Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

B E Sem-VI Examination May 2011

Subject code: 160905 Subject Name: Electrical & Electronic Measurement

Date:23/05/2011 **Time: 10.30 am – 01.00 pm**

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)**	Classified error with their remedies.	**07**
	(b)	Explain Maxwell's bridge for measurement of self inductance.	**07**
Q.2	**(a)**	Derive equation for De sauty's bridge for capacitor measurement with diagram.	**07**
	(b)	Explain Schering Bridge with diagram	**07**
		OR	
	(b)	Explain Campbell's bridge.	**07**
Q.3	**(a)**	Which methods are used for the frequency measurement Explain any one.	**07**
	(b)	Limitation for the bridge measurement and their minimization	**07**
		OR	
Q.3	**(a)**	Explain Anderson's bridge.	**07**
	(b)	Principal and working of digital LCR meter.	**07**
Q.4	**(a)**	What are the problems with measurement of high resistance, Derive equation for measurement of insulation resistance.	**07**
	(b)	The four arms of bridge are as per given Arm AB : capacitor C1 with internal resistor r1 Arm BC: Non inductive resistance of R4=2000Ohm. Arm CD: Non inductive resistance of R3=2850Ohm Arm DA: capacitor C2= 0.5micro F, internal resistance r2=0.4Ohm and Resistor R2=4.8Ohm. Supply frequency 50hz between A and C and detector between B and D. For balance by above component. Find out capacitance C1 and internal resistor r1.	**07**
		OR	
Q.4	**(a)**	Explain construction features and working of flux meter	**07**
	(b)	Derive equation for ratio and phase angle error of a potential transformer.	**07**
Q.5	**(a)**	Discuss the Varley loop test method for detection of cable fault.	**07**
	(b)	A single turn 200/5 Amp. C.T. has non-inductive burden of 1 Ohm. Magnetizing current is 80Amp. Calculate current ratio and phase angle of transformer.	**07**
		OR	
Q.5	**(a)**	Explain construction and working of current transformer.	**07**
	(b)	Which methods are used for measurement of low resistance, Explain any one.	**07**

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