Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

Subject code: 170702 **Subject Name: Mobile Computing**

Date: 31/12/2012 **Total Marks: 70**

Time: 10:30 – 01:00 AM

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	(I) What are the services provided by supplementary services?	**03**
		(II) What is an ad-hoc network?	**02**
		(III) List the merits and demerits of Bluetooth.	**02**
	(b)	Explain classical TCP improvements and snooping TCP.	**07**
Q.2	**(a)**	(I) What is the frequency range of uplink and downlink in GSM network?	**02**
		(II) What are the four possible handover scenarios in GSM?	
		(III) What is Multipath propagation? What is dwell time?	**02**
			03
	(b)	Why do MAC scheme in wired network fail in wireless networks. Explain how dose the multiple access with collision avoidance (MACA) scheme work.	**07**
		OR	
	(b)	How is Mobility Management done in GSM? List the various handovers carried out in GSM and explain any one of them in detail.	**07**
Q.3	**(a)**	(I) What are Advantages and Disadvantages of Infrared?	**03**
		(II) Why is conventional routing in wired networks not suitable for wireless networks? Substantiate your answers with suitable examples.	**04**
	(b)	What is active RFID? Describe two applications of active RFID. How is active RFID different from passive RFID? Describe two applications of passive RFID.	**07**
		OR	
Q.3	**(a)**	(I) How is multicast routing carried out in ad-hoc networks?	**04**
		(II) Distinguish between Traditional TCP and wireless TCP?	**03**
	(b)	How does a new Bluetooth device discover a Bluetooth network? For interoperability, the system needs to be open. Describe the security principles in Bluetooth.	**07**
Q.4	**(a)**	(I) what are the essential functional differences between 1st generation, 2nd generation and 3rd generation of networks?	**04**
		(II) What is WiMax? How is it different from WiFi?	**03**
	(b)	Explain how does mobile IP work? What are the challenges with mobile IP with respect to high speed mobility? How does cellular IP solve some of these challenges?	**07**
		OR	
Q.4	**(a)**	(I) What is a WAP gateway? What are its functions?	**04**
		(II) Describe what are the limitations of GPRS?	**03**
	(b)	What is direct sequence spread spectrum technology? Explain how it works in the CDMA technology?	**07**
Q.5	**(a)**	Describe the WAP protocol stack. What are the functions of different layers in this protocol stack?	**07**
	(b)	What re the advantages and disadvantages of wireless LAN? Under what situation is a wireless LAN desirable over wired LAN?	**07**
		OR	
Q.5	**(a)**	How are mobility and handoff managed in wireless LAN?	**07**
	(b)	What are various strengths of SMS? Explain all of them. Also, state what are the applications areas where these strengths can be used?	**07**

****