

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE, NOVEMBER - 2024**

INDUSTRIAL INSTRUMENTS II

[Maximum Marks: **100**]

[Time: **3 Hours**]

PART-A

[Maximum Marks: **10**]

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

1. Define Reynolds number and write its importance.
2. State the term calibration.
3. Define Kinematic viscosity.
4. Define specific gravity.
5. List any two types of load cells. (5 x 2 = 10)

PART-B

[Maximum Marks: **30**]

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

1. Distinguish between laminar and turbulent flow.
2. Describe the principle of operation of variable area flow meter with a neat diagram.
3. Explain the working principle of Coriolis Mass flow meters.
4. Explain the working principle of Hot wire anemometer.
5. Illustrate the working principle of hydrometer with neat diagram.
6. Write about Humidity, Relative humidity and absolute humidity.
7. Explain the technique of torque measurement using strain gauges. (5 x 6 = 30)

PART-C

[Maximum Marks: **60**]

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

UNIT – I

- III. a. Illustrate the working of flow nozzle flow meter with diagram. (7)
b. Explain the construction and working of orifice plate flow meter. (8)

OR

- IV. a. Explain the construction and working of a Pitot tube. (7)
b. Derive continuity equation for flow through a pipe. (8)

UNIT – II

- V. a. Illustrate the working of vortex shedding flow meters. (7)
b. Explain the Construction and working principle of Electromagnetic flow meters. (8)

OR

- VI. a. Explain the construction and working of V- notch open channel flow meter. (7)
b. Describe the Construction and working principle of Turbine flow meters. (8)

UNIT- III

- VII. a. Explain the construction and working of Redwood viscometer. (7)
b. Explain the operation of wet and dry bulb psychrometer. (8)

OR

- VIII. a. Explain the principle and construction of say bolt viscometer. (7)
b. Explain capacitance hygrometer method used for moisture measurement. (8)

UNIT - IV

- IX. a. Explain the operation of pneumatic load cell. (7)
b. Explain the construction & working of revolution counter. (8)

OR

- X. a. Describe the force measurement using strain gauge load cell. (7)
b. Explain the construction & working of LVDT accelerometer. (8)
