

**PRAGATI ENGINEERING COLLEGE: SURAMPALEM
(AUTONOMOUS)**

III B.Tech II Semester Regular/Supplementary Examinations, April - 2024

SENSORS AND TRANSDUCERS

(Common to ME,CSE(AI&ML),CSE(DS) and CSE)

Time: 3 hours

Max. Marks: 70M

Answer ONE Question from each Unit

All Questions Carry Equal Marks

Q. No.	Questions	BTL	CO	Marks
UNIT – I				
1.	a) Explain any three dynamic characteristics of generalized instruments.	K2	CO1	7M
	b) Compare and contrast zero order and first order transducers along with its input – output relations.	K4	CO1	7M
OR				
2.	a) Illustrate the behavior of transducers when subjected to step and ramp inputs, with necessary diagrams.	K3	CO1	7M
	b) Draw and explain the response of general instruments to transient input.	K2	CO1	7M
UNIT – II				
3.	a) Explain about relative displacement, with suitable diagrams and equations.	K2	CO2	7M
	b) What is the working principle of resistance strain gauges? Explain any one of the types of resistance strain gauge with necessary diagram.	K2	CO2	7M
OR				
4.	a) Write short note on the capacitance transducers.	K2	CO2	7M
	b) With suitable diagrams explain the working of digital displacement transducers.	K2	CO2	7 M
UNIT – III				
5.	a) Describe about photoelectric transducers and its usage in force measurement.	K2	CO3	7M
	b) Illustrate how electromagnetic flow meter is used in flow measurement.	K4	CO3	7M
OR				
6.	a) Write short note on how liquid and gas systems used in pressure measurement.	K2	CO3	7M
	b) What is the working principle of elastic transducers? Explain any one of the types of elastic transducers.	K4	CO3	7M
UNIT – IV				
7.	a) Explain in detail about liquid-in-glass thermometers with necessary diagrams.	K2	CO4	7M

	b)	Explain about resistance thermometers along with its working principle.	K2	CO4	7M
OR					
8.	a)	Illustrate how heat flux sensors are used in temperature measurements.	K4	CO4	7M
	b)	Write short note on silicon and quartz sensors.	K2	CO4	7M
UNIT – V					
9.	a)	Explain about information coding processing in smart sensors with suitable examples.	K3	CO5	7M
	b)	Describe briefly about any three standards used for smart sensor interface.	K2	CO5	7M
OR					
10.	a)	Write short note on any four aerospace sensors.	K2	CO5	7M
	b)	Describe briefly about various sensors used in onboard automobile.	K2	CO5	7M