TED (15) – 4213

(REVISION — 2015)

Reg. No. .....

Signature .....

# FOURTH SEMESTER DIPLOMA EXAMINATION IN INSTRUMENTATION ENGINEERING — APRIL, 2017

## INDUSTRIAL INSTRUMENTS – I

[*Time* : 3 hours

(Maximum marks : 100)

### PART — A

(Maximum marks : 10)

Marks

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

1. Define absolute pressure.
2. List any four advantages of manometers.
3. Mention any four indirect methods of level measurement.
4. List the different temperature scales.
5. State Peltier effect. (5×2 = 10)

### PART — B

(Maximum marks : 30)

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

1. With neat sketch outline the working of a C-type bourdon tube pressure gauge.
2. Describe the working of ultrasonic level gauge.
3. Illustrate the working of fibre optic level sensor.
4. Outline the working of bimetallic thermometer.
5. Convert to Fahrenheit scale :

   (i) 35°C (ii) 70°C (iii) 373.16K (iv) 400.16K
6. List any six applications of thermistor.
7. State the laws of thermocouple. (5×6 = 30)

Marks

## PART — C

(Maximum marks : 60)

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

### UNIT — I

III (a) Explain the working of U tube manometer. 7

(b) Describe the construction and working of ionization gauge. 8

OR

IV (a) Explain the working of bellows. 7

(b) Describe the working of capacitive type pressure gauge. 8

### UNIT — II

V (a) Explain the working of float type level indicator. 8

(b) Describe level measurement using strain gauges. 7

OR

VI (a) Describe the working of conductive level indicator. 8

(b) Describe the working of level switch. 7

### UNIT — III

VII (a) Describe the working of mercury in steel thermometer. 7

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

OR

VIII (a) Explain the working of gas thermometer. 7

(b) With neat sketch explain the construction and working of radiation pyrometer. 8

### UNIT — IV

IX (a) Explain the construction and working of Resistance Temperature Detector. 8

(b) List the different types of thermocouples and their properties. 7

OR

X (a) Describe about thermistor and its types. 8

(b) Compare the characteristics of Resistance Temperature Detector and thermistor. 7

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