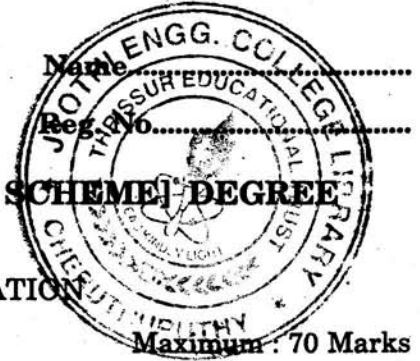


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**SIXTH SEMESTER B.TECH. (ENGINEERING) [09 SCHEME] DEGREE
EXAMINATION, APRIL 2015**

AI 09 605—INDUSTRIAL INSTRUMENTATION

Time : Three Hours

Part A

*Answer all questions.
Each question carries 2 marks.*

1. What is a thermocouple ?
2. State the principle of a bimetallic thermometric device.
3. State the characteristics of diaphragm elements.
4. State the principle of head type flowmeters.
5. State the range of measurement and accuracy of thermal effect type liquid level measuring technique.

(5 × 2 = 10 marks)

Part B

*Answer any four questions.
Each question carries 5 marks.*

1. Explain the working of Quartz crystal thermometer.
2. What is LVDT ? Explain its working.
3. Discuss the classification of flowmeters.
4. Explain the working of a dead weight tester as a pressure calibrator.
5. Explain the measurement of flow using hotwire anemometry.
6. Write brief notes on digital thermometers.

(4 × 5 = 20 marks)

Part C

*Answer all questions.
Each question carries 10 marks.*

1. (a) What is RTD ? Discuss about RTD materials. Explain how can temperature be measured using a 3-lead RTD.

Or

- (b) (i) Discuss on the standards and calibration of temperature.
(ii) Explain the working principle of a pressure thermometer.

Turn over

2. (a) Explain the working of a piezo resistive pressure sensor.

Or

(b) Explain the measurement of pressure using ionization gauge.

3. (a) Explain the measurement of flow using any one type of variable area flowmeter.

Or

(b) Explain the measurement of flow using any one type of positive displacement type flowmeter.

4. (a) Explain a method to measure liquid-level.

Or

(b) Explain the working of an ultrasonic flowmeter.

(4 × 10 = 40 marks)