## Seat No.: \_\_\_\_\_

Enrolment No.\_\_\_\_\_

**GUJARAT TECHNOLOGICAL UNIVERSITY** 

## Subject code: 170702 Date: 31/12/2012

## Subject Name: Mobile Computing Total Marks: 70

Time: 10:30 - 01:00 AM

## **Instructions:**

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

| 0.1         | (a)          | (T) Without the committee and it is been sense to sense the sense of t | 07       |
|-------------|--------------|--|----------|
| Q.1         | (a)          | (I) What are the services provided by supplementary services?<br>(II) What is an ad-hoc network?   | 03<br>02 |
|             |              | (III) List the merits and demerits of Bluetooth.   | 02       |
|             | <b>(b)</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>(b)</b>   | Why do MAC scheme in wired network fail in wireless networks. Explain how dose   | 07       |
|             |              | the multiple access with collision avoidance (MACA) scheme work.<br>OR   |          |
|             | <b>(b)</b>   | How is Mobility Management done in GSM? List the various handovers carried out   | 07       |
|             | (0)          | 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   | 04       |
|             |              | networks? Substantiate your answers with suitable examples.  | ~-       |
|             | <b>(b)</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>(b)</b>   | How does a new Bluetooth device discover a Bluetooth network? For  | 07       |
|             |              | interoperability, the system needs to be open. Describe the security principles in   |          |
|             |              | Bluetooth.   |          |
| Q.4         | (a)          | (I) what are the essential functional differences between 1 <sup>st</sup> generation, 2 <sup>nd</sup> generation   | 04       |
| Q.4         | ( <b>a</b> ) | and $3^{rd}$ generation of networks?   | V4       |
|             |              | (II) What is WiMax? How is it different from WiFi?   | 03       |
|             | <b>(b)</b>   | Explain how does mobile IP work? What are the challenges with mobile IP with   | 07       |
|             |              | respect to high speed mobility? How does cellular IP solve some of these challenges?   |          |
| ~ .         |              | OR   |          |
| Q.4         | (a)          | (I) What is a WAP gateway? What are its functions?   | 04       |
|             | <b>(L)</b>   | (II) Describe what are the limitations of GPRS?  | 03       |
|             | <b>(b)</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  | 07       |
| · ·         |              | protocol stack?  |          |
|             | <b>(b)</b>   | What re the advantages and disadvantages of wireless LAN? Under what situation is  | 07       |
|             |              | a wireless LAN desirable over wired LAN?   |          |
| Q.5         | (n)          | <b>OR</b><br>How are mobility and handoff managed in wireless LAN?   | 07       |
| <b>V</b> .2 | (a)<br>(b)   | What are various strengths of SMS? Explain all of them. Also, state what are the   | 07       |
|             | (0)          | applications areas where these strengths can be used?  | 07       |
|             |              |  |          |

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