Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–III • EXAMINATION – WINTER • 2014

Subject Code: 2130903 Date: 18-12-2014

Subject Name: Electrical Measurements and Measuring Instruments

Time: 02.30 pm - 05.00 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)**	Define and explain: (1)Accuracy (2) Precision	**07**
	(b)	State different errors in measurement and explain any three.	**07**
Q.2	**(a)**	Draw neat sketch of single phase electrodynamometer type power factor meter. Explain its working.	**07**
	(b)	Explain two wattmeter method used to measure power of a 3-phase balanced load.	**07**
		OR	
	(b)	Explain working of Kelvin's double bridge for measurement of low resistance with neat diagram.	**07**
Q.3	**(a)**	Explain measurement of inductance with the help of Hay's Bridge. Write advantages and disadvantages of Hay's Bridge.	**07**
	(b)	Explain the working of digital volt meter with schematic block diagram.	**07**
		OR	
Q.3	**(a)**	Describe the working of a digital frequency meter with schematic block diagram.	**07**
	(b)	Define transducer and classify transducers on different basis.	**07**
Q.4	**(a)**	Describe the construction and working of L.V.D.T. with neat sketches. Draw its output characteristics. State advantages and disadvantages of it.	**07**
	(b)	Explain AC tachometer generator with neat diagram and write limitations of it.	**07**
		OR	
Q.4	**(a)**	State different types of torque measurement techniques and explain any one in brief.	**07**
	(b)	Explain the principle of operation and construction of RTD .	**07**
Q.5	**(a)**	What is Hall effect? Describe the construction, working principle of Hall effect Transducers and write its applications.	**07**
	(b)	State different pressure measurement techniques. Explain any one in detail.	**07**
		OR	
Q.5	**(a)**	Describe how to make extension of range of voltmeter and ammeter.	**07**
	(b)	Describe digital storage oscilloscope with schematic block diagram and state its applications.	**07**

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