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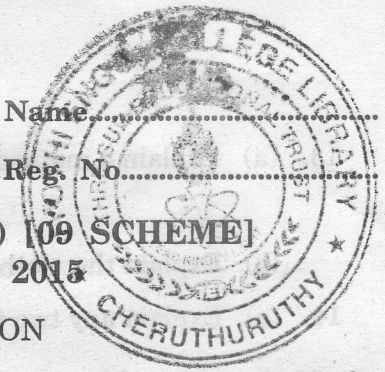
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Name.....

Reg. No.....

**SEVENTH SEMESTER B.TECH. (ENGINEERING) [09 SCHEME]
DEGREE EXAMINATION, NOVEMBER 2015**

AI 09 702—ADVANCED INSTRUMENTATION



Time : Three Hours

Maximum : 70 Marks

Part A

Answer all questions.

1. What products depend upon correct humidity for quality control ?
2. What are film sensors ?
3. List the possible errors which may occur in a phase meter.
4. What are the disadvantages of conventional instruments ?
5. What are the commonly used control lines in RS232C ?

(5 × 2 = 10 marks)

Part B

Answer any four questions.

6. Can electrical temperature sensing devices be used instead of filled mechanical systems in dry and wet bulb psychrometers ? What are its advantages and disadvantages ?
7. Determine the relative humidity of air at atmospheric pressure if the partial pressure of water vapour and saturation pressure are 30 mm Hg and 60 mm Hg.
8. If the main and the vernier oscillators have time periods of 10.006 and 10.001 ms respectively, and the time interval to be measured is 1410.05 μ s, what would be the readings of the main and vernier counter ? Find the total measurement time.
9. Write notes on electromagnetic interference in instruments.
10. Explain how virtual instrumentation is useful for the design of a system.
11. Write notes on VXI.

(4 × 5 = 20 marks)

Part C

Answer either (a) or (b) of each question.

12. (a) Explain the working of hair hygrometer with a neat diagram.

Or

- (b) Explain a method of conductivity measurement.

Turn over

13. (a) Explain a method of measurement of periodic time.

Or

(b) Explain the method of power system frequency deviation measurement.

14. (a) Explain any two types of ADCs.

Or

(b) Explain how modulation index could be measured.

15. (a) Explain in detail about the general purpose interface bus.

Or

(b) Explain in detail the electrical and mechanical characteristics of RS485 and explain how communication is established in it.

(4 × 10 = 40 marks)