

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/
COMMERCIAL PRACTICE, APRIL-2022**

INDUSTRIAL INSTRUMENTS II

[Maximum marks: 100]

(Time: 3 Hours)

PART – A

Maximum marks : 10

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

1. State Bernoulli's theorem.
2. State the working principle of Electromagnetic flowmeter.
3. Define the terms humidity and moisture.
4. State the different units of viscosity.
5. List the different types of load cell.

(5 x 2 = 10)

PART – B

Maximum marks : 30

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

1. Derive Continuity equation.
2. Explain the construction and working of Pitot tube.
3. Illustrate the working of vortex shedding flowmeter.
4. Describe the working principle and construction of oval gear flowmeter.
5. Define the terms absolute viscosity, kinematic viscosity and relative viscosity.
6. Explain the principle and working of hydrometer.
7. Describe the working of hydraulic load cell.

(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) Explain the construction and working of variable head flowmeter. (8)
- (b) Describe different types of orifice plates. (7)

OR

- IV.(a) Explain the construction and working of rotameter. (8)
(b) Describe the construction of venturi meter. (7)

UNIT-II

- V. (a) Explain the working principle and construction of Ultrasonic flowmeter. (8)
(b) Briefly describe the working of Rectangular notch. (7)

OR

- VI. (a) Explain the working principle and construction of Turbine flowmeter. (8)
(b) Briefly describe the working of Nutating disc type flowmeter. (7)

UNIT-III

- VII. (a) Describe the principle and working of Saybolts Viscometer. (8)
(b) Describe the construction and working of hair hygrometer. (7)

OR

- VIII.(a) Explain the operation of dry and wet bulb psychrometer. (8)
(b) Describe the static pressure operated mechanism of specific gravity measurement. (7)

UNIT-IV

- IX. (a) Describe the method of measurement of speed by stroboscope. (8)
(b) Explain the technique of torque measurement using strain gauges. (7)

OR

- X. (a) Explain the construction and working of LVDT accelerometer. (8)
(b) Describe the method of measurement of speed by non-contact type instruments. (7)
