

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER– VII (New) EXAMINATION – WINTER 2019

Subject Code: 2171004
Date: 28/11/2019
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.

		MARKS
Q.1*	(a) Define the following terms regarding wireless communication: (1) Full duplex channel (2) Mobile Switching Center (3) Base station	03
	(b) Explain the concept of umbrella cell.	04
	(c) With the help of a neat sketch, describe GPRS architecture.	07
Q.2	(a) Explain the concept of Cell Sectoring.	03
	(b) Define: (1) Cell Dragging (2) Handoff (3) Dwell Time (4) RSSI	04
	(c) Write a short note on software defined radio	07
	OR	
	(c) What is ZigBee ? Explain in details ZigBee networks.	07
Q.3	(a) Why hexagonal cell shape is preferred in cellular architecture?	03
	(b) Explain the Space diversity techniques briefly.	04
	(c) Explain Free space propagation model with necessary equations.	07
	OR	
Q.3	(a) Explain channel assignment strategies.	03
	(b) Explain the Frequency diversity techniques briefly.	04
	(c) Briefly explain knife-edge diffraction model.	07
Q.4	(a) Compare FDMA with CDMA technique.	03
	(b) Explain paging system.	04
	(c) Describe: Time Division Multiple Access (TDMA) in detail. Write the equation for efficiency of TDMA and the number of channels in TDMA system.	07
	OR	
Q.4	(a) Explain: I-persistent CSMA and p-persistent CSMA.	03
	(b) Illustrate the upgrade paths 2G and 3G cellular networks and describe in brief.	04
	(c) Write a short note on OFDM.	07
Q.5	(a) What is diffraction? Explain.	03
	(b) Write a short note on UWB radio.	04
	(c) Describe the Rake receiver in CDMA.	07
	OR	
Q.5	(a) What is Scattering? Explain.	03
	(b) Explain wireless Ad-Hoc network.	04
	(c) Draw and Explain GSM system architecture.	07
