Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE SEMESTER VII– • EXAMINATION – SUMMER 2015

Subject Code: 170803 **Date: 12/05/2015**

Subject Name: Electrical And Electronics Measuring Instruments

Time: 02.30PM-05.00PM **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 Maxwell's bridge. Determine condition for balance. Also mention its applications.	**07**
	(b)	Define and explain different types of error that may occur in measurements.	**07**
Q.2	**(a)**	Explain working principle of induction type energy meter.	**07**
	(b)	What do you mean by Low, Medium and High resistance? State different methods to measure low resistance. Explain any one in details.	**07**
		OR	
	(b)	Explain working of Schering bridge with application.	**07**
Q.3	**(a)**	What is difference between Current transformer and Potential transformer? Explain construction of potential transformers.	**07**
	(b)	Discuss design features to minimize the error in current transformers.	**07**
		OR	
Q.3	**(a)**	Explain current transformer, Errors in current transformers and causes of errors in current transformers.	**07**
	(b)	A wattmeter has a current coil of 0.03Ω resistance and pressure coil of 6000Ω resistance. If the load takes 20A at a voltage of 220V and 0.6 power factor. Calculate (a) The percentage error if the wattmeter is so connected that (i) The current coil is on the load side (ii)The pressure coil is on the load side (b) What load current would give equal errors with the two connections?	**07**
Q.4	**(a)**	State different types of transducers used for the measurement of temperature. Explain thermistor in detail.	**07**
	(b)	Explain construction and working of L.V.D.T.	**07**
		OR	
Q.4	**(a)**	Explain different factors to be considered while selection of transducers.	**07**
	(b)	Explain piezo electric transducers.	**07**
Q.5	**(a)**	Draw the block diagram of storage oscilloscope and explain the working of each block.	**07**
	(b)	Explain with the help of a block diagram the working of a spectrum analyzer? Where is spectrum analyzers commonly used?	**07**
		OR	

Q.5	**(a)**	Explain with the help of neat diagram the working of a digital voltmeter.	**07**
	(b)	Write short note on Data Acquisition System.	**07**

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