Printed Pages: 4 **NIC-022**

(Following Paper ID and Roll No. to be filled in your Answer Books)	
Paper ID : 122667	**Roll No.**

B.TECH

Theory Examination (Semester-VI) 2015-16

INTELLIGENT INSTRUMENTATION

Time : 3 Hours ***Max. Marks : 100***

Section-A

1. Attempt all parts. All parts carry equal marks. Write answer of each part in sort. (2×10 = 20)

(a) Write down features of Intelligent Instrumentation System.

(b) Compare LabVIEW and Conventional language.

(c) Define smart sensors.

(d) Describe data acquision system.

(e) Give any two type of numeric control and indicators in LabVIEW.

(f) What is DMA?

(g) Differentiate between Timer and counter operation.

(h) Describe virtual instrumentation.

(i) Define the term front panel and block diagram in LabVIEW.

(j) Discuss the need of nonlinearity compensation.

Section-B

2. Attempt any five questions from this section. (10×5 = 50)

(a) What is role and necessity of Virtual Instrumentation in Instrumentation? Discuss and differentiate between array, cluster and graphs.

(b) What do you mean by interrupt ? Discuss various types of interrupts used in instrumentation system.

(c) Write a short note on Operating System for Instrumentation. Give a brief idea about PCMCIA.

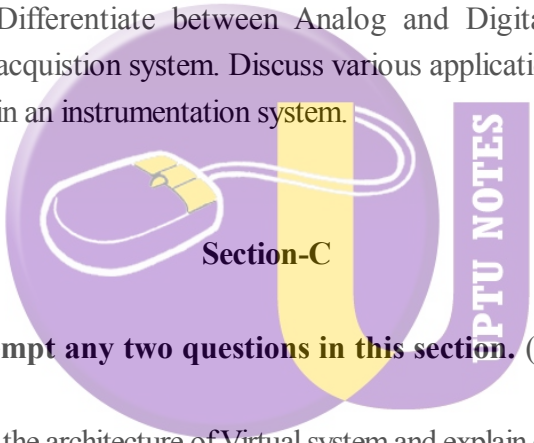
(d) What do you mean by control structure ? Explain For loop and While loop in LabVIEW.

(e) Discuss Smart Transmitter with HART communicator.

(f) Give an historical perspective of intelligent system. Write a short note on software based instruments.

(g) What is DMA? Why DMA is preferred over other methods for transferring data between expansion cards and computer memory?

(h) Differentiate between Analog and Digital IO Data acquistion system. Discuss various applications of ADC in an instrumentation system.



Section-C

Note : Attempt any two questions in this section. (15×2 = 30)

3. Draw the architecture of Virtual system and explain each module of it. Explain VIs and sub VIs loops and charts. What are the advantages of VI techniques?

4. Explain the different analysis techniques used in intelligent instrumentation. Also comment on DSP software and software structure for DAQ used in instrumentation system.

5. Write short note on the following :

(a) IEEE 488.1

(b) RS232 C and RS422

(c) PCI and USB