

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. - SEMESTER – II • EXAMINATION – SUMMER • 2013

Subject code: 725305

Date: 05-06-2013

Subject Name: Mobile Communication Technologies

Time: 10.30 am – 01.00 pm

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. What are the channel assignment strategies?
- b. What is frequency reuse in mobile cellular systems?
- c. Discuss factors influencing handoffs?
- d. Comment on locating mobile unit within the cell.
- e. What are the 3G standards?
- f. Which variant of TCP for mobile networks preserves end-to-end semantics?
- g. Write short note on 3G W-CDMA?
- h. Write short note on VLR?
- i. What is location registry?
- j. Write short note on data link protocol.

Q. No. 2 [10Marks]
Discuss issues with Mobile IP in detail.

Q. No. 3 [6 Marks]
a. Discuss Handoffs in different generations.
[4 Marks]
b. Discuss networks of all the generations.

Q. No. 4 [10 Marks]
Explain GSM System architecture and network elements with neat diagram.

Q. No. 5 [6 Marks]
a. Why we cannot change TCP completely just to support mobile users? What are the consequences of it?

b. Explain radio interface hand over in GSM? [4 Marks]

Q. No. 6 [10 Marks]
Describe indirect TCP. Explain the modifications of indirect TCP as the selective repeat protocol and mobile- end transport protocol. What are the advantages and disadvantages of indirect TCP?

Q. No. 7 [5 Marks]
a. Draw a cell structure that has frequency allocation such that there is separation of atleast four cells between cells that reuse same frequency. Ensure that the total number of frequency used is minimum.
[5 Marks]
b. Explain and distinguish between fixed and dynamic channel allocation. [5 Marks]

Q. No. 8 [10 Marks]
Once the receiver's side has advertised the window size of zero, the sender is not permitted to send anymore data, which means it has no way to discover that the advertised window is no longer 0 at some time in future. How does TCP deals with this and how this particular feature can be utilized in mobile scenarios.
