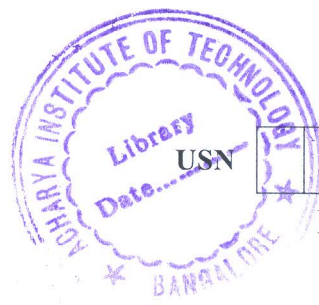


GF 24

CBCS SCHEME



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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)

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.
