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(Revision - 2021)

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DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/ COMMERCIAL PRACTICE, NOVEMBER - 2024

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 viscosity.	M1.01	U
2	What happens to the viscosity of liquid with increase in temperature?	M1.02	U
3	Name an instrument used for the measurement of humidity.	M2.01	R
4	Name any two nuclear radiations.	M2.02	R
5	What is the use of load cell?	M3.03	R
6	Which instrument is used to measure periodic or rotary motions without making contact with rotating body?	M3.02	U
7	What is the principle of DC tachogenerator?	M3.03	U
8	List any two advantages of MEMS.	M4.04	R
9	What is the basic principle of thickness measurement using Capacitive method?	M4.01	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	Draw the picture of glass electrode used for pH measurement.	M1.02	R
2	Explain sorensen's scale for pH measurement.	M1.01	U
3	Explain the working capillary tube viscometer.	M1.02	U
4	Illustrate the working of resistive hygrometer.	M2.02	U
5	Explain the working of dry and wet bulb psychrometer.	M2.02	U
6	Draw the picture of proximity torque sensor.	M3.02	R
7	Draw the picture of eddy current tachometer.	M3.02	R
8	What is the working principle of straingauge loadcell?	M3.02	U

9	Draw the picture of seismic accelerometer.	M4.02	R
10	Write short notes on nanosensors.	M4.01	U

PART C

Answer all questions. Each question carries seven marks.

(6 x 7 = 42 Marks)

		Module outcome	Cognitive level
III	With necessary figures, explain density measurement using LVDT.	M1.02	U
	OR		
IV	Explain combined electrode used for pH measurement with a neat diagram.	M1.02	U
V	Explain the construction and working of Hair hygrometer with neat diagram.	M2.02	U
	OR		
VI	Describe the working of scintillation counter with diagram.	M2.02	U
VII	Explain construction and working of Hydraulic loadcell with diagram.	M3.02	U
	OR		
VIII	Explain construction and working of stationary torque sensor.	M3.02	U
IX	Describe any one method of mechanical type speed measurement.	M3.02	U
	OR		
X	With neat diagram explain, the construction and working of Stroboscope.	M3.02	U
XI	With necessary schematic, explain MEMS components.	M4.02	U
	OR		
XII	Explain any one type of smoke detector.	M4.02	U
XIII	Explain the construction and working of piezoelectric accelerometer.	M4.02	U
	OR		
XIV	Explain eddy current method used for measurement of thickness.	M4.02	U

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