CBCS SCHEME

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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