

Code No: **PT42044D****R13****Set No. 1****IV B.Tech II Semester Regular/Supplementary Examinations, April - 2018****BIO MEDICAL INSTRUMENTATION****(Electronics and Communications Engineering)****Time: 3 hours****Max. Marks: 70***Question paper consists of Part-A and Part-B**Answer ALL sub questions from Part-A**Answer any THREE questions from Part-B************PART-A (22 Marks)**

1. a) What are resting and action potentials? [3]
- b) Define EEG and ECG? What is the frequency range of ECG, EEG and EMG waves? [4]
- c) What are the methods involved in direct blood pressure measurement? [4]
- d) What are the elements of bio telemetry system? Name the different types of bio telemetry system. [4]
- e) What are the physiological effects of electrical current? [4]
- f) What are the applications of MRI? [3]

PART-B (3x16 = 48 Marks)

2. a) Discuss in detail about bio medical signals. [8]
- b) With neat sketches explain bio chemical transducers. [8]
- 3 Describe in detail about the clinical significance, lead configuration, recording methods and waveforms of ECG. [16]
4. a) What are the requirements of a patient monitoring display? Explain one monitoring display system. [8]
- b) Write short notes on the elements of Intensive care monitor. [8]
5. a) Explain the concept of automation of chemical tests. [8]
- b) Explain the different elements involved in bio telemetry circuits. [8]
6. a) Explain the working of X ray machine? [8]
- b) List and explain the methods of accident prevention. [8]
7. a) Explain with the block diagram of the MRI . [8]
- b) Explain the concepts of ultrasonography and mention its types. [8]