Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VII EXAMINATION – WINTER 2015

Subject Code: 170803 **Date: 09/12/2015**

Subject Name: Electrical and Electronics Measuring Instruments

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)**	Explain construction and working of L.V.D.T.	**07**
	(b)	What is measurement standard? List out different types of standard. Explain voltage standard in brief.	**07**
Q.2	**(a)**	Explain construction and working of potential transformer. Also explain ratio and phase angle error.	**07**
	(b)	Explain Maxwell's bridge for measurement of unknown inductance. Also determine condition for balance with phasor diagram.	**07**
		OR	
	(b)	Define: (1) Accuracy (2) Precision (3) Resolution (4) Sensitivity (5) Threshold (6) Drift (7) Reproducibility	**07**
Q.3	**(a)**	Describe the working of Hay's bridge for the measurement of inductance. Derive the condition for balance and draw the phasor diagram.	**07**
	(b)	What are the problems associated with high resistance? Explain any one method for measurement of insulation resistance of a cable.	**07**
		OR	
Q.3	**(a)**	Explain working of Anderson bridge. Also derive equation when the bridge in balance condition.	**07**
	(b)	Write a short note on De Sauty's bridge.	**07**
Q.4	**(a)**	What is an electrical transducer? What are the basic requirements of transducer? Give the classification of transducer.	**07**
	(b)	Explain construction and working of Hall effect transducer.	**07**
		OR	
Q.4	**(a)**	Give construction and explain working of Thermocouple. Also state merits and demerits and application of it.	**07**
	(b)	Explain working principle of induction type energy meter.	**07**
Q.5	**(a)**	Explain a method for measuring of insulation resistance of cable.	**07**
	(b)	Explain with block diagram the working of Digital Storage Oscilloscope	**07**
		OR	
Q.5	**(a)**	Draw the block diagram of basic CRO. Also describe procedure to measure Time, frequency and phase angle using CRO.	**07**
	(b)	Explain with the help of block diagram the working of spectrum analyzer.	**07**

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