Code No: P21CBT01

HALL TICKET NUMBER

PACE INSTITUTE OF TECHNOLOGY & SCIENCES::ONGOLE
(AUTONOMOUS)
II B.TECH I SEMESTER END REGULAR EXAMINATIONS, JAN - 2023
SENSORS AND TRANSDUCERS
(CSE(IOTCSBT) Branch)

Time: 3 hours   Max. Marks: 70

Answer all the questions from each UNIT (5X14=70M)

Q.No.		Questions	Marks	CO	KL
		UNIT-I			
1.	a)	Explain about different errors present in measurement systems.	[7M]	1	2
	b)	Classify the transducers and give the significance of each.	[7M]	1	3
		OR			
2.	a)	Describe the measurement system with neat block diagram.	[7M]	1	2
	b)	Briefly explain the basic requirement of transducers.	[7M]	1	2
		UNIT-II			
3.	a)	Explain smart sensor architecture with the help of block diagram.	[7M]	2	2
	b)	Describe about the fiber optic sensors with relevant diagrams.	[7M]	2	2
		OR			
4.	a)	Explain the principle involved in the Ultrasonic Sensor with the help of suitable diagrams.	[7M]	2	2
	b)	Apply the concept of Sensors in different applications.	[7M]	2	3
		UNIT-III			
5.	a)	Write short notes on static and dynamic characteristics of transducers.	[7M]	3	2
	b)	Explain about the mathematical model of transducer.	[7M]	3	3
		OR			
6.	a)	Design Zero-Order Transducer with relevant example.	[7M]	3	3
	b)	What is the response of transducer for a ramp input in relevance to first order? Explain.	[7M]	3	2
		UNIT-IV			
7.	a)	What is strain gauge? Explain the working Principle of Potentiometer with relevant diagrams.	[7M]	4	2
	b)	Describe in detail the working principle of variable reluctance transducer.	[7M]	4	2
		OR			
8.	a)	What is Hall Effect? Briefly explain its working principle and applications.	[7M]	4	3
	b)	Explain in detail, the principle of operation involved in LVDT with necessary diagrams.	[7M]	4	2
		UNIT-V			
9.	a)	Describe the DAQ Hardware used in data acquisition with necessary diagrams.	[7M]	5	2
	b)	Draw and Design DAQ Software Architecture with neat diagram.	[7M]	5	3
		OR			
10.	a)	What is data acquisition? Write short notes on different components of Computer based Measurement System.	[7M]	5	2
	b)	Write short notes on the selection and configuration of data acquisition device.	[7M]	5	2

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