

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/  
COMMERCIAL PRACTICE, APRIL – 2024**

**INDUSTRIAL INSTRUMENTS II**

[Maximum Marks : 100]

[Time : 3 hours]

**PART – A**  
(Maximum Marks : 10)

Marks

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

1. Define Laminar flow.
2. State the principle behind electromagnetic flowmeter.
3. What is kinematic viscosity?
4. Write the classifications of tachometers.
5. Define specific gravity.

(5x2=10)

**PART – B**  
(Maximum Marks : 30)

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

1. State and prove Bernoulli's theorem.
2. Explain the construction and working of venturimeter.
3. Explain the working of ultrasonic flowmeter.
4. Write a short note on open channel flow meters.
5. Explain the working of capacitive hygrometer.
6. Explain about the speed measurement using stroboscope.
7. Describe seismic accelerometer with suitable sketch.

(5x6=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 area flowmeters. (8)  
(b) Explain the classification of orifice plates. (7)

**OR**

- IV.** (a) Explain with neat sketch the working of Dall tube. (8)  
(b) Describe the working of flow nozzle. (7)

**UNIT – II**

- V.** (a) Explain the working of Turbine flowmeter with neat sketch. (8)  
(b) Explain the working of nutating disc type flow meters. (7)

**OR**

- VI.** (a) Explain the working of Hotwire Anemometer. (7)  
(b) Write a short note on vortex shedding flow meters. (8)

**UNIT –III**

- VII.** (a) Explain the operation of dew cell. (7)  
(b) Describe about the weighing tube method of specific gravity measurement. (8)

**OR**

- VIII.** (a) Describe Say-bolt's viscometer with neat sketch. (7)  
(b) Describe the operation of wet and dry bulb psychrometer. (8)

**UNIT – IV**

- IX.** (a) Describe the force measurement using hydraulic load cell. (8)  
(b) Explain the construction and working of strain gauge load cell. (7)

**OR**

- X.** (a) Explain the construction and working of LVDT accelerometer. (8)  
(b) Illustrate the working of hand held mechanical tachometers. (7)

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