

I SEMESTER M. TECH (Common for ECA and IOT) END SEMESTER EXAMINATION DECEMBER 2023 INTELLIGENT SENSING (ICE 5116)

Note: Answer All questions.

ime: 3 Hours	07-12-2023	MAX. MARKS: 50
	Instructions to Candidates:	
*	Answer ALL the questions.	

Q. No.	Description	Μ	CO	PO	BL
1A	How does sensorization contribute to data accuracy? Compare and contrast hardware and software compensation strategies in enhancing sensor performance.	3M	1	1-4	3
1B	Examine the structure of MODBUS message frames, incorporating signal-level considerations	3M	2	1-4	4
1C	Analyze the principles behind beacon-based transmission in Zigbee- based sensor communication, highlighting its significance in network synchronization.	4M	2	1-4	4
2A	Construct a state diagram illustrating the initiation process of sensor trigger operations in the context of 1451.0, elucidating the key stages and transitions involved.	4M	3	1-4	5
2B	Organize sensors according to their responsiveness to specific stimuli, highlighting the diverse range of sensor classifications based on stimulus-response characteristics.	2M	1	1-4	4
2C	Create a visual representation that illustrates the connectivity within an Intelligent Transport System, emphasizing the interlinkages and communication pathways among various components.	4M	4	1-4	5
3A	Evaluate the components of the TED framework, providing detailed descriptions of their scope, extent, and dimensions.	3M	3	1-4	3
3B	Outline the operational principles and schematic representation of a Traffic Management Controller, elucidating its functionality in coordinating traffic flow at intersections or along road networks.	3M	4	1-4	4

3C	Articulate the structural framework that underlies Intelligent Transport Systems, highlighting the key components and their interrelations for optimizing transportation efficiency.	4M	4	1-4	4
4A	Conduct an in-depth analysis of the operation of Commercial Vehicle Transport systems in the context of urban mobility, exploring the intricacies of their functioning, evaluating their impact on traffic dynamics, and assessing their role in enhancing the overall efficiency of urban transportation.	4M	4	1-4	4
4B	Assess the significance of XMPP (Extensible Messaging and Presence Protocol) in the context of a smart sensor system, exploring the key reasons and implications for its importance	3M	4	1-4	4
4C	Enumerate and elaborate on the operational roles and capabilities of IEEE 1451.3, detailing its functions and contributions within sensor network standards.	3M	3	1-4	3
5A	Detail the operational mechanics of smart sensor systems within Advanced Driver Assistance Systems (ADAS), highlighting their functionalities and roles in enhancing vehicle safety and automation.	5M	5	1-4	4
5B	Explore how smart sensor systems are deployed within a smart grid setting, addressing the strategies involved, the hurdles faced, and the advantages and drawbacks associated with their integration.	5M	5	1-4	4
