Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–IV (New) EXAMINATION – WINTER 2015

Subject Code:2141003 **Date:28/12/2015**

Subject Name: Electronics Measurement and Instrumentation

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)**	Explain the following terms 1. Sensitivity 2. Reproducibility 3. Drift 4. Precision 5. Linearity 6. Dead time 7. Repeatability	**07**
	(b)	Explain Anderson bridge with vector diagram and also derives balance equation.	**07**
Q.2	**(a)**	Describe the working of a digital frequency meter with schematic block diagram.	**07**
	(b)	Draw the circuit of Kelvin's double bridge used for measurement of low resistance. Derive the condition for balance.	**07**
		OR	
	(b)	Explain salient features of Maxwell's Inductance capacitance bridge. Draw phasor diagram and derive balance equation.	**07**
Q.3	**(a)**	Explain True RMS Reading Voltmeter.	**07**
	(b)	Draw the block diagram of an oscilloscope and explain briefly its major system.	**07**
		OR	
Q.3	**(a)**	Describe digital storage oscilloscope with schematic block diagram and state its Applications.	**07**
	(b)	Explain Vector Impedance Meter.	**07**
Q.4	**(a)**	Explain harmonic distortion analyzer.	**07**
	(b)	Describe the working of a frequency synthesizer with schematic block diagram.	**07**
		OR	
Q.4	**(a)**	Explain frequency selective wave analyzer with block diagram.	**07**
	(b)	Describe the construction and working of L.V.D.T. with neat sketches. Draw its Output characteristics. State advantages and disadvantages of it.	**07**
Q.5	**(a)**	Explain the Principle of Hall effect and measure the displacement and current using Hall sensor.	**07**
	(b)	Explain the working of a Multi channel DAS with block diagram.	**07**
		OR	
Q.5	**(a)**	Explain the measurement of phase difference using X-OR and SR flip flop.	**07**
	(b)	Where are Sample and Hold circuits used? Sketch the circuit arrangement along with output waveforms and discuss briefly the operation of the circuit.	**07**

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