Seat No.: _____ **Enrolment No._____**

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VI- EXAMINATION – SUMMER 2016

Subject Code:162401 **Date:19/05/2016**

Subject Name:Industrial Instrumentation

Time: 10:30 AM to 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)**	Give classification of transducer based on different criteria.	**07**
	(b)	Define LVDT. Explain the working and operation of LVDT for measuring Displacement.	**07**
Q.2	**(a)**	Explain about the resistive transducer.	**07**
	(b)	Explain about piezoelectric sensor.	**07**
		OR	
	(b)	Write short note on Ultrasonic transducer.	**07**
Q.3	**(a)**	Compare the following terms: Primary and Secondary Temperature Sensor.	**07**
	(b)	What is an Optocoupler? Describe different types of Optocoupler and Explain its operating principle along with its application.	**07**
		OR	
Q.3	**(a)**	Explain the Seebeck effect. List the factors affecting the choice of materials for thermoemf sensors. Explain the construction of the thermocouple.	**07**
	(b)	Explain hall effect and hall effect sensor.	**07**
Q.4	**(a)**	Describe in Detail working of Electromagnetic Flow meter.	**07**
	(b)	What is compensation? List various sensor defects and explain any three of them in brief.	**07**
		OR	
Q.4	**(a)**	Write a short note on Photoconductive Cell.	**07**
	(b)	Explain what are smart sensors? Describe its elements.	**07**
Q.5	**(a)**	Write technical note describing construction, characteristics and application on Nano Sensors.	**07**
	(b)	Explain in details use of sensor for Home Appliances.	**07**
		OR	
Q.5	**(a)**	Explain the use of sensor for Measuring Temperature.	**07**
	(b)	Describe the concept of industrial automation.	**07**

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