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Code No.: 9131 M

VASAVI COLLEGE OF ENGINEERING (Autonomous), HYDERABAD
M.Tech. (CBCS : CSE) I-Semester Make up Examinations, March-2017

Mobile Computing

Time: 3 hours

Max. Marks: 70

Note: Answer ALL questions in Part-A and any FIVE from Part-B

Part-A (10 × 2 = 20 Marks)

1. Determine whether the two vectors (3, -2, 4) and (-2, 3, 3) are orthogonal.
2. Why does CSMA/CD fail in wireless networks?
3. When Inter-BSC and Intra-MSC handover takes place?
4. What is the necessary condition to keep the satellite in a stable circular orbit?
5. Differentiate between Infrastructure and ad-hoc networks.
6. What are the services offered by 802.11 wireless LAN's?
7. What is the need of DHCP? Name the entities of DHCP.
8. What are the disadvantages of time-out freezing in TCP?
9. How offline transactions are supported during mobility?
10. What is the significance of Secure Electronic Transaction?

Part-B (5 × 10 = 50 Marks)

11. a) A city has an area of 1300 sqkms and is covered by a cellular system using 7 cell reuse pattern. Each cell has a radius of 4kms and city has 40 MHz spectrum with a full duplex channel bandwidth of 60 KHz. Calculate (i) the number of cells in the service area [6]
(ii) the number of channels per cell.
- b) Assume that all stations can hear all other stations. One station wants to transmits and senses the carrier idle. Why can collision still occur after the start of transmission? [4]
12. a) Name basic applications for satellite communications and describe the trends. [4]
b) Describe the Digital Audio Broadcasting (DAB) frame structure. [6]
13. a) Compare and contrast the advantages and disadvantages of Wireless LAN. [4]
b) Describe the architecture of IEEE 802.11 ad-hoc wireless LANs. [6]
14. a) Explain the packet flow if two mobile nodes communicate and both are in foreign networks. What additional routes do packets take if reverse tunneling is required? [4]
b) How and why does I-TCP isolate problems on wireless link? What are the drawbacks of this solution? [6]
15. a) Describe the recovery model for Mobile Transactions. [6]
b) List the basic steps for application development using iOS. [4]
16. a) Is a directional antenna useful for mobile phones? Why? How can the gain of an antenna be improved? [4]
b) What are the functions of authentication and encryption in GSM? Explain. [6]
17. Write short notes on any two of the following:
 - a) MAC management in IEEE 802.11 [5]
 - b) States of client in CODA [5]
 - c) Android development tools. [5]