

GUJARAT TECHNOLOGICAL UNIVERSITY**BE – SEMESTER- VII EXAMINATION-SUMMER 2023****Subject Code: 2170710****Date: 30/06/2023****Subject Name: Mobile Computing and 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 channel capacity.	03
	(b) Write Shannon and Nyquist capacity formula. State the key factors that affect channel capacity.	04
	(c) Explain GSM architecture and role of its components.	07
Q.2	(a) Write a note on piconet and scatternet.	03
	(b) Explain Android EditText and TextView control with an example.	04
	(c) Draw and explain bluetooth protocol stack.	07
	OR	
	(c) Explain operation of Mobile IP.	07
Q.3	(a) Given a channel with an intended capacity of 50 Mbps, the bandwidth of the Channel is 5 MHz. What signal-to-noise ratio is required to achieve this capacity?	03
	(b) Write a note on DECT frame format.	04
	(c) Discuss the network elements in GPRS that are different from GSM. Also discuss applications and limitations of GPRS.	07
	OR	
Q.3	(a) Explain any two signal multiplexing techniques.	03
	(b) Discuss few attributes of Mobility.	04
	(c) Define spreading sequence. List different categories of spreading sequences. Explain Walsh code with example.	07
Q.4	(a) Differentiate fast and slow fading	03
	(b) Discuss the manifest file with example.	04
	(c) Discuss with suitable diagram distributed coordination function with IEEE 802.11 medium access control logic.	07
	OR	
Q.4	(a) Differentiate flat and selective fading.	03
	(b) Discuss Android activity life cycle.	04
	(c) List all and explain any five IEEE 802.11 services.	07
Q.5	(a) Explain any three addresses and identifiers used in GSM with example.	03
	(b) Write a note on radiation pattern of antenna.	04
	(c) Why is UDP needed? Why can't user program directly access IP?	07
	OR	
Q.5	(a) Justify the need of ARQ.	03
	(b) Explain different types of antennas.	04
	(c) Write advantages and disadvantages of packet switching over circuit switching.	07
