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## Question Paper Code : 51139

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2014.

Sixth Semester

Computer Science and Engineering

080230039 — MOBILE COMPUTING

(Regulation 2008)

Time : Three hours                                       Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1.  What is borrowing channel allocation and fixed channel allocation?

2.  How MACA avoids hidden and exposed terminal problems?

3.  Name two basic transport mechanisms used by DAB.

4.  Why are CEO systems for telecommunication currently being replaced by fibre optics?

5.  List the phases of EY-NPMA.

6.  Why does the piconet has only 7 slaves?

7.  What is COA ? What are the two types of COA.

8.  What is the function of DHCPREQUEST?

9.  Write an wml script to perform user login validation.

10. State the disadvantages of 3G mobile networks.

PART B — (5 × 16 = 80 marks)

11. (a) (i)  Explain the different types of TDMA scheme.               (10)

        (ii) Compare SDMA, TDMA, FDMA and CDMA techniques.          (6)

                                    Or

    (b) An FHSS system employs a total bandwidth of 320 MHZ. 3 bit PN sequence is used in the following order 110, 011,111,001. Four different frequencies are used to encode the data input 2 bits at a time. The input data are 01,11,11,10,00,10,01,11. Show the FHSS at each data transmission.          (16)

12. (a) With a neat diagram explain how data communication is taking place in GPRS system. (16)

Or

(b) What are the general problems of satellite signals travelling from satellite to a receiver? Explain how Routing, Localization and handover are performed in satellite communication system. (16)

13. (a) Using IEEE 802.11, 5 stations are trying to access the medium during the following timings. S2 -09.30 am, S1-after 10 ms, S4 -after 4 ms, S5- after 15ms S3 after 2ms. DIFS -15ms, Back off time for the station S1, S2, S3 S4 and S5 are 7ms, 18ms, 6ms, 15ms, 4ms respectively. Packet transfer time after accessing the medium by S1, S2, S3 S4 and S5 are 8ms, 18ms, 9ms, 17ms and 15ms respectively. Give the timing diagram for accessing the medium for accessing the medium and transferring the data by all the stations and also show the time taken to complete the transactions using DFWMAC-DCF. (16)

Or

(b) (i) Explain the architecture and security features of Bluetooth. (8)

(ii) How are fairness problems regarding channel access solved in HIPERLAN? How is the waiting time of a packet ready to transmit reflected? (8)

14. (a) A user with an IP address of 109.109.109.10 is moved to a network 199.199.199.0. Give the registration procedure with a diagram using Foreign agent care of address and co-located care of address. If that user is moved to a network 224.225.100.0, show the mobility binding table of Home agent and visitor table of Foreign agent with the home network, foreign network and contents of IP packets during tunnelling. Explain with a neat diagram, how communication is done on both sides. (16)

Or

(b) Why is routing in ad hoc networks complicated, what are the special challenges? Explain the standard distance vector algorithm and analyse why this algorithm does not suit the ad hoc network. Now, modify this algorithm and prove that your algorithm works for ad hoc network with an example. (16)

15. (a) (i) Compare and contrast I-TCP, Snooping TCP and Mobile TCP. (8)

(ii) Give the WAP architecture and explain WSP/B over WTP. (8)

Or

(b) (i) Design an architecture for mobile computing environment that supports multimedia data. (8)

(ii) Explain 4G networks and compare it with 3G, 2.5G, 2G and 1G. (8)

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