PRN:		Course Code :	ECE204R1

Second Year **B. Tech** End Semester Examination Summer 2023

Sensors and Instrumentation

Day and Date: Thursday, 15/06/2023 Max Marks: **100**

Time : 2.00 to 5.00 PM Duration: **03**hrs

Instructions:All questions are compulsory.

			Marks	Bloom's Level	CLO
Q.1		**Attempt the following**			
	a)	Explain different methods of correction for interfering and modifying inputs	08	L2	CLO1
	b)	Define Accuracy and precision. Explain the difference between them with examples.	08	L2	CLO1
		OR			
	b)	With block diagram explain generalized measurement system.	08	L2	CLO1
Q.2		**Attempt the following**			
	a)	With neat circuit diagram explain the operation of LVDT for displacement measurement.	08	L3	CLO2
	b)	Describe the method of indirect level measurement using Gamma ray method	08	L3	CLO2
		OR			
	b)	Describe the method of liquid level measurement using Capacitive probe type with neat figure.	08	L3	CLO2
Q.3		**Attempt any two from the following**			
	a)	What is pressure ? Explain different pressure sensing elements.	08	L2	CLO3
	b)	With neat circuit diagram explain the operation of piezoelectric pressure transducer.	08	L2	CLO3
	c)	With neat diagram explain the principle ofPressure multiplexer	08	L2	CLO3
Q.4		**Attempt any two from the following**			
	a)	Derive expression for gauge factor of resistance strain gauge .	08	L4	CLO4
	b)	With neat diagram explain Proving ring type load cell.	08	L3	CLO4
	c)	Describe the operation of un-bonded strain gauge with diagram.	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 optical pyrometer with neat figure.	09	L1	CLO2
Q.6		**Attempt any two of the following**			
	a)	Explain measurement of flow using Electromagnetic flow sensor.	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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