

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? **03**
 (III) What is Multipath propagation? What is dwell time? **02**
- (b) Why do MAC scheme in wired network fail in wireless networks. Explain how does 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 are 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**
