

Code: EC7T4D

**IV B.Tech - I Semester – Regular/Supplementary Examinations  
October - 2019**

**BIO - MEDICAL INSTRUMENTATION  
(ELECTRONICS & COMMUNICATION ENGINEERING)**

Duration: 3 hours

Max. Marks: 70

**PART – A**

Answer *all* the questions. All questions carry equal marks

11 x 2 = 22 M

1.

- a) Define bio potentials.
- b) Define absolute refractory period.
- c) State Nernst equation.
- d) What is meant by evoked potential?
- e) Draw the neat sketch of EEG waveform and indicate different points.
- f) Define systolic and diastolic pressure.
- g) List the uses of blood cell counter.
- h) List the properties of laser.
- i) List the applications of MRI.
- j) List the different types of respiratory therapy equipment.
- k) What is meant by pacemaker?

PART – B

Answer any **THREE** questions. All questions carry equal marks.

3 x 16 = 48 M

2. a) Explain about different types of electrodes with a neat sketch. 8 M
- b) Discuss in detail about Biochemical transducers. 8 M
3. a) With a neat sketch discuss about the electrical conduction of the heart. 8 M
- b) Explain in detail about 10-20 EEG lead system with a neat sketch. 8 M
4. a) Write briefly about lung volumes and capacities. 8 M
- b) Discuss about the principle of ultrasonic blood flow meter. 8 M
5. a) Write a short notes on:  
i) Angiography and ii) Endoscopy 8 M
- b) Explain the working principle of computer tomography along with block diagram. 8 M

6. a) What is a defibrillator? Discuss about D.C. defibrillator with current waveform. 8 M
- b) Discuss about various patient monitoring system. 8 M