Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

ME – SEMESTER II– EXAMINATION – WINTER - 2016

Subject Code: 2722711 **Date: 17/11/ 2016**

Subject Name: Wireless Ad-Hoc and Sensor Networks

Time: 2:30 pm to 5:00 pm **Total Marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Explain the components of IEEE 802.11 (Wireless LAN) Network in detail.	**07**
	(b)	What is Mobile Ad-hoc Network (MANET)? Explain the various applications and Challenges in Mobile Ad-hoc Network (MANET).	**07**
Q.2	**(a)**	Explain the difference between Wireless LAN (WLAN) and Wireless PAN (WPAN) technologies in detail.	**07**
	(b)	Explain the difference between Proactive, Reactive and Hybrid approaches of Routing protocols in Ad-hoc Networks and explain DSDV protocol in detail.	**07**
		OR	
	(b)	What is the difference between Tree-Based and Mesh-Based Multicast Routing Protocols in Ad-hoc Networks? Explain MAODV Protocol in detail.	**07**
Q.3	**(a)**	Explain the Location Based Multicast (LBM) routing protocol in detail.	**07**
	(b)	Describe Spectrum Access Models for Cognitive Radio.	**07**
		OR	
Q.3	**(a)**	Why does Traditional TCP Not Perform Well in Ad-Hoc Wireless Networks? Explain in detail.	**07**
	(b)	Discuss the Issues in designing MAC protocol for Wireless Ad-hoc Networks in detail.	**07**
Q.4	**(a)**	Write Short-note on "Issues and Challenges in designing of Wireless Sensor Networks".	**07**
	(b)	Explain the Energy Consumptions by various units in Wireless Sensor Network and also explain various techniques to minimize it in brief.	**07**
		OR	
Q.4	**(a)**	Draw and explain basic Wireless Sensor Node Architecture and explain its each component in brief.	**07**
	(b)	List the various applications of Wireless Sensor Network and explain any two applications in detail.	**07**
Q.5	**(a)**	Draw the Heterogeneous Network Architecture and explain its Ingredients.	**07**
	(b)	Explain IEEE 802.15.4 LR-WPANs STANDARD with its Physical Layer and MAC Layer in detail.	**07**
		OR	
Q.5	**(a)**	List the Wireless Protocols/Technologies used in WSNs and also describe complete technical specifications of each Protocols/Technologies.	**07**
	(b)	Discuss the issues and requirements of security in Wireless Ad-Hoc and Wireless Sensor Networks.	**07**

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