

M.Sc.(Electronics) New CBCS Pattern Semester-II
PSCELET08 - Paper-IV : Virtual Instrumentation

P. Pages : 1

Time : Three Hours



GUG/W/23/11202

Max. Marks : 80

- Notes :
1. All questions are compulsory and carry equal marks.
 2. Draw well labelled diagrams wherever necessary.
 3. Use of log table calculator is allowed.

Either:

1. a) What is Virtual Instrumentation? Explain brief introduction of it. **8**
b) Explain various steps in creating, saving and retrieving a virtual instrument using lab VIEW. **8**

OR

- c) Compare sub VI and Express VI. Enlist the steps to create virtual instrument for full adder using half adder as a sub VI. **8**
d) What is modular programming technique? State its advantages. **8**

Either:

2. a) Discuss the use of charts and graphs in lab view with suitable example. **8**
b) Explain the use of cluster and cluster operations in lab view. **8**

OR

- c) Compare FOR and WHILE loops in lab VIEW with suitable examples. **8**
d) Enlist the steps to build a virtual instrument that can generate a one dimensional array of random numbers. **8**

Either:

3. a) Discuss the serial port communication protocol with peripherals using lab VIEW. **8**
b) What is GPIB? Explain how communication is achieved with GPIB using lab VIEW. **8**

OR

- c) Discuss the role of instrument I/O assistant in lab VIEW. **8**
d) What is VISA? Discuss the VISA protocol used in lab VIEW. **8**

Either:

4. a) Describe various attributes of ECG signal. Design a virtual instrument to acquire ECG signal. **8**
b) What is motion controller? Describe the role of motion controller with suitable diagram. **8**

OR

- c) Draw the necessary front panel and block diagram to design instrument for digital filter. **8**
d) What is PID controller? Explain a virtual instrument for temperature control system with PID control. **8**

5. a) What is express VI? Explain. **4**
b) Explain Polymorphism with suitable example **4**
c) Enlist advantages of VISA. **4**
d) Explain modulation tool kit in Lab VIEW. **4**
