Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–V EXAMINATION – WINTER 2015

Subject Code: 151701 **Date:17/12/2015**

Subject Name: Industrial Measurement

Time: 10:30am to 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)**	How the Thermocouple is constructed? What is meant by cold-junction compensation? Of what practical importance it is? How may it be obtained?	**07**
	(b)	Explain the principle, working, construction and application of differential Pressure method for measurement of level in closed tank.	**07**
Q.2	**(a)**	List out different types of displacer type level detectors. Explain Torque tube type displacer level detector in detail with diagram.	**07**
	(b)	Explain in brief, the types of orifice plate and position of tapes in Orifice for flow measurement.	**07**
		OR	
	(b)	Explain: (a) rotating Paddle switch and (b) Microwave level switch in detail.	**07**
Q.3	**(a)**	What is Black body radiation? Explain Stefen-Boltzmann law and Wien's law in detail.	**07**
	(b)	Explain the principle, working, construction and application of McLeod Vacuum gauge.	**07**
		OR	
Q.3	**(a)**	Explain with neat sketch and equations, well type manometer and tilted leg type manometer.	**07**
	(b)	Write a short note on vibrating type level switches.	**07**
Q.4	**(a)**	Explain ultrasonic level measurement with neat sketch.	**07**
	(b)	How the RTD resistance is measured? Explain 2, 3 and 4 wire techniques.	**07**
		OR	
Q.4	**(a)**	Explain principle, working and construction of Rotameter.	**07**
	(b)	What are the different sources of errors in the filled system thermometers? Explain with examples.	**07**
Q.5	**(a)**	List out the factors to be considered for flow meter selection.	**07**
	(b)	Write a short note on capacitance type pressure measurement.	**07**
		OR	
Q.5	**(a)**	Derive the flow equation for compressible fluids in pipes.	**07**
	(b)	Explain Piezo electric pressure measurement with neat diagram.	**07**

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