

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
M.E.- SEMESTER-I • EXAMINATION – WINTER 2013

Subject Code: 2715303

Date: 30-12-2013

Subject Name: Wireless Networks and Mobile Computing

Time: 10.30 To 13.00

Total Marks: 70

Instructions:

1. Attempt question 1, which is compulsory and answer any five from the rest questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right hand indicate the marks.

Q. No. 1 [2 Marks X 10 = 20 Marks]

- a. Define CDMA ?
- b. What is FDD ?
- c. What is the use of SDMA?
- d. Mention two access methods of IEEE 802.11 wireless local area network.
- e. Define DCF?
- f. Define extended service set?
- g. Mention two ways defined by The 802.11 MAC to coordinate use of the wireless medium.
- h. Is IEEE 802.11 and Wi Fi same/ State the purpose of WiFi?
- i. What are the three types of logical channels provided by L2CAP?
- j. What is ALOHA?

Q. No. 2

- a. Discuss deficiencies IEEE 802.11 in Multihop Adhoc Networks. [5 Marks]
- b. In the Distributed Coordination Function DCF protocol of IEEE 802.11, why does a Node wait only SIFS time units (after the last data packet reception) before sending an ACK, while waiting DIFS time units before attempting a data transmission? [5 Marks]

Q. No. 3

- a. What are the advantages and problems of forwarding mechanisms in Bluetooth networks regarding security and power saving? [5 Marks]
- b. What are the functions of various parts of the PHY layer of IEEE 802.11? [5 Marks]

Q. No. 4

- a. Explain IEEE802.11 frame structure. [5 Marks]
- b. How power saving is achieved by IEEE 802.11 standard? [5 Marks]

Q. No. 5

- a. In the IEEE 802.11 standard, explain the purpose of the SIFS, PIFS, DIFS intervals. Use a diagram to show the relationship among the intervals. [6 Marks]
- b. Explain different types frames generated in video encoding [4 Marks]

Q. No. 6

Explain timing synchronization function in Infrastructure mode of Wireless LAN. [10 Marks]

Q. No. 7

In the IEEE 802.11 standard, define and describe the two modes of operation: DCF and PCF.
What kinds of traffic (real-time or non-real-time) are best supported by each mode of operation. [10 Marks]

Q. No. 8

Explain how WLAN supports differential handling of frames in IEEE802.11e [10 Marks]
