

Code: EC7T4D

**IV B.Tech - I Semester – Regular/Supplementary Examinations
October - 2018**

**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) What is resting potential?
- b) What is absolute refractory period?
- c) What are needle electrodes?
- d) What is lead configuration?
- e) Define cardiac output.
- f) List any two uses of lasers in medicine.
- g) What are Percutaneous transducers?
- h) What is plethysmography?
- i) What is hemodialysis?
- j) State the purpose of nerve stimulator.
- k) What do you mean by evoked potential?

PART – B

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

3 x 16 = 48 M

2. a) Explain the propagation of action potential with a neat sketch. 8 M
- b) Draw the typical equivalent circuit of an electrode and discuss about types of electrodes in detail. 8 M
3. a) Explain the electrophysiology of heart. 8 M
- b) With necessary diagrams, give the complete analysis of recorded ECG waveform. 8 M
4. a) Explain in detail direct and indirect methods of measuring blood pressure. 10 M
- b) Explain the measurement of heart sounds with relevant diagram. 6 M
5. a) With a neat sketch, explain X-ray computed tomography. 10 M
- b) Discuss about Endoscopy. 6 M
6. a) Explain the operation of any two types of defibrillators. 8 M
- b) Discuss about power sources for implantable cardiac pacemakers. 8 M