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Name :
Reg.No:



SIXTH SEMESTER B-TECH. DEGREE EXAMINATION, MAY 2012

AI 09 605 INDUSTRIAL INSTRUMENTATION

Duration : 3 hours

Max. Marks : 70

Part A (Answer all questions) (5 x 2 Marks = 10 Marks)

1. Define calibration.
2. What are force summing devices?
3. State Hooks Law.
4. State any two flow characteristics.
5. What is an anemometer?

Part B (Answer any four questions) (4 x 5 Marks = 20 Marks)

6. Explain the principle of operation of a Thermocouple.
7. Write a note on Quartz Crystal Thermometer.
8. The o/p voltage of a LVDT is 1.5V at maximum displacement. At a load of $0.5M\Omega$, the deviation from linearity is maximum and it is $\pm 0.003V$ from a straight line through origin. Find the linearity at the given load.
9. With neat sketch explain the Bellows and Diaphragms.
10. Explain the tapping and piping arrangements for the Flow Meter installation.
11. Write a note on Cross Correlation and its applications in Flow Measurement.

Part C (Answer all questions) (4 x 10 Marks=40 Marks)

12. (i) Briefly explain the reference junction consideration for a Thermocouple. (4)
(ii) Explain the operation of a Pressure Thermometer. (6)
(Or)
13. Discuss in detail about the construction, working and applications of RTDs.
14. Explain the operation of Strain Gauge. Derive an expression for the Gauge Factor of a Strain Gauge.
(Or)
15. Explain in detail about the High Pressure and Low Pressure Measurements.
16. Explain the construction and working of a Head Flow meter.
(Or)
17. (a) Explain the working of a Electromagnetic Flow Meter and Vortex Flow Meter. (6)
(b) Briefly explain the Turbine type Flow Meter. (4)

Turn Over

18. Discuss in detail about the Ultrasonic Flow Meter.

(Or)

19. (i) Explain the various types of Floats. (4)

(ii) Discuss in detail about the various types of Level Measurements. (6)
