Code No. : 21901

VASAVI COLLEGE OF ENGINEERING *(Autonomous)*, **HYDERABAD**
M.Tech. (CSE: CBCS) I-Semester Main Examinations, January-2018

Mobile Computing

Time: **3** hours
Max. Marks: **60**

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

Part-A (10 × 2 = 20 Marks)

1. What are the modulation types AM and FM?
2. What is Hidden and Exposed terminal problem in wireless networks?
3. Name the main nodes incorporated in GPRS to upgrade GSM architecture.
4. How many types of handover is possible in Cellular networks?
5. Differentiate between DSSS and FHSS used in physical layer of Wireless LAN.
6. What is the function of Radio layer in Bluetooth protocol stack?
7. What do you mean by directory service in air?
8. How data can be disseminated by broadcast?
9. List out four android development tools.
10. What is electronic payment?

Part-B (5 × 8 = 40 Marks)

11. a) What are the countermeasures in SDMA, TDMA, FDMA and CDMA systems? Compare the term interference in the space, time, frequency and code domain. [4]

    b) The bit stream of sender A = 01 and sender B = 11. Assume that the transmission technique used is CDMA and the codes of sender A and B are 110 and 101 respectively. Construct the composite signal received at receivers of A and B. [4]

12. a) Name the main elements of the GSM system architecture and describe their functions. [4]

    b) Discuss four different types of satellite orbits can be identified depending on the shape and diameter of the orbit. [4]

13. a) Explain the random back-off mechanism used by the nodes inside the contention window in IEEE 802.11 MAC with CSMA/CA. [5]

    b) Explain the functionalities of link manager protocol in Bluetooth. [3]

14. a) What is the basic purpose of Agent Registration in forwarding a packet in mobile IP? Explain message format registration request packet with suitable diagram. [4]

    b) State the requirement of WAP. Explain the function of the component of WAP architecture. [4]

15. a) List the four layered structure of Android. What is the function of iOS? [4]

    b) Discuss the recovery model for Transaction management? [4]

16. a) Given a channel with an intended capacity of 20 Mbps, the bandwidth of the channel is 3 MHz. What signal to noise ratio is required to achieve this capacity? [4]

    b) We have availability of small frequency spectrum. How do cellular systems reuse frequency optimally? [4]

17. Answer any *two* of the following:
    a) Explain in detail classical enhancements to TCP for mobility. [4]
    b) Take a sample network to describe the two possibilities for location of COA? What is tunneling in mobile IP? [4]
    c) Explain Joey Transactions in detail. [4]

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