

# CBCS SCHEME

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18MT53

## Fifth Semester B.E. Degree Examination, Feb./Mar. 2022 Virtual Instrumentation

Time: 3 hrs.

Max. Marks: 100

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

### Module-1

- 1 a. Define Virtual Instrumentation. Explain the architecture of virtual instrumentation with neat block diagram. (12 Marks)  
b. Comparison between conventional programming with graphical programming. (08 Marks)

OR

- 2 a. Explain the operation of single ended and differential ended inputs. (10 Marks)  
b. Explain the concepts of universal DAQ card. (10 Marks)

### Module-2

- 3 a. Explain the operation of sample and hold circuit with neat diagram. (10 Marks)  
b. Explain the operation of PC based data acquisition system with neat diagram. (10 Marks)

OR

- 4 a. Explain the operation of analog to digital converter with neat diagram. (10 Marks)  
b. Explain the concepts of Hardware and software installation with help of NI-MAX. (10 Marks)

### Module-3

- 5 a. Define LabVIEW. Explain the important components of LabVIEW. (10 Marks)  
b. Design an full adder circuit using two halfadder with the help of LabVIEW. (10 Marks)

OR

- 6 a. Define structures. Explain the concepts of case structures and sequence structures with examples. (10 Marks)  
b. Define Array. Explain the concepts of one-dimensional and two dimensional array with example. (10 Marks)

### Module-4

- 7 a. Compare RS-232, RS-422, RS-485 and USB standard. (10 Marks)  
b. Explain the architecture of IEEE-488 bus system with neat diagram. (10 Marks)

OR

- 8 a. Explain the architecture of CAN bus with help of neat diagrams. (10 Marks)  
b. Explain the architecture of OSI model with neat diagram. (10 Marks)

### Module-5

- 9 a. Design a VI for simple second order system with a LabVIEW. (10 Marks)  
b. Design a VI for CRO simulation with the help of LabVIEW. (10 Marks)

OR

- 10 a. Design a VI for simple temperature indicator with help of LabVIEW. (10 Marks)  
b. Design a VI for generation of HTML page with help of LabVIEW. (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.