PRN:		Course Code :	UEC402

Second Year **B. Tech** Semester End Examination Winter 2024

Sensors and Instrumentation 000196

Day and Date: Mon 25 Nov 2024 Max Marks: **100**

Time : 02:00PM To 05:00PM Duration: **03** hrs

Instructions: All questions are compulsory.

			Marks	Bloom's Level	CLO
Q.1		**Attempt the following**			
	a)	With block diagram explain generalized measurement system	08	L4	CLO3
	b)	Define Accuracy and precision.Explain the difference between them with examples.	08	L4	CLO3
		OR			
	b)	Explain different types of errors encountered in measurement system.	08	L3	CLO3
Q.2		**Attempt the following**			
	a)	With neat circuit diagram explain the operation of potentiometer for displacement measurement.	08	L4	CLO2
	b)	Describe the method of indirect level measurement using Gamma ray method	08	L4	CLO2
		OR			
	b)	Describe the method of liquid level measurement using float type with neat figure.	08	L2	CLO2
Q.3		**Attempt any two from the following**			
	a)	With neat circuit diagram explain the operation of piezoelectric pressure transducer	08	L2	CLO1
	b)	Write short notes on diaphragm and bourden tubes.	08	L2	CLO1
	c)	With neat diagram explain the principle of capacitive transducer for pressure measurement.	08	L2	CLO1
Q.4		**Attempt any two from the following**			
	a)	Derive expression for gauge factor of resistance strain gauge .	08	L3	CLO4
	b)	With neat diagram explain Column type load cell.	08	L2	CLO4
	c)	Write short notes on Wire gauges.	08	L3	CLO4
Q.5		**Attempt any two of the following**			
	a)	What is thermistor? Explain operation & characteristics of thermister	09	L1	CLO2
	b)	With neat diagram explain the operation of Thermocouple.	09	L1	CLO2
	c)	Explain the principle of radiation pyrometer with neat figure.	09	L1	CLO2
Q.6		**Attempt any two of the following**			
	a)	What is humidity. Explain resistive hygrometer with neat figure.	09	L2	CLO4
	b)	Draw the characteristics of LDR. Explain construction & operation of LDR	09	L2	CLO4
	c)	Explain measurement of speed using d.c tachometer with figure.	09	L2	CLO4

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