PSCELET08 - Paper-IV : Virtual Instrumentation

P. Pages : 1 **GUG/S/23/11202**

Time : Three Hours ‖‖‖‖‖‖‖‖‖ *1380* Max. Marks : 80

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Notes : 1. All questions are compulsory and carry equal marks.
2. Draw well labelled diagrams wherever necessary.

Either :-

1. a) Explain the architecture of Virtual Instrument. Explain the role of software in it. **8**

   b) Write a note on: **8**
      i) Express VI   ii) Sub VI

   OR

   c) Compare the text based and graphical programming techniques. **8**

   d) What is modular programming technique? What are its advantages? Explain how icon is created in Lab VIEW? **8**

   Either :-

2. a) What is looping in Lab VIEW? State the advantages of using loops. **8**

   b) Why are shift register and feedback node used in a loop? Explain with examples? **8**

   OR

   c) Explain the use of charts and graphs in Lab VIEW with suitable example. **8**

   d) List the functions used for formatting strings, and explain their uses. **8**

   Either :-

3. a) Compare the USB and IEEE-1394 communications protocol. **8**

   b) Mention difference between GPIB and serial bus communication. **8**

   OR

   c) Describe the serial port communication using RS-232. **8**

   d) Explain the role of instrument I/O assistant in Lab VIEW. **8**

   Either :-

4. a) Design a virtual instrument to acquire ECG signal and simulate it using digital signal processing. **8**

   b) Explain development process of motion control system. **8**

   OR

   c) What is digital filter? Enlist the steps to create virtual instrument for digital filter design. **8**

   d) Explain the process of prototyping with motion assistant. **8**

5. a) Name the three palettes used in programming and explain any one of them. **4**

   b) What is formula node? Explain its important in Lab VIEW. **4**

   c) What is VISA? List it's a advantages. **4**

   d) Explain PID control. **4**

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