TED (10)-3078

(REVISION—2010)

Reg. No. .....

Signature .....

FOURTH SEMESTER DIPLOMA EXAMINATION IN ENGINEERING/ TECHNOLOGY—MARCH, 2013

INDUSTRIAL INSTRUMENTS—I

(Common to EI and IT)

[*Time* : 3 hours

(Maximum marks : 100)

Marks

PART—A

I Answer the following questions in one or two sentences. Each question carries 2 marks.

1. List the different temperature scales.
2. State Planck's radiation law.
3. Define Peltier effect.
4. List the advantages and disadvantages of float method of level measurement.
5. Define gauge pressure. (5×2=10)

PART—B

II Answer *any five* of the following questions. Each question carries 6 marks.

1. Convert to celsius scale : (a) 41°F (b) 50°F (c) 323°K (d) 200°K.
2. Explain the characteristics of thermistor.
3. What is a thermopile ? List the advantages and disadvantages.
4. List the methods of level determination of corrosive liquids.
5. Describe the working of well type manometer and its advantages.
6. Describe mercury level switch.
7. Write the principles of operation of vacuum measurement methods and their range. (5×6=30)

PART—C

(Answer one full question from each unit. Each question carries 15 marks.)

UNIT—I

III (a) Explain the construction and working of mercury in steel thermometer. 7

(b) Describe the construction and working of optical pyrometer. 8

OR

Marks

IV (a) Outline the working of vapour pressure thermometer. 7

(b) Explain the construction and working of total radiation pyrometer. 8

UNIT—II

V (a) Describe three applications of thermistor. 9

(b) State and explain the laws of thermocouple. 6

OR

VI (a) Explain the construction and working of resistance thermometer. 8

(b) Explain how lead wire compensation is done in thermocouples. 7

UNIT—III

VII (a) Describe the construction and working of air purge type level indicator. 7

(b) Explain how level of dry materials can be measured. 8

OR

VIII (a) Describe the principle of operation and working of capacitive level indicator. 7

(b) Explain the working of fiber optic level sensor. 8

UNIT—IV

IX (a) Explain the construction and working of c-type bourdon tube pressure gauge. 7

(b) Describe the principle of operation and working of Dead weight tester. 8

OR

X (a) Explain the construction and working of diaphragms. 7

(b) Describe the working of differential pressure transmitter. 8
