there in Lungs? [2M]
- d) Define Internal Pacemakers? [3M]
- e) What is meant by Ultrasonic Imaging? [3M]
- f) List the names of recorders used in biomedical field. [2M]

**PART –B****(56 Marks)**

2. a) Explain the problems encountered in measuring a living system. [7M]
- b) Explain the resting and action potentials with the figures. [7M]
3. a) What is the difference between active and passive transducers? Explain working principle of any active transducer. [7M]
- b) Discuss about respiration sensors. [7M]
4. a) With a neat block diagram explain cardiovascular system. [7M]
- b) Explain the methods used to measure the blood flow. [7M]
5. a) What are the elements of intensive care monitoring? Also explain patient monitoring displays. [7M]
- b) Explain the complete Laparoscopic system. [7M]
6. a) Explain the principle of CAT Scan and compare its visualization method with conventional method. [7M]
- b) Explain the components of a bio-telemetry system with the help of neat labeled diagram. [7M]
7. a) Discuss the requirement of an ideal Bio-potential amplifier with neat circuit. [7M]
- b) What are different shock hazards that can be generated from electrical equipment and prevention against them? [7M]

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