Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

PDDC SEMESTER VIII– EXAMINATION – SUMMER 2017

Subject code: X81102 **Date: 01/05/2017**

Subject Name: WIRELESS COMMUNICATION

Time: 10.30AM to 01.00PM **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 followings: 1) Wireless local loop (WLL) 2) Personal Area Networks	**07**
	(b)	Explain the key differences between first, second and third generation cellular systems? What are the advantages of using CDMA for a cellular network?	**07**
Q.2	**(a)**	Write a short note on: frequency reuse.	**07**
	(b)	Explain how to improve capacity in cellular system.	**07**
		OR	
	(b)	Explain micro cell zoning.	**07**
Q.3	**(a)**	Explain the different types of small scale fading.	**07**
	(b)	Explain the various types of outdoor propagation model.	**07**
		OR	
Q.3	**(a)**	Define large scale propagation model. Also define the function of outdoor propagation model.	**07**
	(b)	Explain the propagation effects with Mobile Radio.	**07**
Q.4	**(a)**	Explain the operation of OFDM with block diagram.	**07**
	(b)	Draw and explain GSM system architecture.	**07**
		OR	
Q.4	**(a)**	Compare TDMA and FDMA for mobile communication.	**07**
	(b)	Draw and explain GPRS system architecture.	**07**
Q.5	**(a)**	Compare hard handoff and soft handoff.	**07**
	(b)	Write a short note on Wi-Max.	**07**
Q.5	**(a)**	The original GSM design uses 25 MHz of bandwidth for the uplink and for the downlink. This bandwidth is divided into 125 TDMA channels of 200 KHz each. Each TDMA channel consists of 8 user timeslots: the 8 timeslots along with a preamble and trailing bits form a frame, which is cyclically repeated in time. Find the total number of users that can be supported in the GSM system and the channel bandwidth of each user.	**07**
	(b)	Write a short note on Wireless Adhoc Network.	**07**

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