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MCTA-302(B)

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M. E./M. Tech. (Third Semester)

EXAMINATION, Dec., 2011

(Grading/Non-Grading System)

MOBILE COMPUTING

[MCTA-302(B)]

Time : Three Hours

Maximum Marks : $\begin{cases} GS: 70 \\ NGS: 100 \end{cases}$

Note : Attempt any *five* questions. All questions carry equal marks.

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1. (a) What are the various features that specify the performance criteria of a cellular mobile system ? Explain them in detail.
(b) Describe frequency reuse. Why is it useful in cellular telephone system ? What is meant by frequency reuse factor ? What significance does the cochannel reuse factor have on cellular telephone system ?
2. (a) Why cell splitting is done ? What are the various techniques of cell splitting ? Explain in detail.
(b) How mobile point to point model is obtained ? List and explain various steps in detail.
3. (a) Discuss propagation in near in distance. Also derive expression for calculation of near field propagation.
(b) Explain the effects of cell-site antenna heights and how visualization of signal coverage cells is done.

4. (a) How exploring co-channel interference areas in a system is done ? Explain how :
(i) To find the co-channel interference area from a mobile receiver.
(ii) To find the co-channel interference area which affects a cell cite.
(b) Discuss designing of a directional antenna system for co-channels interference reduction.
5. (a) What do you understand by the term frequency management ? Discuss various frequency spectrum utilization techniques.
(b) Define channel assignment and explain fixed channel assignment and non-fixed channel assignment algorithms.
6. (a) Define handoffs. Why are handoffs needed ? Explain :
(i) Delaying a handoff and its advantages
(ii) Forced handoffs
(b) Define dropped call rate. Derive the expression to calculate the same.
7. (a) Describe the GSM cellular telephone system. Also explain GSM system architecture and the services offered by GSM.
(b) Explain in details multicast routing protocols.
8. Write short notes on any *two* of the following :
(i) Foliage loss
(ii) Perception of call blocking from the subscribers
(iii) Mobile assisted handoff and soft handoff
(iv) Mobile IP and wireless mobile ATM

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