

**III B. Tech II Semester Supplementary Examinations, April - 2021**  
**BIO-MEDICAL ENGINEERING**

(Common to Electronics and Communication Engineering,  
 Electronics Computer 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) Define ECG and EOG. [2M]
- b) Define electrode and electrode potential. [2M]
- c) What is cardiovascular system and mention its functions. [2M]
- d) What is Intensive Care Unit (ICU) and mention the facilities must be provided by it? [3M]
- e) What is the function of ultrasonic imaging? Mention the modes used in ultrasonic imaging. [3M]
- f) What is bio-potential amplifier and mention any three requirements of it? [2M]

**PART -B****(56 Marks)**

2. a) What is biomedical engineering? Explain briefly. [7M]
- b) Draw the block diagram of the man instrument system and explain its operation. [7M]
3. a) Explain the parameter that dictates the transducer capabilities. [7M]
- b) Describe the different transducers used for pulse pressure measurement. [7M]
4. a) What are the characteristics of blood flow? Explain. [7M]
- b) Discuss the anatomy and physiology of the respiratory system. [7M]
5. a) What are different instruments used for monitoring patients? Explain. [7M]
- b) Write a short note on the instrument used in minimally invasive surgery. [7M]
6. a) What is the principle of X-ray tube? Explain the construction of X-ray film. [7M]
- b) Explain briefly about Emission computerized tomography and MRI technique. [7M]
7. a) Explain the working of galvanometric recorder. [7M]
- b) List and explain various methods of accident preventions. [7M]

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