

Roll No: _____

Total Printed Pages: 2

ME (Computer Sc. & Engg.) II-Semester Exam. June-2007
Mobile Computing
Subject Code: E8903

Time: 3 Hrs.

Max. Marks: 80

Min. Pass Marks: 28

Attempt any FIVE questions.
Marks of questions are indicated against each question
Assume any data if not given.

- Q 1(a) Prove that for a hexagonal geometry, the co-channel reuse ratio is given by $Q = \sqrt{3}N$, where $N=i^2+j^2$. Here i and j are defined as follows. To find the nearest co-channel neighbour for a particular cell, move i cells along any chain of hexagon's, turn 60° counter clock wise and move j cell. 6
2. (b) Explain the need and techniques of cell splitting and sectoring. 6
- (c) Describe various handoff strategies. 4
3. (a) What are benefits of reservation schemes for MAC? How are Collisions avoided during data transmission, why is the probability of collisions lower compared to classical Aloha? What are disadvantage of reservation schemes? 8
4. (a) Explain how Multiple Access with Collision Avoidance (MACA) solves the problem of hidden terminals and exposed terminals? 8
5. (a) Why is a new infrastructure needed for GPRS but not for HSCSD? Which component are new and what is their purpose? 6
6. (b) What are the function of authentication and encryption in GSM? How is system security maintained. 6
7. (c) Describe hard handover & soft handover in UNITS. 4
- Q 7 (a) Compare the power saving mechanisms in IEEE 802.11 LAN, and Hiper LAN2. What are the negative effects of the power saving mechanisms, What are the trade-off between power consumption and transmission QoS? 8
- (b) Why is the physical layer in IEEE802.11 sub divided? Draw the format of an IEEE802.11 PHY frames using FHSS and DSSS. 8
8. (a) How do IEEE802.11, HiperLAN2 and Bluetooth, respectively, solve the hidden terminal problem? 6
9. (b) If Bluetooth is a commercial success, What are remaining reasons for the use of infrared transmission for WLANS? 6
10. (c) Explain the concept of file system consistency in coda file system. 4

PTO

- Q.6(a) What is the role of a WTA server? What are the different ways to integrating W servers into the WAP architecture? 6
- (b) What advantage does a connection less session service offer compared to a simple datagram services? 6
- (c) What characteristics of a wireless LAN present unique security challenges not found in wired LANs. 1
- Q.7 (a) List and briefly define the capabilities provided by mobile IP. 4
- (b) What services are provided by wireless session protocol (WSP)? 6
- (c) Briefly describe security services provided by wireless Transport Layer security (WTLS). 6
- Q.8 Write short notes of following 6
 - (a) Smart tokens 4
 - (b) Smart cards 4
 - (c) Palm OS features 4
 - (d) V.M.L. 4