Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

B. E. - SEMESTER – VI • EXAMINATION – WINTER 2012

Subject code: 160905 **Date: 07/01/2013**

Subject Name: Electrical & Electronics Measurement

Time: 02.30 pm - 05.00 pm **Total Marks: 70**

Instructions:

1. **Attempt any five questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Explain the following terms. 1. Accuracy 2. Precision 3. Resolution 4. Sensitivity	**07**
	(b)	Explain Maxwell's Bridge for measurement of self-inductance.	**07**
Q.2	**(a)**	Usages of Wein's Bridge and derive the expression of frequency in terms of its parameters.	**07**
	(b)	Usages of De Sauty's Bridge and derive the equation for the same.	**07**
		OR	
	(b)	Derive the equation of capacitance and dissipation factor according to the working of Schering Bridge.	**07**
Q.3	**(a)**	Principle and working of Digital LCR meter	**07**
	(b)	Kelvin's double bridge, explain its working with diagram.	**07**
		OR	
Q.3	**(a)**	Explain Anderson's Bridge.	**07**
	(b)	Measurement of earth resistance, describe methods with diagram.	**07**
Q.4	**(a)**	Describe the Varley loop test.	**07**
	(b)	Explain construction and working of flux meter.	**07**
		OR	
Q.4	**(a)**	Derive equation for ratio and phase angel error of a potential transformer.	**07**
	(b)	What are the problems with measurement of high resistance? Derive equation for measurement of insulation resistance.	**07**
Q.5	**(a)**	Explain Heterodyne wave analyzer with necessary block dia.	**07**
	(b)	Explain construction and working of current transformer.	**07**
		OR	
Q.5	**(a)**	Which methods are used for measurement of low resistance, explain any one.	**07**
	(b)	Describe the method for determination of B-H curve of magnetic material.	**07**

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