Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- IVth SEMESTER–EXAMINATION – MAY/JUNE- 2012

Subject code: 140302 **Date: 31/05/2012**

Subject Name: Physiological Measurement Techniques

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)** What is tissue regeneration? Define Labile, Stable & Permanent cells. **07**

(b) Explain the difference between below given terms. **07**

1. CNS & PNS
2. Sensory nerves & Motor nerves
3. Voluntary & Involuntary Nerves

Q.2 **(a)** Enlist & Explain the types of Cell division. **07**

(b) Explain the use of piezo crystal as Pressure, Capacitive & Displacement transducer. **07**

OR

(b) Explain the propagation of an impulse in a non-myelinated nerve fibre with neat sketch. **07**

Q.3 **(a)** Discuss the conductively coupled interference. **07**

(b) Describe the flow of cerebrospinal fluid in the brain. **07**

OR

Q.3 **(a)** Explain the structure of micropipette electrodes. Discuss the applicability of it. **07**

(b) What is a cardiac rhythm? Explain the abnormalities that may arise in cardiac rhythm. **07**

Q.4 **(a)** Describe the working of heart. Explain the effect of high blood pressure in arteries. **07**

(b) Enlist the types of surface electrodes. What precautions should be taken while measuring EMG using surface electrodes? **07**

OR

Q.4 **(a)** Explain the difference between capacitive & Inductive interference. Discuss the techniques to remove it. **07**

(b) Describe the functions of Pharynx. **07**

Q.5 **(a)** Discuss the effect of mutation. What are the effects of mutation on evolution? **07**

(b) Explain the respiratory track with neat diagram. **07**

OR

Q.5 **(a)** Describe the structure and functions of these tissues: **07**
Epithelial, Connective, Muscle, Nervous.

(b) Give a brief description of retina. What is the function of macular region? **07**

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