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(Pages : 2)

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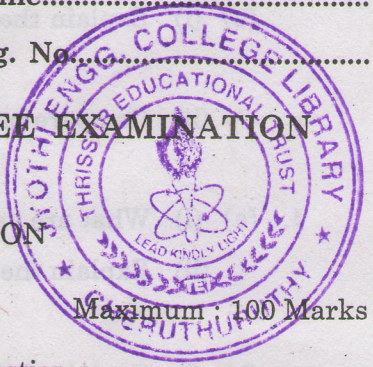
Reg. No.....

SIXTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION
DECEMBER 2010

AI 04 606—INDUSTRIAL INSTRUMENTATION

Time : Three Hours

Maximum : 100 Marks



Answer Question 1 and for Questions 2 to 5 answer (A) or (B) in each question :

1. (a) What are radiation pyrometers ? State few applications of Quartz crystal thermometer.
- (b) How is mV output of thermocouple converted to equivalent temperature values in display stage of thermocouple thermometer ?
- (c) What is LVDT ? What is its limitation ?
- (d) What is the unit for pressure measurement ? What are the merits and demerits of manometer and elastic type pressure gauges ?
- (e) Compare the pressure loss performance of orifice meter and venturimeter.
- (f) List out the different methods of flow measurement.
- (g) What is Ultrasonic flow meter ? How can be Ultrasonic flow meter used in flow measurement ?
- (h) Write a short note on nuclear radiation technique for level measurement.

(8 × 5 = 40 marks)

2. (a) (i) Explain the construction and working method of optical pyrometer.

(10 marks)

- (ii) Explain the features of bimetallic thermometers.

(5 marks)

Or

- (b) (i) What are RTD ? List out the RTD materials.

(5 marks)

- (ii) Explain the construction features and functioning of RTD.

(10 marks)

3. (a) (i) Explain the construction and working method of piezoresistive pressure transducer.

(10 marks)

- (ii) Define the functions of testing and calibration of pressure gauges.

(5 marks)

Or

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(b) (i) Explain the construction features and functioning of an Ionization gauge. (10 marks)

(ii) Compare hot cathode and cold cathode types used in pressure measurement. (5 marks)

4. (a) (i) What are variable area flow meters ? Give examples. (5 marks)

(ii) Explain the construction and working method of mass flow meter. (10 marks)

Or

(b) (i) Explain the construction features and functioning of Pitot tube. (10 marks)

(ii) Compare Turbine type and Mass flow meter. (5 marks)

5. (a) (i) Explain the construction and working method of Hot-wire anemometer. (10 marks)

(ii) How can be hydrostatic type used in level measurement ? (5 marks)

Or

(b) (i) Write a short note on capacitance type level measurement. (5 marks)

(ii) Explain the construction features and functioning of resistance type level measurement. (10 marks)

[4 × 15 = 60 marks]