

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

(Common to Electronics and Communication Engineering, Electronics and Computer Engineering)

Time: 3 hours

Maximum Marks: 70

 Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)
2. Answering the question in **Part-A** is compulsory3. Answer any **THREE** Questions from **Part-B**

PART -A**(22 Marks)**

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|---|---|------|
| 1 | a) What is ECG? Draw the waveform and mention its components. | [3M] |
| | b) Discuss the electrode theory. | [4M] |
| | c) Write about plethysmography. | [4M] |
| | d) Draw the block diagram of patient care monitoring system. | [3M] |
| | e) What are the principles of Ultrasonic Measurement? | [4M] |
| | f) Differentiate between micro shock and macro shock. | [4M] |

PART -B**(48 Marks)**

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|---|--|------|
| 2 | a) Explain the elements of man-instrument system. | [8M] |
| | b) Describe the characteristics of bio-signals. | [8M] |
| 3 | a) What are Biochemical Transducers? Explain. | [8M] |
| | b) Explain the applications of pulse sensors. | [8M] |
| 4 | a) Describe the operation of ultrasonic blood flow meter. | [8M] |
| | b) Explain the different heart sounds and how to measure the heart sounds? | [8M] |
| 5 | a) Explain about the Patient Monitoring Displays. | [8M] |
| | b) Write about the Elements of Intensive-Care Monitoring. | [8M] |
| 6 | a) Explain the working principle of CT scan with neat block diagram. | [8M] |
| | b) Compare the CT scan visualization method with conventional method. | [8M] |
| 7 | a) Explain about the shock hazards of electrical equipment. | [8M] |
| | b) Explain Methods of accident prevention. | [8M] |
