

Code No: **R41048****R10****Set No. 1****IV B.Tech I Semester Supplementary Examinations, Oct/Nov - 2018****BIO-MEDICAL ENGINEERING****(Electronics and Communication Engineering)****Time: 3 hours****Max. Marks: 75****Answer any FIVE Questions  
All Questions carry equal marks****\*\*\*\*\***

- 1 a) How the bioelectric potentials are measured? Name some of the equipment using such measurement. [8]  
b) With neat sketches, explain about resting and action potentials. [7]
- 2 a) Define transducer. Differentiate active and passive transducer. Explain the working principle of any passive transducer. [8]  
b) Explain different types of electrodes for measuring bioelectric potentials. [7]
- 3 a) Draw different ECG lead configurations and explain recording of ECG. [8]  
b) Explain the electrical conduction system of a heart. [7]
- 4 a) Explain the physiology of respiratory system. [8]  
b) Explain about the various tests for the mechanics of breathing. [7]
- 5 a) Compare and contrast pacemakers and defibrillators. [7]  
b) With neat diagram explain about the calibration and repair ability of patient monitoring equipment. [8]
- 6 a) Explain the working principle of tonometer for the measurement of Eye Pressure. [8]  
b) With the help of a circuit diagram, Explain the working of short wave diathermy unit. [7]
- 7 a) Explain the process of Ultrasonic imaging in detail. [7]  
b) Explain the working principle of CT Scan with block diagram. [8]
- 8 a) Explain about shock hazards of electrical equipment. [8]  
b) Give examples of the physiological effects of electrical current. [7]