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CBCS SCHEME

ACHARYA INSTITUTE OF TECHNOLOGY Library Date..... BANGALORE

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

17MT52

Fifth Semester B.E. Degree Examination, Dec.2019/Jan.2020
Virtual Instrumentation

Time: 3 hrs. Max. Marks: 100

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

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.

Module-1

1 a. Explain the working of PC based data acquisition system. **(10 Marks)**

b. Explain the concept of multiplexing the analog inputs and briefly explain the types. **(10 Marks)**

OR

2 a. Define Virtual Instrumentation (VI). Explain the architecture of VI. **(10 Marks)**

b. Explain the operation of single ended input and differential inputs with neat diagram. **(10 Marks)**

Module-2

3 a. Define sampling and explain the working of sample and hold circuit with neat sketches. **(10 Marks)**

b. Explain different I/O techniques used in data acquisition using a flow chart. **(10 Marks)**

OR

4 a. Explain the concept of successive Approximation Analog to Digital converter. **(10 Marks)**

b. Explain the concept of Digital I/O in data acquisition system. **(10 Marks)**

Module-3

5 a. Define structures. Explain different types of structures available in Lab view. **(10 Marks)**

b. Define Labview. Explain the important components of Labview. **(10 Marks)**

OR

6 a. With the example, explain any five string functions. **(10 Marks)**

b. Explain the significance of file I/O in Labview. Also explain different types of file I/O formats available in Labview. **(10 Marks)**

Module-4

7 a. Explain the architecture of OSI model. **(10 Marks)**

b. Explain the architecture of IEEE 488 bus system with neat diagram. **(10 Marks)**

OR

8 a. With the neat diagram, explain mod Bus protocol. **(10 Marks)**

b. Explain the concept of Universal Serial Bus. **(10 Marks)**

Module-5

9 a. Design a PID controller. **(10 Marks)**

b. Build a VI for simple second order system. **(10 Marks)**

OR

10 a. Design a temperature monitoring system for continuously monitoring the heat exchanger using Labview. **(10 Marks)**

b. Design a VI for generation of HTML page. **(10 Marks)**

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