

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/
COMMERCIAL PRACTICE, APRIL - 2026**
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	Convert 110 Pa to atm.	M1.01	A
2	Define vacuum pressure.	M1.01	R
3	Define laminar flow.	M2.01	U
4	List any 2 type of variable head flowmeter.	M2.02	R
5 is the working principle of displacer level indicator.	M3.01	U
6	List any two types of direct method of level measurement.	M3.01	R
7	Define PTC.	M4.02	R
8	Which device is used to measure high temperature such as temperature in furnaces?	M4.02	R
9	Convert 100°C in to Fahrenheit scale.	M4.01	A

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	What is piezoelectric effect and write the examples of piezoelectric materials?	M1.04	U						
2	List different types of pressure.	M1.01	R						
3	Derive the pressure equation of U tube manometer.	M1.02	A						
4	Match the following. <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="padding: 2px;">Bourdon tube</td> <td style="padding: 2px;">10^{-6} Torr</td> </tr> <tr> <td style="padding: 2px;">McLead gauge</td> <td style="padding: 2px;">Mechanical pressure</td> </tr> <tr> <td style="padding: 2px;">Manometer</td> <td style="padding: 2px;">Pressure in pipes</td> </tr> </table>	Bourdon tube	10^{-6} Torr	McLead gauge	Mechanical pressure	Manometer	Pressure in pipes	M1.02	U
Bourdon tube	10^{-6} Torr								
McLead gauge	Mechanical pressure								
Manometer	Pressure in pipes								
5	State Bernoulli's principle.	M2.02	U						
6	List difference between laminar flow and turbulent flow.	M2.01	R						
7	Draw the diagram of capacitive level indicator and write the equation of capacitance.	M3.01	U						

8	Write the function of radioactive source in radiation level detector and write any two most common forms of nuclear radiation.	M3.01	U
9	Convert 15 degree Celsius to Kelvin scale and Fahrenheit scale.	M4.01	A
10	What is thermopile?	M4.03	U

PART C

Answer all questions. Each question carries seven marks

(6 x 7 = 42 Marks)

		Module outcome	Cognitive level
III	Convert 1N/m ² in to corresponding Pascal, psi, torr and atm pressure scale.	M1.01	A
	OR		
IV	Explain electrical pressure transducer.	M1.04	U
V	Explain variable area flowmeter.	M2.02	U
	OR		
VI	Illustrate the construction and working of Venturi tube.	M2.02	U
VII	Explain any two types of positive displacement flow meter.	M2.02	U
	OR		
VIII	Explain calibration of liquid flow meter.	M2.03	U
IX	Explain air purge type level indicator .	M3.01	U
	OR		
X	Illustrate the construction and working of ultrasonic level gauge.	M3.01	U
XI	List the advantage and disadvantage of Radiation pyrometer.	M4.02	R
	OR		
XII	Explain the construction and working of thermocouple.	M4.02	U
XIII	Explain the construction and working of RTD.	M4.02	U
	OR		
XIV	Compare the characteristics of RTD, Thermistor and Thermocouple.	M4.03	R
