Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VII (NEW) EXAMINATION – WINTER 2022

Subject Code:3171608 Date:03-01-2023

Subject Name:Wireless 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.**
4. **Simple and non-programmable scientific calculators are allowed.**

			MARKS
Q.1	**(a)**	Define Cellular network. Explain it with its architecture.	**03**
	(b)	Explain any three different type of generation (1G to 5G) used in wireless system with its advantages and disadvantages.	**04**
	(c)	Illustration of how 120 degree sectoring reduces interference from co-channel cells. Out of the 6 co-channel cells in the first tier, only 2 of them interfere with the center cell. If Omni-directional antennas were used at each base station, all 6 co-channel cells would interfere with the center cell.	**07**
Q.2	**(a)**	Define WLAN. Also explain it with its topology.	**03**
	(b)	How many types of techniques used in WLL? Explain.	**04**
	(c)	Design 802.11 architecture of an infrastructure network.	**07**
		OR	
	(c)	Design 802.11 architecture of an ad-hoc network.	**07**
Q.3	**(a)**	Why we use hexagon shape in cell structure? Give the proper reason.	**03**
	(b)	Clarify how we increase cluster size and cell capacity in cellular network.	**04**
	(c)	What is frequency reuse? Explain it with proper figure.	**07**
		OR	
Q.3	**(a)**	Give proper reason of difference between co-channel interference and adjust channel interference.	**03**
	(b)	Explain handoff process and dwell time.	**04**
	(c)	Explain concept of co-channel cells with its geometry.	**07**
Q.4	**(a)**	Define Radio Propagation. Explain Path- loss of NLOS and LOS systems.	**03**
	(b)	What is CSMA Protocols? Explain briefly.	**04**
	(c)	Explain TDMA and CDMA with example.	**07**
		OR	
Q.4	**(a)**	Define fading. Explain it with its types.	**03**
	(b)	Define Multiple Access Techniques. Compare it.	**04**
	(c)	Explain FDMA and OFDM with example.	**07**
Q.5	**(a)**	Define Wi-Fi, WiMAX and ZigBee Networks.	**03**
	(b)	Briefly explain different types of propagation models.	**04**
	(c)	Define GSM. Explain it with its architecture.	**07**

OR

Q.5	**(a)**	Define Wireless Adhoc Network and Mobile Portability? Explain briefly.	**03**
	(b)	Explain Spread Spectrum with its types.	**04**
	(c)	Define GPRS. Explain it with its architecture.	**07**

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