

THE KAVERY ENGINEERING COLLEGE*(An Autonomous Institution)***B.E/B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, APRIL-MAY 2025****Seventh Semester****Electrical and Electronics Engineering****OMR353 - Sensors****Regulations - 2021****Duration : 3 Hrs****Maximum : 100 Marks****PART – A (ANSWER ALL QUESTIONS) (Marks 10*2=20)**

Q.No	Questions	BLT	CO	Marks
1.	What are the methods of measurement?	L1	1	2
2.	Why calibration of sensor is important?	L2	1	2
3.	Mention the advantages and disadvantages of potentiometer.	L1	2	2
4.	Define encoder.	L1	2	2
5.	What is strain gauge?	L1	3	2
6.	State the principle of hall effect.	L1	3	2
7.	Draw the resistance characteristics of photoconductive cell.	L2	4	2
8.	What is mean by piezoelectric effect?	L1	4	2
9.	Why signal conditioning is important?	L2	5	2
10.	Mention the applications of instrumentation amplifier.	L1	5	2

PART – B (ANSWER ALL QUESTIONS) (Marks 5*16 = 80)

Q.No	Questions	BLT	CO	Marks
11.	a i Explain the various types of sensors used in the measurement system.	L2	1	10
	ii Summarize the various types of errors in the measurements.	L2	1	6
	Or			
	b i Define the given static characteristics: accuracy, precision, resolution, sensitivity, threshold, linearity and span.	L2	1	10
	ii Classify the types of calibration methods.	L2	1	6
12.	a i Explain with neat diagram the construction and working principle of incremental and absolute type encoders.	L2	2	10
	ii Elucidate the working principle of piezoelectric accelerometers.	L2	2	6
	Or			
	b i Describe the working principle of an LVDT for measuring displacement and how its operation dependent on the position of the core.	L2	2	10
	ii Illustrate the construction and working principle of ultrasonic	L2	2	6

sensor.

13.	a	Explain the different types of strain gauges with necessary sketches and mention its advantages and limitations.	L2	3	16
Or					
	b	Explain the different types of magnetic sensors with necessary sketches and mention its advantages and limitations.	L2	3	16
14.	a	Illustrate the working principle of photovoltaic transducer and piezoelectric transducers with neat sketches.	L2	4	16
Or					
	b	Explain the different types of temperature sensors with relevant characteristics and mention its applications.	L2	4	16
15.	a i	Illustrate the appropriate bridge used for the measurement of medium resistance values with neat circuit.	L2	5	10
	ii	Infer the role of an instrumentation amplifier in signal condition system.	L2	5	6
Or					
	b i	Illustrate the bridge circuit used for the measurement of inductance values.	L2	5	10
	ii	Outline the fundamental principle of data acquisition system.	L2	5	6