Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

Diploma Engineering – SEMESTER – II • EXAMINATION – WINTER • 2014

Subject Code: 3321701 **Date: 24-12-2014**

Subject Name: Industrial Transducers

Time: 10:30 am - 01:00 pm **Total Marks: 70**

Instructions:

1. **Attempt any five questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**
4. **English version is considered to be Authentic.**

Q.1	(a)	How many ways transducers can be classified? List the transducers in electrical one.	**07**
	(b)	Test the filled system temperature transducer?	**07**
Q.2	(a)	Compare the magnetic flow transducer with ultrasonic one.	**07**
	(b)	Listing types of digital encoders explain any one.	**07**
		OR	
	(b)	How does a photovoltaic cell work?	**07**
Q.3	(a)	Explain the working principle of GM counter.	**07**
	(b)	Listing the types of thermocouples explain the working of K type.	**07**
		OR	
Q.3	(a)	Listing the types of RTD explain the working principle of Pt .	**07**
	(b)	How does the strain gauge transducer work? Explain.	**07**
Q.4	(a)	Which are the basic requirements of a transducer? Explain.	**07**
	(b)	Define any three characteristics : 1- accuracy 2- error 3-linearity 4- reproducibility 5- hysteresis	**07**
		OR	
Q. 4	(a)	Define any three characteristics : 1- speed of response 2- lag 3- dynamic error 4- dead zone – 5 creep	**07**
	(b)	How one can test the capacitive transducer? Explain.	**07**
Q.5	(a)	Explain the working principle of a LVDT with a diagram.	**07**
	(b)	How can one test the resistive transducer? explain.	**07**
		OR	
Q.5	(a)	How flow can be transduced by the Pitot tube? explain briefly	**07**
	(b)	List the types of Diaphragm & explain corrugated type in detail with diagram.	**07**

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