

**D 70233**

(Pages : 2)

Name

Reg. No.



**SEVENTH SEMESTER B.TECH. (ENGINEERING) [09 SCHEME] DEGREE  
EXAMINATION, NOVEMBER 2014**

**AI 09 702—ADVANCED INSTRUMENTATION**

Time : Three Hours

Maximum : 70 Marks

**Part A**

*Answer all questions.*

*Each question carries 2 marks.*

1. Define relative humidity.
2. Name the specifications of an electronic counter.
3. List out the advantages and drawbacks of flash type ADC.
4. What are the sources of electromagnetic interference ?
5. What are the limitations of RS232 ?

(5 × 2 = 10 marks)

**Part B**

*Answer any four questions.*

*Each question carries 5 marks.*

6. What is noise coupling ? How is noise coupled for a frequency above 15 MHz ?
7. List out the advantages of a virtual instrument.
8. Write short notes on semiconductor sensors.
9. Explain the IEEE 488 GPIB interface.
10. How will you measure phase angle ?
11. Discuss the working principle of a dew point meter.

(4 × 5 = 20 marks)

**Part C**

*Answer all questions.*

*Each question carries 10 marks.*

**Module I**

12. (a) Explain the working principle of an electrolysis type hygrometer with a neat sketch.

*Or*

- (b) Explain in detail about smart sensors.

**Turn over**

## Module II

13. (a) Explain the working principle of a digital frequency meter.

*Or*

- (b) Discuss the measurement of capacitance with a neat sketch.

## Module III

14. (a) Explain the architecture of a virtual instrument with a neat block diagram.

*Or*

- (b) Discuss a method to measure the Q-factor of a coil.

## Module IV

15. (a) Explain in detail about USB interface.

*Or*

- (b) Explain in detail about Virtual Instrument Software Architecture (VISA).

(4 × 10 = 40 marks)