

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

B. E. Sem - IV Examination - June- 2011

Subject code: 140302

Subject Name: Physiological Measurement Technique

Date: 13/06/2011

Time: 10.30 am – 01.00 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) Discuss the generation of Action Potential. What is all-or-nothing rule? **07**
Explain the refractory period of cell.
- (b) Discuss the types of electrodes used for measuring bioelectric signal. **07**

- Q.2** (a) What is Endocytosis? List different pathways of endocytosis and discuss **07**
principal components of endocytic pathway.
- (b) What is Exocytosis? Discuss different types of Exocytosis. **07**

OR

- (b) Explain Electrode Theory and give equivalent circuit of biopotential electrode **07**
interface.

- Q.3** (a) Discuss electrical conduction system of heart. How the ECG is generated? **07**
- (b) Explain the structure and working of skeletal muscles. **07**

OR

- Q.3** (a) Explain respiration mechanism in human body. **07**
- (b) Explain homeostatic regulation and its control mechanisms. **07**

- Q.4** (a) With neat diagram explain functioning of heart as a pump. **07**
- (b) With neat diagram explain structure of EYE. **07**

OR

- Q.4** (a) With neat diagram describe nervous system of body briefly. **07**
- (b) Explain different parameters in pulmonary volumes and capacities. **07**

- Q.5** (a) With block diagram explain electromyogram. How the latency can be found. **07**
- (b) Explain different electrode placement system for acquiring EEG. Explain **07**
analysis of Electroencephalogram.

OR

- Q.5** (a) Explain the effect of electromagnetic interference on artificial organs and give **07**
remedial measures.
- (b) Explain ground loop interference and input guarding. **07**
