Code No: 07A7EC35 **R07** **Set No. 2**

IV B.Tech I Semester Examinations,NOVEMBER 2010
VIRTUAL INSTRUMENTATION
Electronics And Instrumentation Engineering

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

⋆ ⋆ ⋆ ⋆ ⋆

1. Write about the image acquisition and processing and give its examples. [16]
2. What are the different modes present in RS 232C and explain with neat diagrams? [16]
3. Write a short note on the following:
   (a) VI tool sets.
   (b) Instrument control. [8+8]
4. Write in detail about:
   (a) String Handling.
   (b) File handling. [8+8]
5. What is networking? Describe the following:
   (a) TCP/IP.
   (b) Intranet.
   (c) SNMP.
   (d) VPN. [4+4+4+4]
6. Write with necessary theory about Interface requirements in DAQ systems. [16]
7. What is meant by SCADA and explain it using practical examples? [16]
8. Describe the Fire wire with regard to the Linux system administration and applications. [16]

⋆ ⋆ ⋆ ⋆ ⋆

Code No: 07A7EC35 **R07** **Set No. 4**

IV B.Tech I Semester Examinations,NOVEMBER 2010
VIRTUAL INSTRUMENTATION
Electronics And Instrumentation Engineering

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

⋆ ⋆ ⋆ ⋆ ⋆

1. Explain in detail about the Industrial communication and its applications. [16]
2. (a) What is virtual instrumentation?
   (b) Give a historical perspective of virtual instrumentation. [8+8]
3. (a) What is Fire wire? Describe its applications.
   (b) Advantages and disadvantages of Fire wire. [8+8]
4. Write about the following in detail in the Data Bus Distribution with a diagram:
   (a) MD Bus.
   (b) XD Bus. [8+8]
5. What is GPIB and explain? [16]
6. Write and Explain the programming under VISA with its errors to make instrument efficient with diagrammatic representation. [16]
7. Write about the various applications of virtual instrumentation in power engineering laboratory in detail with suitable examples. [16]
8. Create a VI that plots an ellipse
   $r^2 = A^2B^2/(A^2 \sin^2 \alpha + B^2 \cos^2 \alpha)$
   Where r, A, and B are input parameters and $0 <= \alpha = 2\Pi$. [16]

⋆ ⋆ ⋆ ⋆ ⋆

Code No: 07A7EC35 **R07** **Set No. 1**

IV B.Tech I Semester Examinations,NOVEMBER 2010
VIRTUAL INSTRUMENTATION
Electronics And Instrumentation Engineering

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

⋆ ⋆ ⋆ ⋆ ⋆

1. (a) What is the purpose of motion controller?
   (b) What are the various types of profiles available for Motion Control? [8+8]
2. Compare and contrast RS 232C and RS 485C. [16]
3. Discuss the following:
   (a) PC-based control.
   (b) VXI-based control. [8+8]
4. (a) Write about DAC converter and mention its uses with suitable practical examples.
   (b) Write about ADC converter and mention its uses with suitable practical examples. [8+8]
5. How is Virtual instrumentation applicable for industrial I/O and its control? [16]
6. (a) Explain how data is inputted into a file and explain.
   (b) Write in brief about Global variables. [8+8]
7. Discuss in detail different data flow techniques of virtual instrumentation. [16]
8. Explain in detail to terminate the session and close the VISA channel to the instrument. [16]

⋆ ⋆ ⋆ ⋆ ⋆

Code No: 07A7EC35 **R07** **Set No. 3**

IV B.Tech I Semester Examinations,NOVEMBER 2010
VIRTUAL INSTRUMENTATION
Electronics And Instrumentation Engineering

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

⋆ ⋆ ⋆ ⋆ ⋆

1. Explain in detail architecture of PXI control system with suitable examples and applications. [16]
2. What is IVI? Explain in detail about the various technology areas in which IVI standard is grouped and mention the various applications. [16]
3. (a) Explain how VIs and sub VIs are formed and explain their uses.
   (b) Write in detail about array handling in VI programming. [8+8]
4. (a) What is the purpose of industrial communication in virtual instrumentation?
   (b) Explain about the motion control. [8+8]
5. Write in brief about Common Instrument Interfaces. [16]
6. (a) What is meant by Data acquisition system and explain in detail the different elements present in this type of systems?
   (b) Write in detail about "Sampling" and explain its need in Data acquisition systems. [8+8]
7. Using a VI template and modifying express VIs, create a program that generates a triangle wave with a frequency of 125Hz and added noise. [16]
8. Write about the following distributed I/O modules.
   (a) Thermocouple.
   (b) RTD.
   (c) Discrete Input modules.
   (d) Relay output modules. [4+4+4+4]

⋆ ⋆ ⋆ ⋆ ⋆