Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER– IV(NEW) EXAMINATION – SUMMER 2015

Subject Code: 2140306 **Date:01/06/2015**

Subject Name: Biosensors & Transducers

Time: 10:30am-1.00pm **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)**	Give classification of Transducers in detail.	**07**
	(b)	Enlist different types of radiation sensors & explain GM counter.	**07**
Q.2	**(a)**	Draw and explain basic structural unit of nervous system.	**07**
	(b)	Enlist different types of temperature sensor and Describe Thermocouple as a temperature transducer.	**07**
		OR	
	(b)	Write a Short Note on Linear Variable Differential Transformer.	**07**
Q.3	**(a)**	Explain blood pressure measurement using Sphygmomanometer.	**07**
	(b)	What is Conductometry & explain Conductivity sensors.	**07**
		OR	
Q.3	**(a)**	Explain working principle of Transit time and electromagnetic type flow meters.	**07**
	(b)	Define oximetry. Explain working principle of Pulse Oximeter.	**07**
Q.4	**(a)**	Describe Construction of Glass electrode for the pH measurement.	**07**
	(b)	Enlist Biological biosensors & explain Enzyme based sensors in detail.	**07**
		OR	
Q.4	**(a)**	Describe electrodes used for pO2 Measurement.	**07**
	(b)	Explain Silver - silver chloride electrodes in detail.	**07**
Q.5	**(a)**	Write a short note on Gas sensors.	**07**
	(b)	Enlist different types of Level Measurement Transducers & explain ultrasonic transducer for level measurement.	**07**
		OR	
Q.5	**(a)**	Write a short note on smart sensors.	**07**
	(b)	Discuss static characteristics of Transducers.	**07**

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