

GUJARAT TECHNOLOGICAL UNIVERSITY
M. E. - SEMESTER – I • EXAMINATION – WINTER • 2014

Subject code: 712304N**Date: 05-12-2014****Subject Name: Ubiquitous Computing****Time: 10:30 am - 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) What is the difference between Detection range & Interference range? Explain types of Handover in GSM Networks. **07**
 (b) What is Spread Spectrum technology? Explain DSSS and FHSS in detail with suitable examples. **07**
- Q.2** (a) (I) List various numbers to locate and address MS in GSM. Write their significance also. **04**
 (II) What are Security services offered by GSM? What are related algorithms to it? **03**
 (b) Explain time division multiplexing and code division multiplexing in detail. **07**
- OR**
- (b) Write short note on : MAC management of IEEE 802.11 **07**
- Q.3** (a) Draw Bluetooth protocol stack architecture. Explain LMP and L2CAP in detail. **07**
 (b) (I) What is a Cellular System? Give merits and demerits of Small Cellular Systems. **04**
 (II) Write a note on Traffic and Control channels in GSM. **03**
- OR**
- Q.3** (a) Write a note on Mobile TCP with its merits & demerits. **07**
 (b) In time division multiple access, explain demand assignment multiple access with explicit reservation and with implicit reservation. **07**
- Q.4** (a) What is the need of mobile IP? Explain dynamic host configuration protocol **07**
 (b) (I) How does the near / far effect influence TDMA system? What happens in CDMA systems? What are countermeasures in TDMA system, what about CDMA system? **05**
 (II) What are the advantages and disadvantages of infrared? **02**
- OR**
- Q.4** (a) Describe mobile operating system and explain how they are different than the computer based operating system. **07**
 (b) Explain routing in mobile ad-hoc network. **07**
- Q.5** (a) Explain wireless transport layer security. **07**
 (b) Write short note on : Wireless Markup Language **07**
- OR**
- Q.5** (a) Why Wireless Application Environment is needed? Give its logical structures and components details. **07**
 (b) Explain Tunneling - Detunneling and types of Encapsulation in Mobile IP. **07**
