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Code No. : 41116

VASAVI COLLEGE OF ENGINEERING (Autonomous), HYDERABAD
B.E. (CSE) IV Year I-Semester Main Examinations, December-2017

Mobile Communications

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. Throughput is not the same as data rate in wireless network. Justify your answer.
2. Find out the signal frequency of a carrier if the highest and lowest frequencies are 30Hz and 10Hz respectively.
3. Define: GPRS and UMTS.
4. Is the handoff helps in forwarding radio signals from one base station to another? Justify your answer.
5. How do you choose wireless LAN protocols taking into considerations the environment impact?
6. Justify the following:
"Bluetooth and IEEE 802.11 are complementary rather than competing technologies"
7. Compare MANET with VANET
8. How can DHCP be used for mobility and support for mobile IP?
9. What are different types of mobile transaction models?
10. Compare CODA, Little Work, Ficus and Andrew file systems.

Part-B (5 × 10 = 50 Marks)
(All bits carry equal marks)

11. a) How will MACA solve the problem of hidden and exposed, near and far terminal problems?
b) The bit sent by sender A = 0 and sender B = 1, Assuming that the multiplexing techniques used for transmission is CDMA and the codes of sender A and B are 110011 and 001010 respectively. Construct the composite signal received at receivers of A and B.
12. a) Draw the architecture of GSM and explain RSS.
b) If 8 speech channels are supported on a single radio channel, and if no guard band is assumed, What is the number of simultaneous users that can be accommodated in GSM?
13. a) Describe the process of power management and synchronization mechanism used in wireless LAN.
b) What is the advantage of 802.11a over 802.11b. Give illustrations defining the architecture of IEEE802.11?
14. a) Explain how tunneling works in general and assembly for mobile IP using IP-in-IP, minimal and generic routing encapsulation, respectively. Discuss the advantages and disadvantages of these three methods.
b) What are the basic challenges for the Routing in MANETS? Give a brief comparison of DSDV and DSR.

15. a) Discuss the working principle of slow start TCP. Explain the fast retransmit / fast recovery mode with respect to duplicate acknowledgements.
b) Describe the issues involved in mobile transactions. How Kangaroo transaction model solves these issues and to what kind of applications does this model suitable?
16. a) What is modulation? Discuss different types of modulation schemes used for wireless networks.
b) List and explain various types of handovers possible in UMTS.
17. Answer any two of the following:
 - a) For IEEE 802.11a show how the modulation technique and coding rate determine the data rate.
 - b) Explain how routing is done in AODV protocol?
 - c) Compare Windows, iOS and Android. Write code to create an activity to take input from the user contact details and display them in list view in Android.

