

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/
COMMERCIAL PRACTICE, APRIL - 2025**
PROCESS VARIABLES MEASUREMENT

[Maximum marks: 75]

[Time: 3 Hours]

PART A

I. Answer all the following questions in one word or one sentence. Each question carries 1 mark

(9 x 1 = 9 Marks)

		Module outcome	Cognitive level
1	Define Gauge pressure.	M1.01	U
2	List three vacuum gauges.	M1.05	U
3	Write any three elastic pressure gauges.	M1.03	U
4	Write the equation of Reynold's number.	M2.01	U
5	State stagnation pressure.	M2.02	U
6	List any three methods for level measurement.	M3.01	U
7	Define microwave level switch.	M3.01	U
8	List different temperature scales.	M4.01	U
9	Define seebeck effect.	M4.02	U

PART B

II. Answer any eight questions from the following. Each question carries 3 marks.

(8 x 3 = 24 Marks)

		Module outcome	Cognitive level
1	Explain the working of U tube manometer.	M1.02	U
2	Describe the working of ionization gauge.	M1.05	U
3	Explain Bernoulli's theorem.	M2.01	U
4	Write the difference between variable head flow meter and variable area flow meter.	M2.02	U
5	Explain the working of Nutating disc flow meter briefly.	M2.02	U
6	Describe the operation of capacitive level gauge.	M3.01	U
7	Describe the working of ultrasonic level gauge.	M3.01	U
8	Explain the working of bimetallic thermometer.	M4.02	U
9	Explain Peltier effect and Thomson effect.	M4.02	U
10	Explain the working of thermistor.	M4.02	U

PART C

Answer all questions. Each question carries seven marks

(6 x 7 = 42 Marks)

		Module outcome	Cognitive level
III	Explain the working of strain gauge pressure transducer with neat sketch.	M1.01	U
	OR		
IV	Explain the working of flapper nozzle system.	M1.06	U
V	With diagram explain the working of variable area flow meter	M2.02	U
	OR		
VI	Explain working of electromagnetic flow meter with neat sketch.	M2.02	U
VII	Explain about air purge type level indicator with neat sketch.	M3.02	U
	OR		
VIII	Explain the construction and working of differential pressure type level transmitter.	M3.02	U
IX	Explain the construction and working of RTD and its characteristics.	M4.02	U
	OR		
X	Write the construction and working of radiation pyrometer.	M4.02	U
XI	A man of mass 84 kg stands upright on a floor. If the area of contact of his shoes and floor is 420 cm^2 , determine the pressure he exerts on the floor. (take $g=10 \text{ N/kg}$)	M1.01	A
	OR		
XII	(a) Convert 0.357 atm to torr. (b) Convert 6.6×10^{-2} torr to atmospheres. (c) Convert 147.2 kpa to torr.	M1.01	A
XIII	Explain the construction and working of mercury in glass thermometer.	M4.02	U
	OR		
XIV	Write the comparison between RTD and thermocouple.	M4.02	U
