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10MT843

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

Time: 3 hrs.

Max. Marks: 100

**Note: Answer any FIVE full questions, selecting at least TWO questions from each part.**

**PART – A**

- 1 a. Explain the working operation of sample and hold circuits with neat circuit diagram. (10 Marks)
- b. Explain the following :
  - i) Sampling theorem
  - ii) Analog to Digital Converters. (10 Marks)
- 2 a. Explain the architectures of virtual instrumentation with neat block diagram. (10 Marks)
- b. Write a short note on :
  - i) Single ended inputs
  - ii) Differential ended inputs. (10 Marks)
- 3 a. Explain the working operation of PC based Data Acquisition system with neat block diagram. (10 Marks)
- b. Explain the concepts of universal Data Acquisition system. (10 Marks)
- 4 a. Explain the architectures of IEEE 488 bus system with neat diagram. (10 Marks)
- b. Explain the working operation of CAN controller with neat diagram. (10 Marks)

**PART – B**

- 5 a. Define Labview. Explain the important components of Labview. (10 Marks)
- b. Design and implement full adder using Labview. (10 Marks)
- 6 a. Explain the concepts of “for loop” and “while loop” used in Labview. (10 Marks)
- b. Explain one-dimensional and two dimensional Array with an example. (06 Marks)
- c. Explain the following :
  - i) Case structures
  - ii) Events structures. (04 Marks)
- 7 a. Design and implement ON/OFF Boolean indicator for every one second using Labview. (10 Marks)
- b. Design and implement temperature monitoring system using Labview. (10 Marks)
- 8 a. Design and implement second order system response using Labview. (10 Marks)
- b. Write a short note on :
  - i) Fourier Transform
  - ii) Windowing and filtering. (10 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.