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15EC64

Sixth Semester B.E. Degree Examination, June/July 2019
Computer Communication Networks

Time: 3 hrs.

Max. Marks: 80

Note: *Answer any FIVE full questions, choosing*
ONE full question from each module.

Module-1

1   a. Compare and contrast byte – stuffing and bit stuffing. (06 Marks)
    b. With a neat diagram, explain encapsulation and decapsulatioin protocol layering. (04 Marks)
    c. With a layer diagram, explain the responsibilities of each layer in TCP/IP protocol suite. (06 Marks)

OR

2   a. Discuss the ARP operation and show how ARP sends request and reply message with an example. (08 Marks)
    b. Explain stop and wait protocol and show how adding sequence numbers can prevent duplicates with the help of flow diagram. (08 Marks)

Module-2

3   a. Explain the behaviour of CSMA protocol with a neat diagram and show the vulnerable time in CSMA. (08 Marks)
    b. A pure ALOHA network transmits 200-bit frames on a shared channel of 200kbps. What is through put if the system (all stations together) produces?
        i)   1000 frames per second?
        ii) 500 frame per second? (04 Marks)
    c. Explain reservation as a controlled access method. (04 Marks)

OR

4   a. Explain the format of standard Ethernet frame. What are the minimum and maximum frame lengths? (07 Marks)
    b. Identify if the following Ethernet MAC addresses are unicast, multicast or broadcast
        i)   47 : 20 : 1B : 2E : 08 : EE
        ii) EE : FF : 10 : 01 : 11 : 00
        iii) FF : FF : FF : FF : FF : FF (03 Marks)
    c. What are the two effects of the bridges on an Ethernet LAN? Explain with a neat diagram. (06 Marks)

Module-3

5   a. With a neat diagram, explain two types of networks defined in Bluetooth. (04 Marks)
    b. What is hidden station problem in wireless LAN's? Give solution for it. (06 Marks)
    c. Describe VLAN. How is it used in grouping of stations? (06 Marks)
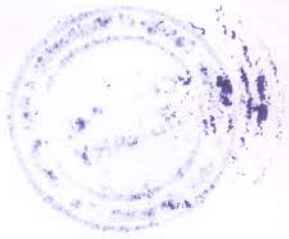
OR

6 a. Explain the occupation of the address space in classful addressing. (04 Marks)
   b. A block of addresses is granted to a small organization. We know that one of the addresses is 167·199·170·82/27. What is the first address, last address and total number of address of the block? (06 Marks)
   c. With a neat diagram, explain how can a NAT help in address translation. (06 Marks)

Module-4

7 a. With a neat diagram explain 1PV4 datagram format? (08 Marks)
   b. What is the two addresses approach in mobile host? Explain the significance of home agent and foreign agent with a diagram. (08 Marks)

OR

8 a. With relevant diagrams describe Distance Vector Routing. What is two node instability in DVR? (10 Marks)
   b. Explain operation of Border Gateway Protocol (BGP) with a diagram. (06 Marks)

Module-5

9 a. Explain connection less and connection oriented service showing the movement of packets using time line. (08 Marks)
   b. Explain why the size of the send window in Go back N must be less than 2^m? (08 Marks)

OR

10 a. Explain TCP connection establishment and connection termination using three way hand shaking. (10 Marks)
   b. Describe slow start algorithm for handling congestion in TCP. (06 Marks)

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