TED (15) – 4213 Reg. No. .....

(REVISION — 2015) Signature .....

# DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/ MANAGEMENT/COMMERCIAL PRACTICE — OCTOBER, 2017

## INDUSTRIAL INSTRUMENTS - I

[*Time* : 3 hours

(Maximum marks : 100)

### PART — A

(Maximum marks : 10)

Marks

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

1. List any two units of pressure.
2. Identify any two disadvantages of ultrasonic level gauges.
3. Define temperature.
4. Compare PTC and NTC.
5. List any three materials used for the construction of RTD. (5×2 = 10)

### PART — B

(Maximum marks : 30)

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

1. Explain the working of U tube manometers.
2. Discuss the construction and working of C type bourden gauges.
3. Describe float type level indicators.
4. Describe level switch.
5. Illustrate different temperature scales and its conversions.
6. State Seebeck effect and Peltier effect.
7. Draw and explain the construction of RTD. (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) Illustrate the construction and working of bellows with its advantages and disadvantages. 10

(b) Explain ionization gauge. 5

OR

IV (a) Describe capacitance type pressure gauge. 8

(b) Illustrate the working of Mc leod gauge. 7

### UNIT — II

V (a) Describe the construction and working of displacer and torque tube level indicator. 6

(b) List two advantages and disadvantages of displacer level indicator. 4

(c) List any three advantages and disadvantages of capacitive level indicator. 5

OR

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

(b) Illustrate the principle of radiation absorption method for level measurement. 7

### UNIT — III

VII (a) Explain the working of bimetallic thermometer. 7

(b) Discuss the working and advantages of mercury in steel thermometer. 8

OR

VIII (a) Illustrate the construction and working of radiation pyrometer. 8

(b) Explain the working of gas and vapour pressure thermometer. 7

### UNIT — IV

IX (a) Explain the properties of different types of industrial thermocouples. 5

(b) Compare the characteristics of thermocouple, RTD and thermistor. 10

OR

X (a) Explain the characteristics of thermistors. 7

(b) State and explain the laws of thermocouple. 8

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