

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**BE – SEMESTER IV EXAMINATION – SUMMER 2015**

**Subject Code: 140302****Date: 08/06/2015****Subject Name: Physiological Measurement Techniques****Time: 10.30am-01.00pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Explain generation of action potential within Cell. **07**  
(b) Explain recording of membrane potential from cell membrane. **07**
- Q.2** (a) Explain Conduction system of Heart. **07**  
(b) Draw a neat diagram of cellular structure and enlist functions of its organelles. **07**
- OR**
- (b) Explain Electrode- electrolyte Interface. **07**
- Q.3** (a) Draw and explain structure of Neuron. **07**  
(b) Describe Cardiac Cycle with necessary waveform. **07**
- OR**
- Q.3** (a) What is synapse? Explain reflex Arc. **07**  
(b) Short note: Unipolar ECG leads. **07**
- Q.4** (a) Write a short Note on Electromagnetic interference & shielding **07**  
(b) Short Note: Electrodes used for EMG **07**
- OR**
- Q.4** (a) Explain Mechanism of Respiration. **07**  
(b) Write a short Note on Ground loop interference & input guarding. **07**
- Q.5** (a) Explain the physiology of muscular movement and importance of Sarcomere. **07**  
(b) Short Note: Capacitive Interference. **07**
- OR**
- Q.5** (a) Differentiate between CNS and PNS. Draw and explain structure of Brain. **07**  
(b) Short Note : Microelectrodes **07**

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