CBCS SCHEME

USN | | | | | | | | | | |

18MT53

Fifth Semester B.E. Degree Examination, June/July 2023
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 need of VI. **(10 Marks)**
b. Explain architecture of VI with neat block diagram. **(10 Marks)**

OR

2 a. Explain the concept of data flow techniques and explain graphical programming in data flow. **(10 Marks)**
b. Explain the concept of multiplexing of analog inputs and explain different types of multiplexing technique. **(10 Marks)**

Module-2

3 a. Explain the concept of timers and counters in virtual instrumentation. **(10 Marks)**
b. Explain the working operation of digital to analog converter. **(10 Marks)**

OR

4 a. Explain the concept of direct memory access with basic operation of DMA. **(10 Marks)**
b. Explain the working operation of analog to digital converter. **(10 Marks)**

Module-3

5 a. Define LABVIEW. Explain the important components of LABVIEW. **(10 Marks)**
b. Define array. Explain array functions with example. **(10 Marks)**

OR

6 a. Define string. Explain string functions with example. **(10 Marks)**
b. Write short notes on: i) Formula node ii) Sequence structures. **(10 Marks)**

Module-4

7 a. Explain the following RS-232, RS-422, RS-485 and USB. **(10 Marks)**
b. Explain the architecture of CAN controller, with neat diagram. **(10 Marks)**

OR

8 a. Explain the architecture of OSI model with neat diagram. **(10 Marks)**
b. Explain the architecture of Modbus protocol with neat diagram. **(10 Marks)**

Module-5

9 a. Write short notes on: i) Fourier transform ii) Power spectrum iii) Windowing and Filtering. **(10 Marks)**
b. Write and explain the design of PID controller. **(10 Marks)**

OR

10 a. Design and implement CRO simulation using labview. **(10 Marks)**
b. Explain correlation concept in detail. **(10 Marks)**

* * * * *