Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

ME – SEMESTER IV (NEW) – • EXAMINATION – SUMMER 2016

Subject Code: 2742303 **Date:04/05/2016**

Subject Name: Wireless Sensor Network for IT

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.**

Q.1	**(a)**	Discuss flooding and its variants in WSN along with traffic implosion and overlapping problem.	**07**
	(b)	i) Why it is important in WSN to determine the nature and extent of information used by a distributed multiple access protocol? Also discuss the types of information available at MAC layer of WSN.	**04**
		ii) Explain multi hop wireless communication, auto-configuration and energy ï efficient operation mechanisms in light of WSN.	**03**
Q.2	**(a)**	i) Define energy scavenging. Discuss at least three approaches for it.	**05**
		ii) Write a short note on IoT.	**02**
	(b)	i) Explain operational states of transceivers.	**04**
		ii) Discuss routing challenges and design issues in WSN.	**03**
		OR	
	(b)	i) Explain naming and localization in light of network management in WSN.	**04**
		ii) Explain the three phases of connection oriented protocols.	**03**
Q.3	**(a)**	Explain main components of WSN nodes with diagram. Also state the add-ons found in MANET.	**07**
	(b)	List transport layer protocols designed for WSN. Explain any two of them in detail.	**07**
		OR	
Q.3	**(a)**	List and explain three major categories sensors can be classified. Also explain how area of coverage can be used in various applications.	**07**
	(b)	Explain the factors needs to be considered for designing transport layer protocols for WSN.	**07**
Q.4	**(a)**	Explain SPIN protocol family.	**07**
	(b)	List and explain various interaction pattern found in WSN between source and sink.	**07**
		OR	
Q.4	**(a)**	Discuss the use of interest and gradient in direct diffusion with proper example.	**07**
	(b)	Discuss how TinyOS provides event based programming facility. Give suitable example.	**07**
Q.5	**(a)**	Compare category 1 and category 2 WSN applications.	**07**
	(b)	Give the taxonomy of demand assignment MAC layer protocols. Explain Polling and reservation schemes.	**07**
		OR	
Q.5	**(a)**	Write a note on Home Control applications of WSN.	**07**
	(b)	Define three logical categories of devices in ZigBee enabled network. Also discuss the topologies supported by it to support the different device types of ZigBee network.	**07**

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