Printed Pages: 1 Roll No. NEE022

B.TECH.

THEORY EXAMINATION (SEM-VI) 2016-17 INTELLIGENT INSTRUMENTATION

Time: 3 Hours Max. Marks: 100

Note: Be precise in your answer. In case of numerical problem assume data wherever not provided.

SECTION-A

1 Explain the following:

 $(10 \times 2 = 20)$

- a) What is software based instruments?
- b) What do you mean by string?
- c) What is the use of DMA?
- d) What are the applications of Intelligent Instrumentation?
- e) Write the advantages of virtual instruments?
- f) Define the use of Data Socket.
- g) What is formula code?
- h) Expand PCMCIA
- i) Which are the commonly used operating system(s) for PC hardware?
- j) What are the roles of filters in signal analysis?

SECTION-B

2 Attempt any five of the following:

 $(10 \times 5 = 50)$

- a) What are the different classifications of intelligent instrumentation? And also explain the current status of intelligent instrument.
- b) What is the purpose of Code Interface Nodes? Also explain its working in detail
- c) Draw the bus diagram of RS423 in serial interfacing. Explain the working of it with suitable example.
- d) What are the interfacing methods of connecting DAQ Devices to Computers? Also discuss the software structure.
- e) Explain about VI's loops, charts, arrays, graphs, clusters.
- f) Discuss the data flow and graphical programming techniques in virtual instrumentations. Also write their limitations.
- g) Write short notes on Historical Perspective of Intelligent Instrumentation
- h) What is a PXI controller? Explain the types of PXI controllers in detail.

SECTION-C

Attempt any two of the following:

 $(15 \times 2 = 30)$

- 3. Discuss various types of interrupts used in serial/parallel interfacing. Also draw timing diagram of each of them.
- 4. Write short notes on the following:
 - (i) String and File Input-Output
 - (ii) DLL links
 - (iii) Counters
 - (iv) Timers
- 5. Write short notes on the following:
 - (i) RS232C
 - (ii) RS422
 - (iii) RS485
 - (iv) IEEE488.1 and 488.2