

GUJARAT TECHNOLOGICAL UNIVERSITY**M. E. Sem. – IInd - Examination – June/July- 2011****Subject code: 1720101****Subject Name: Wireless Networking & Mobile Computing****Date: 22/06/2011****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)** (i) Having received Care of Address, how does mobile node register with home agent? **04**
 (ii) Is the effect of attenuation more on LANs or on satellite communication? What is the extreme form of attenuation? **03**

- (b)** Explain the two different types of links offered by Bluetooth. **07**

- Q.2 (a)** Explain the route discovery and route maintenance in dynamic source routing. **07**
(b) Which numbers are needed to find a subscriber and to maintain the connection with a mobile station? Explain mobile terminated call (MTC) and mobile originated call (MOC) in GSM. **07**

OR

- (b)** Describe the protocol architecture of the transmission plane for GPRS. **07**

- Q.3 (a)** (i) What is stand by mode in Bluetooth? Describe the two different ways in which inquiry can happen. **04**
 (ii) Explain the three low power states for Bluetooth device **03**

- (b)** How and why does I-TCP isolate problems on the wireless link? List advantages and disadvantages of I-TCP. **07**

OR

- Q.3 (a)** (i) Considering duplex channels, what are alternatives for implementation in wireless networks? **04**
 (ii) How can DHCP be used for mobility and support of mobile IP? **03**

- (b)** What is encapsulation? Explain IP-in-IP encapsulation and minimal encapsulation. **07**

- Q.4 (a)** (i) Explain the following terms **04**
 a. Dwell time
 b. Fast hopping
 (ii) Write a WML and WMLScript to read a number and then sum the numbers which are not even and sum the numbers which are even. Then display the odd number sum and even number sum separated by :. (For example 1234, sum of odd numbers(1 & 3) is 4 and sum of even numbers(2 & 4) is 6 and display them as 4:6.) **03**

- (b)** (i) Explain point coordination function with polling in 802.11 standards. **04**
 (ii) List the commands those are used to setup UDP agents in simulation scripts in NS2. **03**

OR

- Q.4 (a)** (i) Explain the following terms **04**
 a. Autocorrelation
 b. Orthogonal
 (ii) Write an XHTML-MP to list company profile. (Company name, address and turnover of four quarters). Company name should be displayed in bold and font size 14. Out of four quarter result highest result should be shown in red color and lowest result in yellow color. **03**
- (b)** (i) How synchronization is done in infrastructure based and in ad hoc networks? **04**
 (ii) Explain the General Operations Director (GOD) object in NS2. **03**
- Q.5 (a)** (i) Why does wireless transmission require analog modulation? Explain minimum shift keying with data 10101110 and $f_2=2f_1$. **04**
 (ii) Explain Bearer services in GSM. **03**
- (b)** Explain the frame control field of IEEE 802.11 MAC data frame. Write the four scenarios possible for addressing associated with DS bits. **07**
- OR**
- Q.5 (a)** (i) Explain the term **04**
 a. Back off timer
 b. Net allocation vector
 (ii) Explain basic connection mode and advanced connection mode in digital enhanced cordless telecommunications system. **03**
- (b)** List the advantages of spreading the bandwidth. Explain the Direct sequence spread spectrum. **07**
