Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VI • EXAMINATION – SUMMER • 2015

Subject Code:160905 Date:12/05/2015

Subject Name:Electrical and Electronic Measurement

Time:10.30am-01.00pm 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)**	State the methods for measurement of high resistance and explain any one in detail.	**07**
	(b)	Explain the following terms, 1. Sensitivity 2. Accuracy 3. Drift 4. Precision 5. Linearity 6. Resolution 7. Stability.	**07**
Q.2	**(a)**	Explain Maxwell's inductance-capacitance bridge with circuit diagram and phasor diagram. Derive the condition for balance.	**07**
	(b)	Describe sources and null detector used in A.C. bridge	**07**
		OR	
	(b)	Derive equation for De sauty's bridge for capacitor measurement with diagram.	**07**
Q.3	**(a)**	Draw the circuit of Kelvin's double bridge used for measurement of low resistance. Derive the condition for balance.	**07**
	(b)	Explain Murray loop test for localization of ground and short circuit fault in cables.	**07**
		OR	
Q.3	**(a)**	Describe the varley loop test for localization of ground and short circuit fault in cables.	**07**
	(b)	Explain fall of potential method for measurement of earth resistance.	**07**
Q.4	**(a)**	Draw the equivalent circuit and phasor diagram of a current transformer. Derive the expression for ratio and phase angle errors.	**07**
	(b)	Discuss principle and working of digital LCR meter.	**07**
		OR	
Q.4	**(a)**	Describe the method for determination of B-H curve of magnetic material.	**07**
	(b)	Explain comparision method of testing of potential transformer.	**07**
Q.5	**(a)**	Explain Harmonic distortion analyser.	**07**
	(b)	Explain constructional features and working of flux meter.	**07**
		OR	
Q.5	**(a)**	Discuss applications of spectrum analyser.	**07**
	(b)	State the requirements of a good instrumentation amplifier.	**07**

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