

## III B. Tech II Semester Supplementary Examinations, November - 2018

**BIO-MEDICAL ENGINEERING**

(Electronics and Communication Engineering &amp; 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 compulsory  
 3. Answer any **THREE** Questions from **Part-B**

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**PART -A**

- |   |    |   |      |
|---|----|---|------|
| 1 | a) | What is the use of bioamplifier?                | [4M] |
|   | b) | Write the Nernst equation.                      | [4M] |
|   | c) | What are the different bio-chemical electrodes? | [3M] |
|   | d) | Draw reference electrode basic configuration.   | [4M] |
|   | e) | What is the use of de- fibrillator?             | [3M] |
|   | f) | What is macro shock?                            | [4M] |

**PART -B**

- |   |    |  |      |
|---|----|--|------|
| 2 | a) | What is a man-instrument system? Explain.                              | [8M] |
|   | b) | Discuss the Bioelectric potentials of EMG                              | [8M] |
| 3 | a) | Explain the basic transducer principle with an example                 | [8M] |
|   | b) | Give the comparison of internal and external bio-potential electrodes. | [8M] |
| 4 | a) | Explain various tests and instrumentation for breathing.               | [8M] |
|   | b) | Explain the measurement process of lung function.                      | [8M] |
| 5 | a) | What are the elements of intensive-care unit? Explain.                 | [8M] |
|   | b) | Discuss about the clinical laboratory instruments                      | [8M] |
| 6 | a) | What is the use of telemetry for ECG measurements? Explain.            | [8M] |
|   | b) | Write notes on CAT.  | [8M] |
| 7 | a) | What is the need for isolated power distribution system? Explain.      | [8M] |
|   | b) | What are the different types of recorders? Explain.                    | [8M] |

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