Seat No.: Enrolment No				
		GUJARAT TECHNOLOGICAL UNIVERSITY		
a		M.E –I <sup>st</sup> SEMESTER–EXAMINATION – JULY- 2012		
•		code: 710206N Date: 11/0	7/2012	
•		Name: Wireless Computer Networks	1 70	
		30 pm – 05:00 pm Total Ma	rks: 70	
Instr				
		empt all questions. ke suitable assumptions wherever necessary.		
		ures to the right indicate full marks.		
Q.1	(a)	What is information network infrastructure? Explain voice oriented network and data oriented networks?	orks <b>07</b>	
	<b>(b)</b>	1 1		
		It is connected to an antenna with a gain of 12dBi. The receiving antenna 10 Km arranged by a serial of 5dBi. Colombia the game delivered to		
		10 Km away and has a gain of 5dBi. Calculate the power delivered to receiver, assuming free-space propagation. Assume also that there are		
		losses or mismatches in the system.	110	
Q.2	(a)	Using QPSK modulation and convolution coding, the IS-95 digital cell	ular <b>07</b>	
<b>~</b>	(4)	systems require 8dB. The bandwidth of the channel is 1.25 MHz, and		
		transmission rate is R=9600 bps. Find the capacity of a single IS-95 cell.		
	<b>(b)</b>	1 1	ges. <b>07</b>	
	(b)	<b>OR</b> Consider a WLAN in which the maximum propagation delay is 0.4 sec.	The <b>07</b>	
	(0)	WLAN operates at a data rate of 10 Mbps and packets have 400		
		Calculate the normalize throughput with: (i) an unslotted nonpersistent (		
		slotted persistent and (iii) a slotted 1-persistent CSMA protocol.		
Q.3	(a)	We consider a cellular system in which total available voice channe	1 to <b>07</b>	
		handle the traffic are 960. The area of each cell is 6 Km2 and the t		
		coverage area of the system is 2000 Km2. Calculate (i) the system capa	-	
		if the cluster size, is 4 and (ii) the system capacity if the cluster of size if How many times would a cluster of size 4 have to be replicated to cover		
		entire cellular area? Does decreasing the reuse factor increasing the sys		
		capacity? Explain.		
	<b>(b)</b>	1 0, 1	and <b>07</b>	
		distributed topology.  OR		
Q.3	(a)		tion <b>07</b>	
Q.c	(4)	when a mobile terminal moves from the coverage of one point of access		
		another?		
	<b>(b)</b>	·		
		frequencies. If the traffic is uniform with an average call holding time of Sec and the call blocking during the system busy hour is 2%, calculated as the call blocking during the system busy hour is 2%, calculated as the call blocking during the system busy hour is 2%, calculated as the call blocking during the system busy hour is 2%, calculated as the call blocking during the system busy hour is 2%, calculated as the call blocking during the system busy hour is 2%, calculated as the call blocking during the system busy hour is 2%, calculated as the call blocking during the system busy hour is 2%, calculated as the call blocking during the system busy hour is 2%, calculated as the call blocking during the system busy hour is 2%, calculated as the call blocking during the system busy hour is 2%, calculated as the call blocking during the system busy hour is 2%, calculated as the call blocking during the system busy hour is 2%, calculated as the call blocking during the system busy hour is 2%, calculated as the calculated a		
		number of voice channel per cell site for N=4, 7 and 12.Assi		
		unidirectional antennas with six interferer in the first cluster and a slope		
		path loss of 40 dB/decade( $\alpha$ =4).		

(a) Explain each and every component of reference architecture of GSM.(b) Explain GSM protocol architecture.

**Q.4** 

07 07

Q.4	(a) (b)	Explain system architecture and handoff management techniques of GPRS. What is wireless application protocol? Explain its programming architecture.	07 07
Q.5	(a) (b)	Explain the following standards: (i) IEEE 802.11 (ii) IEEE 802.15.1 What is the hopping rate of Bluetooth and how many bits are transmitted in one slot? If each frame of the voice packet in Bluetooth carrier 80 bits of sample speech, what is the efficiency of the packet transmission? ?How many number of times a packet has to be sent to support 64 kbps voice in each direction?	07 07
Q.5	(a)	OR Describe protocol stack of Bluetooth? What are the techniques for wireless Geolocation?	07 07
	(b)	what are the techniques for wheless deolocation?	U/

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