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(Revision - 2021)

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DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/ COMMERCIAL PRACTICE, APRIL - 2026

INDUSTRIAL INSTRUMENTATION

[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 relative viscosity.	M1.01	R
2	Mention the pH range of acid and base.	M1.01	U
3	List one instrument used for moisture measurement.	M2.01	R
4	Name any one material used for scintillation.	M2.01	R
5	List one sensor used to measure torque.	M3.01	R
6	Write any two types of tachometer generator.	M3.01	R
7	Expand the term MEMS.	M4.01	R
8	List any two thickness measurement method.	M4.01	R
9	Name any two radiation detectors.	M2.01	R

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	Write a short note on Sorensen's pH scale.	M1.01	R
2	Define the following: a) Absolute viscosity b) Kinematic viscosity	M1.01	R
3	State the working principle of ionization chamber.	M2.02	R
4	Draw and label Geiger Muller tube.	M2.02	U
5	Write a short note on working of resistive hygrometer.	M2.02	R
6	Mention the force measurement methods.	M3.02	R
7	State the working principle of Proximity torque sensor.	M3.02	A
8	Draw and label Seismic accelerometer.	M4.02	U
9	List the advantages of MEMS.	M4.02	R
10	Write the working principle of strain gauge load cell.	M3.02	A

PART C

Answer all questions. Each question carries seven marks.

(6 x 7 = 42 Marks)

		Module outcome	Cognitive level
III	With the help of neat diagram explain Saybolt Viscometer	M1.02	U
	OR		
IV	Explain the construction and working principle of Calomel electrode.	M1.03	U
V	Describe density measurement using differential pressure method.	M1.02	U
	OR		
VI	Illustrate the construction and working principle of glass electrode for pH measurement.	M1.02	U
VII	Describe the construction and working of dry and wet bulb psychrometer.	M2.02	R
	OR		
VIII	Illustrate the construction and working principle of scintillation counter.	M2.03	U
IX	Explain the construction and working principle of pneumatic load Cell.	M3.03	U
	OR		
X	With the help of diagram explain the working of DC tachometer generator.	M3.03	U
XI	Describe the construction and working of LVDT accelerometer.	M4.02	A
	OR		
XII	Illustrate the MEMS Sensor with application.	M4.02	R
XIII	With neat diagram explain ultrasonic method for thickness measurement.	M4.02	U
	OR		
XIV	Briefly explain the working of mechanical vibration sensors.	M4.02	U

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