USN ☐☐☐☐☐☐☐☐☐☐ **18RA53**

Fifth Semester B.Tech. Degree Examination, Jan./Feb. 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. Explain the essential need for virtual instrumentation and compare it with the traditional instruments. **(10 Marks)**
   b. With a neat diagram, explain the layers of virtual instrumentation software. Briefly explain software and hardware role. **(10 Marks)**

OR

2 a. Compare graphical programming with traditional programming. **(10 Marks)**
   b. Explain virtual instrumentation with neat block diagram and architecture. **(10 Marks)**

Module-2

3 a. What are the major components of a PC-based data acquisition system? **(10 Marks)**
   b. Explain the terms analog inputs, analog outputs and digital I/O with respect to data acquisition. **(10 Marks)**

OR

4 a. Explain the digital acquisition hardware's and its configuration. **(10 Marks)**
   b. Draw the block diagram and explain the measurement software framework. **(10 Marks)**

Module-3

5 a. Describe the while loop and for loops with examples. **(10 Marks)**
   b. Explain array and its function in detail. **(10 Marks)**

OR

6 a. What is string? Explain various string functions and formatting functions. **(10 Marks)**
   b. Discuss in detail about different structures with examples. **(10 Marks)**

Module-4

7 a. Explain serial port communication in Lab VIEW. Compare RS232, RS422 and RS485. **(12 Marks)**
   b. Define cluster. Explain the cluster functions. **(08 Marks)**

OR

8 a. Explain the use of error clusters with the help of an example. **(10 Marks)**
   b. Explain operations of clusters with example. **(10 Marks)**

Module-5

9 a. Define VI. Explain the applications of VI. **(10 Marks)**
   b. Discuss in detail about PID controller. **(10 Marks)**

OR

10 a. Explain in detail about windowing and filtering tools. **(10 Marks)**
   b. Discuss in detail about generation of HTML page. **(10 Marks)**

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