CBCS SCHEME

USN | | | | | | | | | | 15EC64

Sixth Semester B.E. Degree Examination, June/July 2023
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. Explain the significance of layers in TCP/IP protocol suite with neat diagram. **(08 Marks)**
b. Illustrate with an example byte stuffing and bit stuffing. **(04 Marks)**
c. Explain briefly four physical topologies of a network. **(04 Marks)**

OR

2 a. Explain ARP operation and ARP packet format with a neat diagram. **(08 Marks)**
b. Describe the operation of STOP and WAIT protocol also FSM for STOP and WAIT protocol. **(08 Marks)**

Module-2

3 a. Explain the three strategies used in CSMA/CA collision avoidance. **(06 Marks)**
b. A pure ALOHA network transmits 200 bit frames on a shared channel of 200 kbps. What is the throughput if the system produces (i) 1000 frames per sec (ii) 500 frames per sec (iii) 250 frames per sec. **(04 Marks)**
c. With a neat diagram explain Ethernet frame format. **(06 Marks)**

OR

4 a. Describe persistence methods in CSMA with flow diagram. **(06 Marks)**
b. Write short notes on 10 Base 5 Ethernet and 10 Base 2 Ethernet. **(06 Marks)**
c. Describe Polling in controlled access method. **(04 Marks)**

Module-3

5 a. Explain the following connecting devices : (i) Hub (ii) Link layer switch (iii) Router. **(06 Marks)**
b. Define two types of Bluetooth networks. **(06 Marks)**
c. Differentiate between data gram network and virtual circuit network. **(04 Marks)**

OR

6 a. Define IEEE 802.11 addressing mechanism for four cases. **(06 Marks)**
b. Give a note on virtual LAN. **(05 Marks)**
c. An organization is granted a block of address with the beginning addresses 14.24.74.0/24. The organization need to have 3 sub blocks of addresses to use in its three subnets : one sub block of 10 addresses, one sub block of 60 addresses, and one sub block of 120 addresses. Design the sub blocks. **(05 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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