

C 18240

(Pages : 2)

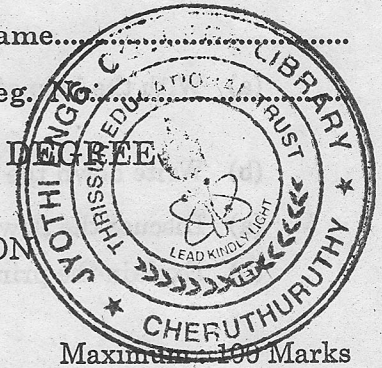
Name.....

Reg. No. ....

SIXTH SEMESTER B.TECH. (ENGINEERING) DEGREE  
EXAMINATION, JUNE 2011

AI 04 606—INDUSTRIAL INSTRUMENTATION

(2004 admissions)



Time : Three Hours

Maximum 100 Marks

Answer all questions.

- I. (a) What are the advantages and disadvantages of thermocouple ?  
(b) Discuss the principle of radiation pyrometers.  
(c) Explain the principle of U-tube manometer.  
(d) Explain one method to measure low pressure.  
(e) Explain flow measurement by flow nozzles.  
(f) What is rotameter ? What are its advantages and disadvantages ?  
(g) Explain the principle of operation of ultrasonic flow meters.  
(h) Explain an electrical method used for level measurement. (8 × 5 = 40 marks)
- II. (a) What is a RTD ? What are the materials used for making RTD ? (5 marks)  
(b) Explain the operation of 3 lead wire RTD with necessary diagram. (10 marks)
- Or*
- (a) Explain junction semiconductor temperature sensor. (8 marks)  
(b) Explain the principle of quartz crystal thermometer. Discuss its applications. (7 marks)
- III. (a) With the help of necessary diagrams explain different types of manometer used for pressure measurement. (10 marks)  
(b) Write short note on manometric fluids. (5 marks)
- Or*
- (a) Explain how calibration of low pressure gauges is done.
- IV. (a) What is Dahl tube ? Explain with necessary diagram. (7 marks)  
(b) Write notes on the different tapping arrangements possible for the installation of head flow meters. (8 marks)

Turn over

- (a) With the help of a schematic diagram, explain the working of a turbine mass flow meter. (10 marks)
- (b) Write down the advantages of vortex flowmeter. (5 marks)
- V. (a) Discuss the flow measurement by hot wire anemometers. (8 marks)
- (b) Explain the principle of air purge system of level indicators with a schematic diagram. (7 marks)

Or

- (a) Describe any *one* method of capacitive type level gauging. (8 marks)
- (b) Explain the radiation techniques used for level measurement. (7 marks)

[4 × 15 = 60 marks]