

GUJARAT TECHNOLOGICAL UNIVERSITY**BE SEM-IV Examination-Nov/Dec-2011****Subject code: 140302****Date: 02/12/2011****Subject Name: Physiological Measurement Techniques****Time: 02.30 pm -5.00 pm****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 the physiology of heart as pump. **07**

(b) Enlist the cranial nerves. Explain the function of any three nerve pairs. **07**

Q.2 (a) Explain the structure of cell. Also explain function of different constituents. **07**

(b) Describe the conducting system of the heart. **07**

OR

(b) Briefly explain the cardiac cycle & ECG. **07**

Q.3 (a) Give a detail description of internal & Micro electrodes with neat diagrams. **07**

(b) Define the term blood pressure. Describe the main control mechanisms for regulation of blood pressure. **07**

OR

Q.3 (a) Draw & explain structure of eye. Give an overview to the techniques for EOG & ERG measurement. **07**

(b) Explain the use of surface electrodes for Biological Signal Recorder. **07**

Q.4 (a) Explain the instrument used for Pulmonary Function Test. **07**

(b) Enlist different types of nerves. State the functions of sensory and motor nerves. **07**

OR

Q.4 (a) Briefly explain shielding techniques to remove electromagnetic interferences. **07**

(b) Describe the functions of four types of neuroglial cells. **07**

Q.5 (a) Explain the transport of substance across the cell membrane. **07**

(b) What is half-cell potential? How to remove motion artifacts? **07**

OR

Q.5 (a) Draw a neat sketch of vertebral column. Explain the cranial cavity. **07**

(b) Describe lung volumes & capacities with graph of normal breathing pattern. **07**
