

III B. Tech II Semester Supplementary Examinations, April/May - 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 compulsory
3. Answer any **THREE** Questions from **Part-B**

PART -A

- | | | | |
|---|----|--|------|
| 1 | a) | How the resting potential is measured? | [4M] |
| | b) | Write note on pulse sensors | [4M] |
| | c) | Draw Einthoven triangle. | [3M] |
| | d) | Write about Myo electric arm | [4M] |
| | e) | What is the use of MRI? | [3M] |
| | f) | What is micro shock? | [4M] |

PART -B

- | | | | |
|---|----|---|------|
| 2 | a) | What are the basic objectives of any medical instrumentation system? Explain. | [8M] |
| | b) | Explain the following terms:
i) Resting potential ii) Action potential | [8M] |
| 3 | a) | What are disposable electrodes? Explain. | [8M] |
| | b) | Explain the principle of operation of P _O ₂ electrode. | [8M] |
| 4 | a) | What is the use of spirometry? Explain. | [8M] |
| | b) | Explain the working principle of blood flow meter. | [8M] |
| 5 | a) | What is the use of nebulizers? What is the functional difference with respect to respirators? | [8M] |
| | b) | Discuss the tonometer for eye pressure measurement | [8M] |
| 6 | a) | What is the principle of ultrasonic imaging? | [8M] |
| | b) | What is the need for telemetry in bio-medical instrumentation? | [8M] |
| 7 | a) | What are different shock hazards? Explain different methods of prevention. | [8M] |
| | b) | Explain how the physiological effects of electric current are. | [8M] |
