Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VII (NEW) EXAMINATION – WINTER 2017

Subject Code: 2170710 Date:10/11/2017

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.**

Q.1	**(a)**	Define Channel Capacity. Define its key factors that affect it.	**03**
	(b)	Compare: OSI Model and TCP/IP Protocol Architecture.	**04**
	(c)	Draw and Explain GSM Architecture with roles of its components.	**07**
Q.2	**(a)**	What is Frequency Reuse? Explain with proper diagram.	**03**
	(b)	Differentiate: Circuit Switching and Packet Switching.	**04**
	(c)	What is Mobile IP? Explain Discovery, Registration and Tunneling with Mobile IP.	**07**
		OR	
	(c)	What is the need for ARQ? Explain Sliding Window Protocol with example.	**07**
Q.3	**(a)**	Explain DECT Protocol Architecture.	**03**
	(b)	A cellular system uses FDMA with spectrum allocation of 12.5 MHz in each direction, a guard band at the edge of the allocated spectrum of 10 KHz, and a channel bandwidth of 30 KHz. Find out number of channels available.	**04**
	(c)	Draw and Explain Bluetooth Protocol Architecture.	**07**
		OR	
Q.3	**(a)**	Compare: GSM and CDMA.	**03**
	(b)	Consider Global System for Mobile, which is TDMA/FDD system that uses 25 MHz for the forward link, which is broken in to radio channels of 200 KHz. If 8 speech channels are supported on a single radio channel and if no guard band is assumed, find the no of simultaneous users that can be accommodated in GSM.	**04**
	(c)	Draw Android Architecture. Also explain Android Application Framework in brief.	**07**
Q.4	**(a)**	What is Antenna Gain? Explain with its formula.	**03**
	(b)	What is GPRS? How billing and charging is done in GPRS?	**04**
	(c)	What is handoff? Explain its various types.	**07**
		OR	
Q.4	**(a)**	Define IMSI, IMEI and MS-ISDN and write their use.	**03**
	(b)	Explain IEEE 802.11 Architecture.	**04**
	(c)	Explain Wireless Application Protocol (WAP) in detail.	**07**
Q.5	**(a)**	What is hidden terminal problem? How it can be avoided?	**03**
	(b)	For Message M = 1010001101 and Pattern P = 110101, find CRC.	**04**

	(c)	Explain Delta Modulation with their transmission and reception block diagram.	**07**

OR

Q.5	**(a)**	Define: Peak Amplitude (A), Frequency (f) and Period (T).	**03**
	(b)	Explain different types of power control techniques in cellular networks.	**04**
	(c)	Explain Direct Sequence Spread Spectrum in detail.	**07**

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