

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/
COMMERCIAL PRACTICE – APRIL - 2023
PROCESS VARIABLE MEASUREMENTS**

(Maximum Marks : 75)

[Time : 3 hours]

PART-A

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

(9x1=9 marks)

		Module Outcome	Cognitive level
1	Convert 1.07atm into psi.	M 1.01	A
2	Name the device used to test and calibrate pressure gauges.	M 1.06	U
3	Name the constant which determines the type of flow.	M2.01	U
4	Name any one non contact type of flow meter.	M2.02	U
5	Which system measures back pressure for level measurement?	M3.01	U
6	Name any one electrical type level gauge.	M3.01	U
7	Write the two different types of pyrometers.	M4.02	R
8	Expand PTC and NTC.	M4.02	U
9	Mention any one application of Thermistor.	M4.02	A

PART B

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

(8x3=24)

		Module Outcome	Cognitive level
1	Write any three gauges used to measure Vacuum.	M1.05	R
2	The air pressure inside a submarine is 0.62 atm. What would be the height of a column of mercury balanced by this pressure?	M1.01	A
3	State Bernoulli's principle with its equation.	M2.01	R
4	State the working principle of Rotameter.	M2.02	U
5	State the working principle of Float type level indicator.	M3.01	U
6	Draw and mark the parts of a radiation level detector.	M3.02	U
7	Differentiate between Seebeck effect and Peltier effect.	M4.02	U
8	Convert - 75°C, into °F and °K.	M4.01	A
9	State the two laws of thermocouple.	M4.02	R
10	Draw and mark the parts of a Flow Nozzle.	M2.02	U

PART C

Answer **all** questions from the following. Each question carries 7 marks.

(6x7=42marks)

		Module Outcome	Cognitive level
III	With neat diagram, describe the construction and working of Bellows type pressure gauges. OR	M1.03	U
IV	Illustrate the method of pressure measurement using Capacitive type gauges.	M1.04	U
V	Explain the construction and working of a McLeod Vacuum gauge. OR	M1.05	U
VI	Apply the working principle of strain gauge in pressure measurement.	M1.04	U
VII	Deduce the type of flow of a syrup having a density of 1300kg/m^{-3} , viscosity of 17PaS and flowing at a rate of $4\text{m}^3/\text{s}$ in a circular pipe of diameter 6 cm. OR	M2.01	A
VIII	Explain the construction and working of Coriolis type mass flow meter.	M2.02	U
IX	With a neat sketch, describe Radiation type level indicator. OR	M3.02	U
X	Explain Differential Pressure type level indicator.	M3.02	U
XI	Describe the construction and working of Bimetallic Thermometer. OR	M4.02	U
XII	Describe the characteristics of RTD and its different types.	M4.02	U
XIII	Compare the characteristics of Thermocouple and Thermistor. OR	M4.03	U
XIV	Explain the properties of different types of industrial thermocouples.	M4.03	U
