CBCS SCHEME

USN | | | | | | | | | | |

22MAR/MIA15

First Semester M.Tech Degree Examination, Jan./Feb. 2023
Sensors Applications in Manufacturing

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.

		Module – 1	M	L	C
Q.1	a.	Define the following terms : i) Sensitivity ii) Stability iii) Resolution iv) Response time v) Dead band.	10	L2	CO1
	b.	Explain the working of a magnetic sensor and list the application of it.	10	L2	CO1
		OR			
Q.2	a.	Explain the working of ultrasonic sensor with applications.	10	L3	CO1
	b.	Write short notes on : i) Analog to digital to converter ii) Filtering devices.	10	L2	CO1
		Module – 2			
Q.3	a.	Explain the working of bar code sensors and what are the benefits of it.	10	L2	CO2
	b.	Explain the working of RFID.	10	L2	CO2
		OR			
Q.4	a.	Explain colour comparator, with a neat diagram.	10	L2	CO2
	b.	With the help of graph explain unit colour measurement.	10	L2	CO2
		Module – 3			
Q.5	a.	Define FMS, and explain the types of FMS.	10	L2	CO2
	b.	List the sensors used in flexible manufacturing system and explain.	10	L2	CO4
		OR			
Q.6	a.	Write short notes on image capturing achieved in vision sensors.	10	L2	CO4
	b.	How partially visible objects detected using end effectors camera sensor? Explain in detail.	10	L2	CO4
		Module – 4			
Q.7	a.	Explain cryogenic manufacturing applications.	10	L2	CO2
	b.	Explain the use of optical sensors in quantifying acidity solutions.	10	L2	CO2
		OR			
Q.8	a.	Explain ultrasonic stress sensors.	10	L2	CO4
	b.	Write short notes on reflective strip imaging camera sensor.	10	L2	CO4
		Module – 5			
Q.9	a.	With a neat sketch explain RTD (Resistance Temperature Detector).	10	L2	CO4
	b.	Write short notes on temperature sensing by thermocouple.	10	L2	CO4
		OR			
Q.10	a.	Explain diagnostic system in manufacturing enterprises.	10	L2	CO4
	b.	Explain the process of sensors tracking the mean time between operator interventions.	10	L2	CO4

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