

UNIT-1 (SENSORES)

Multiple Choice questions

1	1. A sensor is a device that converts:
	A) Electrical energy into heat B) Physical quantity into a measurable signal C) Heat into mechanical energy D) Chemical energy into light
2	2. Which of the following is a resistive sensor?
	(A) LVDT B) Potentiometer C) Piezoelectric sensor D) Capacitive sensor
3.	3. The unit of gauge factor in a strain gauge is:
	A) Ohm B) Volt C) Dimensionless D) Newton
4.	4. The working principle of a resistance strain gauge is based on change in:
	A) Capacitance B) Inductance C) Resistance D) Voltage
5	5. Semiconductor strain gauges have:
	A) Lower sensitivity than metal gauges B) Higher sensitivity than metal gauges C) Equal sensitivity D) No sensitivity
6.	6. Which sensor operates on the principle of electromagnetic induction?
	A) Capacitive sensor B) Potentiometer C) Inductive sensor D) Quartz sensor
7	7. Sensitivity of a sensor is defined as:
	A) Input/output B) Output/Input C) Input \times Output D) Input + Output
8.	8. A capacitive sensor measures changes in:
	A) Resistance B) Current



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	C) Capacitance D) Inductance
9	Electrostatic transducers belong to:
	A) Inductive sensors B) Capacitive sensors C) Resistive sensors D) Magnetic sensors

10.	Which material is commonly used in quartz resonator sensors?
	A) Silicon B) Copper C) Quartz crystal D) Iron
11.	Ultrasonic sensors use waves with frequencies:
	A) Below 20 Hz B) Between 20 Hz and 20 kHz C) Above 20 kHz D) Below 20 kHz
12.	Linearity of a sensor refers to:
	A) Sensor size B) Straight-line relationship between input and output C) Sensor cost D) Sensor weight
13.	Environmental parameters affecting sensors include:
	A) Temperature B) Humidity C) Pressure D) All of the above
14	Which transducer is suitable for displacement measurement?
	A) Potentiometer B) Thermistor C) Piezoelectric crystal D) Ultrasonic cleaner
15	The primary advantage of ultrasonic sensors is:
	A) Contact measurement B) Non-contact measurement C) High power consumption D) Low accuracy
	Fill in the blanks
1.	Sensors convert physical quantities into _____ signals.
2.	Temperature, humidity, and vibration are examples of _____ parameters.
3.	The closeness of a measured value to the true value is called _____.
4.	The minimum change in input detectable by a sensor is called _____.
5	The ratio of output change to input change is known as _____.



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6	A resistive potentiometer converts displacement into a change in _____.
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7	A strain gauge is commonly used to measure _____.
8	The resistance strain gauge works on the principle that resistance changes with _____.
9	The sensitivity of a strain gauge is represented by its _____ factor.
10	Semiconductor strain gauges are made from materials such as _____.
11	Inductive sensors operate by varying the _____ of a coil.
12	LVDT stands for Linear Variable Differential _____.
13	LVDT stands for Linear Variable Differential _____.
14	Quartz resonators utilize the _____ effect for force measurement.
15	Ultrasonic sensors determine distance by measuring the _____ time of sound waves.