**C 63000**  (Pages : 2)  Name....................
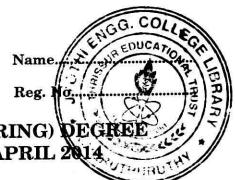
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# SEVENTH SEMESTER B.TECH. (ENGINEERING) DEGREE [SUPPLEMENTARY] EXAMINATION, APRIL 2014

(2009 Scheme)

### AI 09 702 – ADVANCED INSTRUMENTATION

Time : Three Hours                                      Maximum : 70 Marks

## Part A

*Answer all questions.*

I.  (a)  What is a smart sensor?

(b)  What are the advantages of Digital measurement over Analog measurement?

(c)  Name some noise sources.

(d)  State two applications of virtual instrumentation.

(e)  What is GPIB?

(5 × 2 = 10 marks)

## Part B

*Answer any four questions.*

II.  (a)  Explain a method to measure humidity.

(b)  Write notes on MEMS.

(c)  Explain a method to measure small time intervals digitally.

(d)  Explain a method to measure Q of a coil.

(e)  Compare Virtual and Real instrumentation.

((f)  Explain virtual instrument software architecture.

(4 × 5 = 20 marks)

## Part C

*Answer all questions.*

III.  (a)  Explain the working of gas densitometers.

*Or*

(b)  Explain a method to measure moisture.

**Turn over**

IV.   (a)   Explain a digital method to measure frequency of a signal.

*Or*

(b)   Explain a digital method to measure phase of a signal.

V.    (a)   Explain the working of a digital voltmeter.

*Or*

(b)   (i)   Explain an ADC technique.

(ii)   Explain a method to measure modulation index.

VI.   (a)   Write notes on :

(i)   RS 232C.

(ii)   USB.

*Or*

(b)   Write notes on :

(i)   Multisystem Extension Interface.

(ii)   Standard Commands for Programmable Instrumentation.

(4 × 10 = 40 marks)