GUJARAT TECHNOLOGICAL UNIVERSITY
ME – SEMESTER II (NEW) – • EXAMINATION – SUMMER 2016

Subject Code: 2720502   **Date: 25/05/2016**

Subject Name: Wireless and Mobile Communication

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)**	Explain MIMO diversity technique and its application in modern wireless communication system.	**07**
	(b)	What are the types of routing in Mobile Ad-hoc Network? Describe all PROACTIVE type of routing protocols in detail.	**07**
Q.2	**(a)**	Explain the concept of diversity. Also explain Time diversity, Frequency diversity and Space diversity techniques.	**07**
	(b)	A detailed note on OFDM techniques.	**07**
		OR	
	(b)	Write a short note on features and challenges of MANET.	**07**
Q.3	**(a)**	Define channel assignment. Differentiate between static, borrowing and dynamic channel assignment strategies.	**07**
	(b)	Write a short note on RAKE receiver.	**07**
		OR	
Q.3	**(a)**	Explain Security issues and QoS in wireless networks.	**07**
	(b)	Explain MACA & MACAW protocols for MANETs.	**07**
Q.4	**(a)**	Explain different types of small scale fading.	**07**
	(b)	Explain how hand-off takes place in GSM. Also explain MAHO, Intersystem hand-off and prioritizing handoffs.	**07**
		OR	
Q.4	**(a)**	Compare Cell Splitting, Sectoring and Micro cell zone concepts.	**07**
	(b)	Explain impulse response model of a multi path channel with necessary equations.	**07**
Q.5	**(a)**	Find the far field distance for an antenna with maximum dimension of 1 m and operating frequency of 600 Mhz.	**07**
	(b)	Explain Mean excess delay, RMS delay spread, Coherence bandwidth and Doppler Spread for multipath channels.	**07**
		OR	
Q.5	**(a)**	Distinguish between AWGN channel, Rayleigh fading channel and Rician fading channel in a wireless environment. What are the distinct applications of Rayleigh and Rician channel modeling in wireless communications?	**07**
	(b)	Cellular system has 32 cells,each cell has 1.6km redius and the system reuse factor of 7. The system is to support 336 traffic channels in total.Determine the total geographical are covered and the number of traffic channels per cell.	**07**

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