Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY BE - SEMESTER- III (NEW)EXAMINATION – SUMMER 2015

Subject Code: 2130303 Date: 27/05/2015 **Subject Name: Bioelectric Potential and Measurement Technique** Time: 02.30pm-05.00pm **Total Marks: 70** Instructions: 1. Attempt all questions. 2. Make suitable assumptions wherever necessary. 3. Figures to the right indicate full marks. 0.1 (a) Briefly describe the propagation of action potential. 07 **(b)** Explain the transduction principal with necessary examples. 07 Enlist and describe the problem encountered and solutions during bioelectrical 0.2 (a) 07 potential measurement. **(b)** What is an active transducer? Enlist and explain technicality of any three. 07 OR **(b)** What is a passive transducer? Enlist and explain technicality of any three. 07 Explain the montage system of EEG measurements. **07** Q.3(a) What do you mean by motor movement analysis? Enlist and explain various **(b)** 07 techniques used. OR 0.3 Enlist and explain the characteristics of electroencephalogram. 07 (a) Briefly describe the cardiac cycle with necessary sketches. 07 **(b) Q.4** (a) Explain the generation of Electrocardiogram. 07 **(b)** Explain defibrillators with block diagram. **07** OR (a) What do you mean by prosthetic devices? Explain functional electrical 0.4 07 stimulation and applications. **(b)** Explain the measurement technique of Electrocardiogram. **07 Q.5 07** (a) Write a technical note on Diathermy. (b) Describe the EMG acquisition with necessary block diagram. 07 OR **Q.5** (a) Write a technical note on Cardiac Pacemaker. **07 07** (b) Explain Bio-chemical transducers in detail.
