Seat No.: _____ **Enrolment No._____**

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–IV (NEW) - EXAMINATION – SUMMER 2017

Subject Code: 2141003 **Date: 03/06/2017**

Subject Name: Electronics Measurement and Instruments

Time: 10:30 AM to 01:00 PM **Total Marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

			MARKS
Q.1		**Explain the following terms:**	**14**
	1	Accuracy	
	2	Repeatability	
	3	Dead time	
	4	Linearity	
	5	Resolution	
	6	Stability	
	7	Precision	
	8	Reproducibility	
	9	Drift	
	10	Sensitivity	
	11	systematic and Random error	
	12	Trigger Level Error.	
	13	Time Base Error	
	14	Gating Error	
Q.2	**(a)**	Draw the block diagram of a.c. signal conditioning and explain in brief.	**03**
	(b)	Describe the working of a digital frequency meter with schematic block diagram.	**04**
	(c)	Draw the circuit of Kelvin's double bridge used for measurement of low resistance. Derive the condition for balance.	**07**
		OR	
	(c)	Explain the element of Digital Data acquisition system. Differentiate Analog Das and Digital DAS	**07**
Q.3	**(a)**	Draw Desauty's bridge and derive its balance condition.	**03**
	(b)	Explain with the help of neat diagram Principle of Hall effect transducer.	**04**
	(c)	What is vector impedance meter? Draw and explain its working.	**07**
		OR	
Q.3	**(a)**	List the application of Digital storage oscilloscope.	**03**
	(b)	Explain PC based data acquisition system.	**04**
	(c)	Draw the block diagram of an oscilloscope and explain briefly its major system.	**07**
Q.4	**(a)**	Explain different techniques used for extending frequency measurement range.	**03**
	(b)	Describe square wave generator with suitable diagram and working.	**04**
	(c)	Describe the working of a spectrum analyzer with the help of block diagram.	**07**
		OR	
Q.4	**(a)**	Explain the concept of ground loop and ground loop interface.	**03**
	(b)	What is need for isolation and explain transformer isolation in brief.	**04**
	(c)	With the help of block diagram describe the working of Sweep Frequency Generator.	**07**
Q.5	**(a)**	Explain True RMS Reading Voltmeter.	**03**
	(b)	Explain the use of doubly shielded cables to reduce ground loop interface.	**04**

	(c)	Describe the construction and working of L.V.D.T. with neat sketches. Explain its various performance characteristic.	**07**

OR

Q.5	**(a)**	Write short note on current to pneumatic (I to P) converter.	**03**
	(b)	Explain different types of capacitive transducer.	**04**
	(c)	Explain the measurement of phase difference using X-OR and SR flip flop.	**07**

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