Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

ME – SEMESTER III (NEW) – EXAMINATION – WINTER-2016

Subject Code: 2735404 **Date:25/10/2016**

Subject Name: EMBEDDED WIRELESS TECHNOLOGIES

Time:02:30 pm to 05:00 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		**Short Questions**	**14**
	1	What is the WiMax frequency standard for the United States?	
	2	How does FTP differ from TELNET?	
	3	What is the frequency range used by 802.11a, and what modulation technique is used?	
	4	What is the primary difference between the POP3 and IMAP protocols?	
	5	What is a piconet?	
	6	What is the difference between ad-hoc and infrastructure mode in IEEE 802.11?	
	7	What are the three frequency bands typically used for RFID tags?	
	8	What services does TCP provide that UDP does not?	
	9	What is a software define Radio?	
	10	Which frequency band does Bluetooth operate?	
	11	Give difference between GSM and CDMA.	
	12	If you have 5 MHz frequency band what will be the maximum number of channels as per GSM system?	
	13	What are the primary protocols of the TCP/IP suite at the network and transport layers?	
	14	Why OFDM is selected for WiMax?	
Q.2	**(a)**	Explain the difference between FDMA and TDMA.	**03**
	(b)	Discuss difference between 1G, 2G, 3G and 4G technologies	**04**
	(c)	What is MIMO? Explain zero forcing equalization technique in MIMO.	**07**
		OR	
	(c)	Explain UDP SOCKET PROGRAMMING	**07**
Q.3	**(a)**	Cite three advantages for using an active RFID tag.	**03**
	(b)	Explain Bluetooth with application.	**04**
	(c)	Explain Development tools of SDK.	**07**
		OR	
Q.3	**(a)**	Explain OFDM in Detail.	**03**
	(b)	Explain proxy sniffer in detail.	**04**
	(c)	Explain Wi-Fi module with Microcontroller	**07**
Q.4	**(a)**	Differentiate OSI stack with TCP/IP protocol Stack.	**03**
	(b)	Explain 802.11 protocol architecture.	**04**
	(c)	Explain RFID Implementation with any one Microcontroller.	**07**
		OR	
Q.4	**(a)**	What are the four physical layer technologies being used in 802.11 wireless networking?	**03**
	(b)	Explain FHSS in detail.	**04**

	(c)	Explain Zigbee technology and its application in wireless home automation systems	**07**
Q.5	**(a)**	Explain anyone Internet Application Protocol.	**03**
	(b)	Explain Bluetooth architecture stack.	**04**
	(c)	Explain Real time Implementation of GSM & GPRS, With Microcontroller.	**07**

OR

Q.5	**(a)**	Briefly explain the TCP and UDP protocols and the difference between the two protocols.	**03**
	(b)	Explain GSM architecture.	**04**
	(c)	Explain Remote Monitoring using Wireless Sensor Networks (WSN) and Bluetooth technologies.	**07**

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