GUJARAT TECHNOLOGICAL UNIVERSITY
BE – SEMESTER- VII EXAMINATION-SUMMER 2023

Subject Code: 3171106   **Date: 19/06/2023**
Subject Name: Wireless Sensor Networks
Time: 10:30 AM TO 01:00 PM   **Total Marks: 70**
Instructions:
1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**
4. **Simple and non-programmable scientific calculators are allowed.**

			MARKS
Q.1	**(a)**	State few characteristic requirements of WSNs.	**03**
	(b)	Define the types of Sensors.	**04**
	(c)	Write notes on single node architecture.	**07**
Q.2	**(a)**	Discuss about the MANETs.	**03**
	(b)	Explain about time synchronization mechanisms in WSN.	**04**
	(c)	Explain in detail low duty cycle MAC protocols.	**07**
		OR	
	(c)	Generalize the concepts on important classes of MAC protocol.	**07**
Q.3	**(a)**	Compare the sensor network with adhoc networks.	**03**
	(b)	Explain how the security provisioning in adhoc network differs from that in infrastructure based network.	**04**
	(c)	Explain traffic adaptive medium access protocol (TRAMA).	**07**
		OR	
Q.3	**(a)**	Differentiate single hop and multi hop networks with neat sketches.	**03**
	(b)	What are the design issues of MAC protocol for Ad hoc wireless networks?	**04**
	(c)	Discuss in detail the Transceiver characteristics and structure.	**07**
Q.4	**(a)**	Discuss in detail about the localization algorithms with a neat sketch.	**03**
	(b)	List and discuss important features of IEEE 802.15.4 standard.	**04**
	(c)	Describe S-MAC Protocol in details.	**07**
		OR	
Q.4	**(a)**	Why we need Gatway?	**03**
	(b)	What are designing constraint of hardware components (sensors) in WSN?	**04**
	(c)	Discuss the distributed assignment of network wide unique MAC address for WSN.	**07**
Q.5	**(a)**	Discuss on Energy Scavenging.	**03**
	(b)	Write short notes on Zigbee architecture.	**04**
	(c)	Explain how the sensor networks are deployed for various applications.	**07**
		OR	
Q.5	**(a)**	Why we need WSN?	**03**
	(b)	Write short notes on Hogthrob Node Architecture.	**04**
	(c)	What is data dissemination? Why dissemination protocols are required in WSN?	**07**

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