Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

ME – SEMESTER III (NEW) – EXAMINATION – WINTER-2016

Subject Code: 2730305 **Date:25/10/2016**

Subject Name: Virtual Instrumentation

Time:02:30 pm to 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)**	Give detail Comparison of Virtual Instrumentation with hard wired instruments.	**07**
	(b)	Explain detail architecture of Virtual Instrumentation.	**07**
Q.2	**(a)**	Enlist the silent features of VI and its applications area in various engineering field.	**07**
	(b)	Explain below given programming concepts with example • VIs and SUBVIs • Clusters	**07**
		OR	
	(b)	Explain concepts of Global and local variable with any example.	**07**
Q.3	**(a)**	Write a short note on PC Hardware structure for VI systems.	**07**
	(b)	Explain technical aspects for USB interface with VI system.	**07**
		OR	
Q.3	**(a)**	Draw the physical bus structure of GPIB with description of each pin function.	**07**
	(b)	Discuss the role of software in Virtual Instrumentation.	**07**
Q.4	**(a)**	Discuss various Data communication functions available in LABVIEW.	**07**
	(b)	Explain use of Virtual instrumentation for process control designing application with any one Example.	**07**
		OR	
Q.4	**(a)**	Explain technical aspects of data acquisition systems for Analog and Digital Input.	**07**
	(b)	Enlist and explain various features of PCI.	**07**
Q.5	**(a)**	What is the limitation of RS-232 communication? Explain features of RS-485.	**07**
	(b)	Explain concepts of Sampling theorem and antialiasing filters implementation.	**07**
		OR	
Q.5	**(a)**	Explain the various functions available for time domain and frequency domain analysis.	**07**
	(b)	Explain use of Virtual instrumentation for Digital signal processing application with any one Example.	**07**

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