

CBCS SCHEME

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18MT53

Fifth Semester B.E. Degree Examination, July/August 2021 Virtual Instrumentation

Time: 3 hrs.

Max. Marks:100

Note: Answer any FIVE full questions.

- 1 a. Define Virtual Instrumentation (VI). Explain the architecture of VI. (10 Marks)
b. Outline the operation of single ended input and differential inputs with a neat diagram. (10 Marks)
- 2 a. Outline the differences between graphical and textual programming. (10 Marks)
b. Define multiplexing of the analog signals. Briefly explain the types of multiplexing. (10 Marks)
- 3 a. Explain sample and hold circuit with a neat sketch. (10 Marks)
b. Summarize the working of successive approximation ADC with an example. (10 Marks)
- 4 a. Explain the different I/O techniques used in data acquisition using a flow chart. (10 Marks)
b. Describe counters and timers used in Labview. (10 Marks)
- 5 a. What is Labview? Explain the main components of Labview. (10 Marks)
b. What is a sub VI? Outline a virtual instrument program to compute full adder using sub VI. (10 Marks)
- 6 a. List structures used in Labview. Mention the differences between case and sequence structure. (10 Marks)
b. Outline a VI to find the factorial of a given number using loops. (10 Marks)
- 7 a. Explain RS232 interfacing in detail, with a neat diagram. (10 Marks)
b. Draw and explain ISO/OSI model for serial bus. (10 Marks)
- 8 a. Explain MODBUS in detail. (10 Marks)
b. Explain IEEE 488/GP IB standard with neat diagram. (10 Marks)
- 9 a. Design a PID controller using Labview. (10 Marks)
b. Design a VI for generation of HTML page. (10 Marks)
- 10 a. Write short note on :
i) On-off controller
ii) Windowing and filtering tools. (10 Marks)
b. Design a temperature monitoring system for heat exchanger using 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.