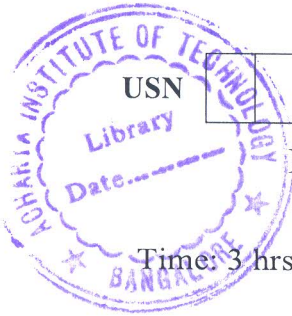


CBCS SCHEME

15MT52



Fifth Semester B.E. Degree Examination, June/July 2019 Virtual Instrumentation

Max. Marks: 80

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Define virtual instrumentation(VI) and design the architecture of virtual instrumentation with necessary explanation. (10 Marks)
b. Differentiate single ended and differential inputs in a DAQ. (06 Marks)

OR

- 2 a. Summarize the major components of a PC based data acquisition system and explain with a neat diagram. (08 Marks)
b. Describe the advantages of virtual instrumentation. (03 Marks)
c. Differentiate between graphical and textual programming. (05 Marks)

Module-2

- 3 a. With a neat diagram, explain the working of a dual slope ADC techniques. Mention its applications. (08 Marks)
b. Discuss the operation of sample and hold circuit. (08 Marks)

OR

- 4 a. Describe the counters and timers which are used in DAQ. (08 Marks)
b. Explain the software and hardware installations, which is used in DAQ. (08 Marks)

Module-3

- 5 a. Define sub Virtual instrumentation create a virtual instrumentation to compute full adder logic using half adder as sub virtual instrumentation. (08 Marks)
b. Mention structure in LABVIEW software and distinguish between case and sequence structure. (08 Marks)

OR

- 6 a. Explain looping in LABVIEW and classify the loops with details flowchart. (08 Marks)
b. Describe the basics of file input output system and explain any three file formats which is used in file input output system. (08 Marks)

Module-4

- 7 a. Describe the interfacing of RS-232 and Rs 422 ports to PC. (08 Marks)
b. Explain MOD bus and CAN bus in detail. (08 Marks)

OR

- 8 a. With a neat sketch, explain ISO/OSI model for serial communication. (08 Marks)
b. Explain IEEE488 standard with a neat diagram. (08 Marks)

Module-5

- 9 a. Build a self tuning PID controller using LabView. (08 Marks)
b. Design a second order system using LabView. (08 Marks)

OR

- 10 Write short notes on :
a. ON/OFF controller c. Correlation function
b. Fourier transform d. Windowing and filtering tools. (16 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.