Reg No.:_____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

V SEMESTER B.TECH DEGREE EXAMINATION, DECEMBER 2018

Course Code: AE361

Course Name: VIRTUAL INSTRUMENT DESIGN

Max. Marks: 100 Duration: 3 Hours

PART A

Answer any two full questions, each carries 15 marks. Marks

1	a)	Explain in detail about the representation of analog signals in the digital domain.	(3)
	b)	Give a detailed note on Digital Instrumentation and its advantages.	(4)
	c)	With neat diagram explain the working and differences of a 3 bit R-2R ladder DAC and 3 bit binary weighted resistor network DAC.	(8)
2	a)	How a successive approximation ADC works? Explain with neat diagrams.	(5)
	b)	What is the significance of ADC in digital instrumentation? List any four ADC's.	(3)
	c)	How a Virtual Instrument differs from Traditional Instrument? Draw the schematic of both.	(7)
3	a)	LabVIEW follows a data flow technique for running VI's. Explain with an example.	(5)
	b)	What are the advantages of graphical programming over conventional programming techniques?	(5)
	c)	With a neat diagram explain the architecture of VI.	(5)

PART B

Answer any two full questions, each carries 15 marks.

4	a)	Discuss about a multidimensional array. How is it differs from one-dimensional array?	(4)
	b)	What is a For Loop? Under what circumstances are For Loops used?How does a While Loop vary from a For Loop?	(6)
	c)	How a case structure and sequence structure differs? Explain with necessary examples.	(5)
5	a)	Explain in detail about publishing of measurement data in web. How it can be done with LabVIEW?	(4)
	b)	How a cluster differs from array?	(3)
	c)	How a typical PC based Data Acquisition System works? Explain in detail with neat block schematic.	(8)

6	a)	What is meant by resolution of data acquisition system?	(5)
	b)	Explain in detail about DMA transfer mechanism with neat schematic. List its 3 types of data transfer operations.	(10)

PART C

Answer any two full questions,each carries 20 marks.

7	a)	Write a short note on USB interface.	(4)
	b)	Explain GPIB bus topology with neat schematic.	(7)
	c)	Describe the following: (a) SCSI (b) PXI (c) Ethernet control of PXI	(9)
8	a)	Describe the basic operations and programming under VISA.	(6)
	b)	Define VXI bus interface and its merits.	(4)
	c)	Explain about Motion control system using VI with a neat schematic	(10)
9	a)	Explain the development of a control system using VI.	(10)
	b)	Describe the development of process database management system using VI.	(10)

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