

Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(EIE) (2011 Onwards E-IV) (Sem.-7,8)

**VIRTUAL INSTRUMENTATION**

Subject Code : DE-4.3

M.Code : 58054

Time : 3 Hrs.

Max. Marks : 60

**INSTRUCTION TO CANDIDATES :**

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

**SECTION-A**

**1. Answer briefly :**

- a. What is the need of VI? Discuss.
- b. Explain the significance of Sub-VI.
- c. What is the significance of global variables? Discuss.
- d. What do you mean by PXI? Explain.
- e. What is the need of interrupt? Explain.
- f. Differentiate between waveform chart and waveform graph.
- g. List the important characteristics of USB.
- h. What do you mean by power spectrum? Explain.
- i. Discuss the importance of VISA.
- j. Discuss the different functions that a cluster performs.

**SECTION-B**

2. Explain the block diagram and architecture of VI in detail. Also discuss the concept of data flow programming.
3. You are acquiring analog data that measures the volume of a tank. You want to take continual measurements when, the machinery is ON. Turning ON the machinery can act as a trigger, specifically a digital trigger, to start measuring data. Write a VI that acquire analog data only after a digital trigger has occurred.
4. What is GPIB? Discuss its various properties. Compare GPIB with RS232 and RS485.
5. What is the composition and format of an image file? Build a VI to find the histogram from the acquired image.
6. Discuss in detail the various hardware and software installations aspects required in virtual instrumentation.

**SECTION-C**

7. Build the block diagram and the front panel of a VI that act as a digital multi-meter.
8. Discuss the various structures used in LabVIEW. Also compare the corresponding structures.
9. Discuss :
  - a. Counters/Timers
  - b. Motion control

**NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.**