

TED (15/19) 4213  
(Revision – 2015/19)

**N21 – 04473**

Reg. No.....  
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**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/  
MANAGEMENT/COMMERCIAL PRACTICE, NOVEMBER – 2021**

**INDUSTRIAL INSTRUMENTS-I**

[Maximum Marks: 75]

[Time: 2.15 Hours]

**PART-A**

(Answer *any three* questions in one or two sentences. Each question carries 2 marks)

- I. 1. List the various units of Pressure.  
2. State Archimedes principle  
3. Mention the advantages of pyrometers.  
4. List out the application of thermistor.  
5. Define gauge pressure. (3 x 2 = 6)

**PART-B**

(Answer *any four* of the following questions. Each question carries 6 marks)

- II 1. Explain the working of U-tube manometer using relevant diagram.  
2. Describe the working of capacitive type pressure gauge using suitable figure.  
3. Explain sight glass technique of level measurement with a neat sketch and mention its advantages.  
4. Explain the principle of radiation absorption method for level measurement with diagram.  
5. List out the various units of temperature, and explain the different temperature scales.  
6. State and explain Seebeck effect and Peltier effect.  
7. Compare the characteristics of Thermocouple, RTD and Thermistor. (4 x 6 = 24)

**PART-C**

(Answer *any of the three units* from the following. Each full question carries 15 marks)

**UNIT – I**

- III (a) Describe the constructional details and working of c-type bourdon gauges. (8)  
(b) Explain the working of McLeod gauge. (7)

**OR**

- IV (a) Explain the calibration of pressure gauge using Dead weight Tester. (8)  
(b) Explain Piezo electric pressure sensor. (7)

**UNIT – II**

- V (a) Explain the working of air purge type level indicator. (8)  
(b) Explain the working of Ultrasonic level gauge. (7)

**OR**

- VI (a) Explain the laser method used for level indication. (8)  
(b) Explain the working of fiber optic level sensor. (7)

**UNIT- III**

- VII (a) Explain the working of Bimetallic Thermometer. (8)  
(b) Describe the working of mercury in steel thermometer. (7)

**OR**

- VIII (a) Describe the construction and working of optical pyrometer. (8)  
(b) Explain the working of gas pressure thermometer. (7)

**UNIT - IV**

- IX (a) Explain the working of Resistance Temperature Detector with diagram. (8)  
(b) Explain the various Characteristics of Thermistor. (7)

**OR**

- X (a) State the laws of thermocouple- law of intermediate temperature and law of intermediate metal. (8)  
(b) Describe the working of thermopile. (7)

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