

K. J. Somaiya Institute of Technology, Sion, Mumbai-22
(Autonomous College Affiliated to University of Mumbai)

Supplimentary Exam (Feb/ March 2024)

(B.Tech) Program: EXTC Scheme I/II/IIB/III: II

Examination TY Semester: V

Course Code: EXDLC5052 Course Name: Sensor Technology

Date of Exam: 05/03/24

Duration: 2.5 Hours

Max. Marks: 60

Instructions:

- (1) All questions are compulsory.
- (2) Draw neat diagrams wherever applicable.
- (3) Assume suitable data, if necessary.

		Max. Marks	CO	BT level
Q 1	Solve any six questions out of eight:	12		
i)	Define an inverse transducer. Give an example.	2	CO1	U
ii)	What is the working principle of IR sensor?	2	CO2	U
iii)	Write advantages and disadvantages of thermistor.	2	CO2	U
iv)	What is the actuator?	2	CO3	U
v)	How does Zigbee Technology Work?	2	CO4	U
vi)	What is the signal conditioning?	2	CO5	U
vii)	Which sensors is suitable for irrigation management in agriculture?	2	CO6	U
viii)	Why is sensor calibration so important?	2	CO1	U
Q.2	Solve any four questions out of six.	16		
i)	Differentiate passive and active transducers. Give an example of each.	4	CO1	U
ii)	Explain Ultrasonic Proximity sensor in detail	4	CO2	U
iii)	Describe MEMS Microphone in detail.	4	CO3	U
iv)	How does RFID work explain with suitable diagram?	4	CO4	U
v)	Write note on SCADA system	4	CO5	U
vi)	What is GIS remote sensing?	4	CO6	U

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Q.3	Solve any two questions out of three.	16		
i)	Define following term. (i) Resolution (ii) Repeatability (iii) Accuracy (iv) Fidelity (v) Absolute pressure (vi) Mechanical hysteresis (vii) Static error	8	CO1	U
ii)	Explain Piconet and Scatternet network in Bluetooth.	8	CO4	U
iii)	Draw and Explain the function of each component of a Digital Data Acquisition System.	8	CO5	U
Q.4	Solve any two questions out of three.	16		
i)	Enlist primary pressure sensing devices. Describe with neat sketch, measurement of pressure using LVDT.	8	CO2	U
ii)	Describe the architecture of MEMS sensors. Explain any one example of MEMS.	8	CO3	U
iii)	What is the onboard sensor? How it is used in automobile applications	8	CO6	U
