Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

PDDC - SEMESTER–VII • EXAMINATION – SUMMER • 2015

Subject Code:X70903 **Date:**14/**05/2015**

Subject Name:Industrial Instrumentation

Time:02:30 pm - 05:00 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)**	Define transducer and classify transducers as different basis.	**07**
	(b)	Define: Resolution, Accuracy, Drift, Sensitivity , Dead zone, Precision Reproducibility.	**07**
Q.2	**(a)**	Describe the construction and working principle of thermocouples.	**07**
	(b)	What is load cell ? Explain proving ring and hydraulic load cell.	**07**
		OR	
	(b)	Explain the construction and working of LVDT with its advantages and disadvantages with neat sketch.	**07**
Q.3	**(a)**	Explain the construction and working of X-Y recorders.	**07**
	(b)	Explain working of ultrasonic level detector.	**07**
		OR	
Q.3	**(a)**	What is torque ? State different types of torque measurement techniques and explain any one.	**07**
	(b)	Describe the construction, working, advantages and limitations of any method for flow measurement.	**07**
Q.4	**(a)**	Explain the various elements of analog data acquisition system.	**07**
	(b)	What is hall effect ? Describe the working principle ,construction and applications of hall effect transducer.	**07**
		OR	
Q.4	**(a)**	State and explain various principle of operation of capacitive transducer for level measurement.	**07**
	(b)	Explain the use of thermister for temperature measurement.	**07**
Q.5	**(a)**	Write different types of electrical force transducers. Explain any one.	**07**
	(b)	Explain how temperature compensation is achieved in strain measuring system.	**07**
		OR	
Q.5	**(a)**	Explain Macleod gauge.	**07**
	(b)	Explain the construction and working of Rotameter with neat sketch. State its advantages and disadvantages.	**07**

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