Printed Pages : 3

EIC012

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

PAPER ID : 132652

Roll No.

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 conversation 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?