

## III B. Tech II Semester Supplementary Examinations, November/December - 2016

**BIO-MEDICAL ENGINEERING**  
(Electronics and Communication 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**

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**PART -A**

- |   |    |   |      |
|---|----|---|------|
| 1 | a) | What is action potential? What is resting potential?                | [4M] |
|   | b) | Write the nearest equation for membrane resting potential.          | [3M] |
|   | c) | What is spirometer? Explain the principle of operation of it.       | [4M] |
|   | d) | Write short notes on catheterization lab.                           | [4M] |
|   | e) | List and discuss various types of ultrasonic imaging display modes. | [3M] |
|   | f) | Differentiate between micro shock and macro shock.                  | [4M] |

**PART -B**

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|---|----|--|-------|
| 2 | a) | What are the various problems encountered in measuring a living system?                                  | [6M]  |
|   | b) | Explain briefly various physiological systems of the body.   | [6M]  |
|   | c) | With neat waveform explain briefly about ECG.  | [4M]  |
| 3 | a) | Explain different types of electrodes for measuring bioelectric potentials.                              | [9M]  |
|   | b) | List and discuss briefly various types of transducers for biomedical applications.                       | [7M]  |
| 4 | a) | What is the importance of blood flow? Discuss any two methods used to measure blood flow.                | [10M] |
|   | b) | Explain the physiology of respiratory system.  | [6M]  |
| 5 | a) | What is fibrillation? How you correct it? Draw and explain d.c defibrillator.                            | [8M]  |
|   | b) | Explain the following i) electroretinogram ii) electrooculogram  | [8M]  |
| 6 | a) | Explain how telemetry can be done for ECG measurement during exercise. List the advantages of telemetry. | [8M]  |
|   | b) | Explain the working principle of CT scan with block diagram.   | [8M]  |
| 7 | a) | Discuss strip chart recorders and galvanometric recorders with suitable diagrams.                        | [8M]  |
|   | b) | Explain various methods of accident prevention with diagrams.  | [8M]  |

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