



(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 132652

Roll No.

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B. Tech.

(SEM. VI) THEORY EXAMINATION, 2014-15
INTELLIGENT INSTRUMENTATION

Time : 2 Hours]

[Total Marks : 50

Note : All questions are compulsory:

1 Attempt any four parts of the following: **3.5×4=14**

- (a) Explain the historical evolution of virtual instrumentation and its current status.
- (b) Explain different elements involved in making an intelligent sensors.
- (c) What is simple and intermediate VIs? How can we use them in LABVIEW?
- (d) What is modular programming? Explain VI in LABVIEW using example of Formula Node.
- (e) Explain data types and the importance of their colors in LABVIEW programs with examples.
- (f) What are the three methods that a DAQ device can be grounded?

2 Attempt any two parts of the following: **6×2=12**

- (a) What is the purpose of a Data Acquisition System? What are the building blocks of a Data Acquisition System? Diagrammatically explain the purpose of terminal block.
- (b) What are different analog to digital conversion techniques? Explain the applications of ADC in an instrumentation system.
- (c) Explain the interfacing methods of DAQ hardware. Also describe its software structure.

3 Attempt any two parts of the following: **6×2=12**

- (a) Explain the PCMCIA role in setting standards for peripheral devices PCI card. Card Bus and Express Card.
- (b) Discuss the physical dimensions of an SCXI module, the positioning of the SCXI bus connector and cooling information.
- (c) Write short notes on any two of the followings:
 - (i) RS 423C
 - (ii) IEEE488.1
 - (iii) PCMCIA card

4 Attempt any two parts of the following: **6×2=12**

- (a) What are different digital filters? Explain Window techniques.
 - (b) What is Curve Fitting? Explain different methods of curve fitting with example.
 - (c) Define the term statistics. What is mean deviation and standard deviation in statistics?
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