

III B. Tech II Semester Supplementary Examinations, November - 2019**BIO-MEDICAL ENGINEERING**

(Common to Electronics and Communication Engineering, Electronics and Instrumentation 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) Write a short note on different types of classification in biomedical instrumentation. [2M]
- b) Define Active Transducer and Passive Transducer. [2M]
- c) Mention the upper and lower respiratory organs. [2M]
- d) What is a biomaterial? [3M]
- e) What is meant by CT scan? [3M]
- f) Define various parts of color printer. [2M]

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

2. a) Write about Electro Cardiogram (ECG) in brief. [7M]
- b) Explain briefly about Resting potentials and Action potentials. [7M]
3. a) Discuss about the equivalent circuit of electrode-electrolyte interface used in the measurement of bioelectric potentials. [7M]
- b) Define transducer and discuss its principles. [7M]
4. a) Explain the cardiovascular system in human body. [7M]
- b) Discuss the measurement of blood pressure by auscultatory method. [7M]
5. a) Explain about different patient-monitoring displays. [7M]
- b) What are pacemakers? Explain in detail. [7M]
6. a) What are the principals of ultrasonic measurement? Explain the various modes of ultrasonic transmission. [7M]
- b) Describe the processing of X-ray film. [7M]
7. a) Write a short note on bioelectric potential amplifier and discuss the requirements of an ideal bioelectric potential amplifier. [7M]
- b) What are the physiological effects of electrical current? Explain. [7M]

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