

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- VIIth SEMESTER-EXAMINATION – MAY/JUNE- 2012****Subject code: 170702****Date: 08/06/2012****Subject Name: Mobile Computing****Time: 02:30 pm – 05:00 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) Explain the differences between 1G, 2G, 2.5G and 3G mobile communications. 7
 (b) Explain the functioning of cellular network. How the given set of frequencies are used to increase the capacity of a network. 7

- Q.2 (a) What are the different tiers in three tier architecture of mobile computing? Describe the functions of these tiers. 7
 (b) Explain the following Multiple Access Techniques used to access the channel by mobile subscriber. 7
- Frequency Division Multiple access.
 - Space Division Multiple access.

OR

- (b) Explain the following Multiple Access Techniques used to access the channel by mobile subscriber. 7
- Time Division Multiple access.
 - Code Division Multiple access.

- Q.3 (a) What is piconet? What is scatternet? Explain how they form in Bluetooth radio technology? Also give the answer of following questions. 8
1. Which ISM frequency band it is use?
 2. How many maximum channel it is support?
 3. How many maximum slave can be communicate with Master at a time?
- (b) Differentiate the WiMAX and WiFi Technologies. 6

OR

- Q.3 (a) Explain following protocol used in the Bluetooth technology 8
1. Link Manager Protocol.
 2. Logical Link Control and Adaptation Protocol.
 3. Service Discovery protocol.
 4. RFCOMM
- (b) Explain the three limitations of IPv4 that are overcome by IPv6. 6

- Q.4 (a) What are limitations of traditional IP to support the mobile technology? How does Mobile IP works? 8
 (b) What are HLR and VLR? Describe its functions in call routing and roaming. 6

OR

- Q.4 (a) Explain the Indirect and Snooping TCP. 8
 (b) What is the difference between SM-MT and SM-MO? Explain. 6

- Q.5 (a) Explain the GPRS system architecture. 8
 (b) Give six functions where CDMA is different from GSM. 6

OR

- Q.5 (a) Explain H.232 framework for voice over IP. 8
 (b) Explain Session Initiation Protocol (SIP). 6
