Seat No.: _____ *Enrolment No._____*

GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. - SEMESTER – II • EXAMINATION – SUMMER • 2014

Subject code: 1720305 **Date: 20-06-2014**

Subject Name: Applied Transducers

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 mark.**

Q.1	**(a)**	Explain the principle of linear and rotary incremental position encoder.	**07**
	(b)	Explain the chopper amplifiers.	**07**
Q.2	**(a)**	Write a short note on turbine flow meter in detail.	**07**
	(b)	Draw and explain the current telemetering using four wires, three wires and two wires.	**07**
		OR	
	(b)	Explain different grounding methods and equivalent circuit to analyze them.	**07**
Q.3	**(a)**	Explain the vortex shedding flow meters in detail.	**07**
	(b)	Draw and explain the basic circuit for digital to resolver converter.	**07**
		OR	
Q.3	**(a)**	Explain the offset and drifts in op-amp.	**07**
	(b)	Draw and explain the basic circuit for resolver to digital converter.	**07**
Q.4	**(a)**	How the vibrating wire strain gauge used for multiple applications? Explain in detail.	**07**
	(b)	Find the input zero error (IZE) and output zero error (OZE) of amplifier for voltage divider and also state the heat generated and dissipated components of amplifiers.	**07**
		OR	
Q.4	**(a)**	Explain the drifts in variable resistance (potentiometer).	**07**
	(b)	Explain the composite amplifiers with suitable diagrams.	**07**
Q.5	**(a)**	Explain the applications of Thermistors in detail.	**07**
	(b)	Explain the principle of absolute position encoder.	**07**
		OR	
Q.5	**(a)**	Draw and explain the noise in transimpedance amplifier.	**07**
	(b)	Explain the application of LVDTs.	**07**

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