Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

ME – SEMESTER II– EXAMINATION – WINTER - 2016			
Su	bject	Code: 2723101 Date: 19/11/ 20	16
Su	bject	Name: Virtual Biomedical Instrumentation	
		2:30 pm to 5:00 pm Total Marks:	70
Ins	tructio		
		Attempt all questions. Make suitable assumptions wherever necessary.	
		Figures to the right indicate full marks	
Q.1	(a)	Give detail comparison of conventional programming technique with virtual instrumentation.	07
	(b)	Draw and explain the architecture of virtual Instrumentation.	07
Q.2	(a) (b)	Explain role of hardware and software in virtual instrumentation. Discuss various Loop functions for controlling program flow. OR	07 07
	(b)	Explain case & sequence structures for controlling program flow.	07
Q.3	(a) (b)	Draw and explain the block diagram of virtual ECG machine. Enlist all types D-to-A converters. Explain any one in detail. OR	07 07
Q.3	(a) (b)	Define or explain following terms • Local & global variables • Clusters • arrays Enlist all types A-to-D converters. Explain any one in detail.	07
Q.4	(a) (b)	Explain RS232 interface with pin descriptions and Limitations. Explain the characteristics of different types of window functions. OR	07 07
Q.4	(a) (b)	Explain 4 to 20 mA current loop interfacing concept with necessary schematic. Draw and explain Physical bus structure of GPIB. Enlist advantages of GPIB.	07 07
Q.5	(a) (b)	Draw and Explain block diagram of any virtual image processing application. Explain architecture of PCI Extension for Instrumentation (PXI) interface. OR	07 07
Q.5	(a) (b)	Draw and Explain block diagram of digital multi-meter application. Write a short note on Historical perspective of virtual instrumentation.	07 07
