PVP 20

Code: 20EC2501A

III B.Tech - I Semester – Regular / Supplementary Examinations
NOVEMBER 2024

SENSOR TECHNOLOGY

(Common to ALL Branches)

Duration: 3 hours Max. Marks: 70

Note: 1. This paper contains questions from 5 units of Syllabus. Each unit carries 14 marks and have an internal choice of Questions.
2. All parts of Question must be answered in one place.

BL – Blooms Level CO – Course Outcome

			BL	CO	Max. Marks
UNIT-I					
1	a)	Illustrate mathematical modeling in sensor technology, explain the term approximation with respect to mathematical modeling using functional approximation.	L4	CO1	7 M
	b)	Explain the meaning of the term approximation.	L1	CO1	7 M
OR					
2		Define Calibration. Explain how calibration can be done in computation of transfer function parameters.	L1	CO1	14 M
UNIT-II					
3	a)	Explain Gauss's law and its utilization.	L4	CO2	7 M
	b)	Define electric force and Electric field and explain how they are related.	L1	CO2	7 M

OR					
4	a)	List various sources of magnetic field. Draw magnetic field distribution surrounding a permanent magnet and current carrying conductor.	L1	CO2	7 M
	b)	Demonstrate the significance of Faradays law with neat explanation.	L3	CO2	7 M
UNIT-III					
5	a)	List the characteristics of a good operational amplifier.	L1	CO3	7 M
	b)	Write short on Voltage to Frequency conversion Principle.	L4	CO3	7 M
OR					
6	Explain the following OP-Amp circuits i. Inverting and non-inverting amplifiers ii. Instrumentation amplifier		L4	CO3	14 M
UNIT-IV					
7	Define thermal sensor. Classify various temperature sensors. What are the different approximation methods of resistive thermometers?		L1	CO4	14 M
OR					
8	a)	Explain the construction and working of LDR with neat sketch.	L4	CO4	7 M
	b)	Explain the principle of various reluctance accelerometer.	L4	CO4	7 M

UNIT-V				
9	Describe surface processing. Explain about spin casting.	L1	CO5	14 M
OR				
10	Explain the term photolithography and wet etching.	L4	CO5	14 M