

M.Sc. (Electronics) (NEP Pattern) Semester-I  
**NEP-34-1 / PSCELT104-1 - Elective Paper-IV - Virtual Instrumentation**

P. Pages : 1

Time : Three Hours



**GUG/S/25/15090**

Max. Marks : 80

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

**Either :**

1. a) Explain with Palettes Front panel windows in LABVIEW. 8
- b) Explain the architecture of Virtual Instrument. Explain the role of software in it. 8

**OR**

- c) Write a note on: 8
  - i) Data flow program
  - ii) Modular programming.
- d) Compare the text based and graphical programming techniques. 8

**Either :**

2. a) Enlist and explain different types of loops with its structure. 8
- b) Create a VI to find the first 20 odd number addition using FOR and WHILE loop. 8

**OR**

- c) Explain the importance of array functions with suitable examples. 8
- d) Explain the use of charts and graphs in Lab VIEW with suitable example. 8

**Either :**

3. a) Explain the features of VISA and list its advantages. 8
- b) What is the use of the Instrument I/O Assistant? List the steps to launch it. 8

**OR**

- c) Explain GPIB communication, configuration and addressing. 8
- d) What is fire wire and Ethernet? Explain their role in Lab VIEW. 8

**Either :**

4. a) List the various signal processing and analysis tools and their applications. 8
- b) Draw the block diagram and explain the three LABVIEW Control Design Tools. 8

**OR**

- c) Draw and explain the different components of a motion control system. 8
- d) Explain the process of prototyping with motion assistant. 8

5. Solve the following:

- a) State the advantages of LAB VIEW programming. 4
- b) What is the formula node? Explain its important in Lab VIEW. 4
- c) Write a short note on RS-232. 4
- d) What is simulation of ECG signal? 4

\*\*\*\*\*