GF 84

CBCS SCHEME

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

17MT52

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. Explain the architecture VI. **(10 Marks)**
b. Define multiplexing of analog signals, briefly explain the types of multiplexing. **(10 Marks)**

2 a. List the different types of data flow techniques and explain each. **(10 Marks)**
b. Summarize the working of PC Based Data Acquisition Systems. **(10 Marks)**

3 a. List the functions of I/O modules and also briefly explain any two I/O techniques. **(10 Marks)**
b. Summarize the working of successive-approximation ADC with an example. **(10 Marks)**

4 a. Explain Dual slope ADC with neat sketch. **(10 Marks)**
b. Summarize DAQ software architecture. **(10 Marks)**

5 a. What is LabView? Explain the main components of LabView. **(10 Marks)**
b. With the help of flow charts explain for loop and while loop in LabView. **(10 Marks)**

6 a. With the example explain the following string functions:
(i) String length (ii) String concatenate (iii) String subset (iv) Match pattern
(v) Build Text **(10 Marks)**
b. List structures used in LabView. Mention the difference between case and sequence structures. **(10 Marks)**

7 a. Explain the different handshake signals used in RS232 and mention the limitations of RS232. **(10 Marks)**
b. Give a brief description about IEEE 488.2 standard. **(10 Marks)**

8 a. Explain the architecture of USB. **(10 Marks)**
b. With a neat sketch explain MODBUS protocol. **(10 Marks)**

9 a. Explain the following in brief:
(i) Power spectrum (ii) Correlation (iii) Windowing and Filtering Tools
(iv) Fourier Transform. **(10 Marks)**
b. Build a VI for simple temperature indicator. **(10 Marks)**

10 a. Design a VI for generation of HTML page. **(10 Marks)**
b. Design and explain PID controller. **(10 Marks)**

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