Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–III EXAMINATION – WINTER 2015

Subject Code:130903 **Date:18/12/2015**

Subject Name: Electrical and Electronics Measuring Instruments

Time: 2:30pm to 5:00pm **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 and explain different types of Voltage standards.	**07**
	(b)	Explain with suitable example 1) Accuracy 2) Precision 3) Sensitivity 4) Resolution	**07**
Q.2	**(a)**	What is Low, Medium and High resistance? State different methods foor the measurement of High resistance Explain any one in details.	**07**
	(b)	Explain different types of effects used to produce operating torque in measuring instruments.	**07**
		OR	
	(b)	Explain construction working of D'Arsnaval galvanometer. Also derive its torque equation.	**07**
Q.3	**(a)**	Explain construction and working of PMMC instruments. Also states its advantages and disadvantages.	**07**
	(b)	Why scale of a moving iron instruments is non uniform? Also give comparison between Moving coil and Moving Iron instruments.	**07**
		OR	
Q.3	**(a)**	Explain different types of methods to produce Damping torque.	**07**
	(b)	Explain construction and working of Electrodynamometer type instrument.	**07**
Q.4	**(a)**	Using expression for torque in single phase induction type meters, Show that the total no of revolutions made by its disc during a particular time is proportional to the energy consumed.	**07**
	(b)	Explain construction and working of Single phase Induction type watt hour meter.	**07**
		OR	
Q.4	**(a)**	Explain the circuit diagram and operation of an Electronic Voltmeter using a differential amplifier.	**07**
	(b)	Explain measurement of power in three phase circuit.	**07**
Q.5	**(a)**	What are the various types of errors encountered in electrical measurements? Explain in detail.	**07**
	(b)	Explain the principle of operation of an electrostatic instrument.	**07**
		OR	
Q.5	**(a)**	Explain resistance standards.	**07**
	(b)	Explain the various factors which are taken in to consideration while selecting an electronic type analog voltmeter.	**07**

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