Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

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

Subject code: 170803 **Date: 01/01/2013**

Subject Name: Electrical and Electronics Measuring Instruments

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.**

Q.1	**(a)**	Define and explain the types of errors possible in an instrument.	**07**
	(b)	Explain construction and working of L.V.D.T.	**07**
Q.2	**(a)**	What do you mean by Low, Medium and High resistance? State different methods to measure low resistance. Explain any one in details.	**07**
	(b)	What is Standard? Explain the different types of standards briefly.	**07**
		OR	
	(b)	Explain a method for measuring of insulation resistance of cable.	**07**
Q.3	**(a)**	Explain working of Maxwell bridge with its circuit diagram and phasor diagram.	**07**
	(b)	Derive the equation of balance of a Schering bridge. Draw the phasor dia. Under null condition.	**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)**	Explain the principle and operation of Current Transformer and also the Ratio and Phase angle error.	**07**
	(b)	Explain construction and working of Induction type wattmeter.	**07**
		OR	
Q.4	**(a)**	Give the theory of Potential transformer and calculate the ratio aerror.nd phase angle	**07**
	(b)	Explain working principle of induction type energy meter.	**07**
Q.5	**(a)**	What is Transducer? Classify different type of Transducers.	**07**
	(b)	Explain the term Gauge factor with respect to resistance Strain gauge. Obtain an expression for the gauge factor in terms of Poisson's ratio.	**07**
		OR	
Q.5	**(a)**	Explain construction and working of Hall effect.	**07**
	(b)	Give construction and explain working of Thermocouple. Also state merits and demerits and application of it.	**07**

****