

Total No. of Questions : 10]

SEAT No. :

**P4006**

**[4959]-1209**

[Total No. of Pages : 2

**B.E. (Instrumentation and Control)**

**VIRTUAL INSTRUMENTATION**

**(2012 Course) (Elective - III D) (406269) (Semester - II)**

*Time : 2½ Hours]*

*[Max. Marks : 70*

*Instructions to the candidates:*

- 1) *Solve Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8, Q.9 or Q.10.*
- 2) *Neat diagrams must be drawn wherever necessary.*
- 3) *Figures to the right indicate full marks.*
- 4) *Use of non-programmable calculator is allowed.*
- 5) *Assume suitable data, if necessary.*

- Q1)** a) With an example explain limitations of conventional Instruments vs Virtual Instruments. **[5]**
- b) With an example explain the working of sequence structures. **[5]**

OR

- Q2)** a) With an example explain advantages of graphical programming over conventional programming. **[5]**
- b) With an example explain the functions of formula nodes. **[5]**
- Q3)** a) With an example explain the various data types available in Lab VIEW. **[5]**
- b) With an example explain what are the different colours represents different data type in Lab VIEW. **[5]**

OR

- Q4)** a) With an example explain data acquisition with serial communication using Lab-VIEW. **[5]**
- b) What are advantage of PXI over PCI. **[5]**

**P.T.O.**

- Q5) a)** List and explain various blocks used in developing VI for Fourier transform. [8]
- b) List and explain various blocks used in developing VI for digital multimeter. [8]

OR

- Q6) a)** With an example explain the application of Control and Simulation Toolkit. [8]
- b) List and explain various blocks used in developing VI for Fourier transform. [8]

- Q7) a)** With an example explain the use of math script node. [8]
- b) Write a VI code to interface with matlab Program. [8]

OR

- Q8) a)** With an example explain the use of differential equation block. [8]
- b) Write a VI code to interface with matlab Program. [8]

- Q9) a)** With an example explain the use of OPC. [9]
- b) Write a VI code to interface with any third party SCADA system. [9]

OR

- Q10) a)** With an example explain the various communication protocols used in process automation. [9]
- b) Explain the advantages and limitations of active x programming. [9]

