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Roll No.

TCS-703

B. TECH. (CSE)

(SEVENTH SEMESTER)

MID SEMESTER

EXAMINATION, Oct., 2023

COMPUTER NETWORKS-II

Time : 1½ Hours

Maximum Marks : 50

Note : (i) Answer all the questions by choosing any *one* of the sub-questions.

(ii) Each question carries 10 marks..

1. (a) (i) Compare static and dynamic routing. (CO1)

(ii) Compare Intradomain and Inter-domain routings. (CO1)

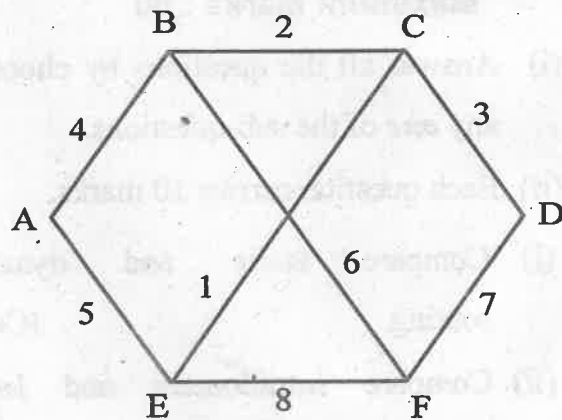
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OR

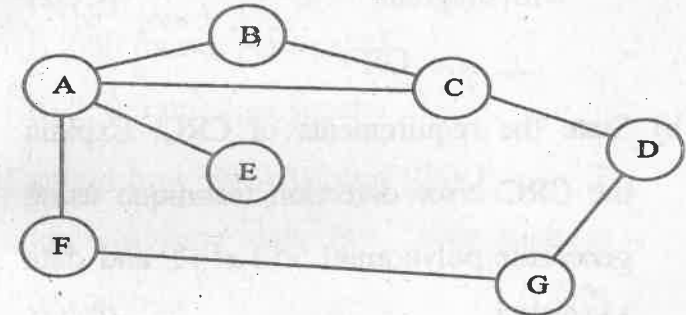
- (b) How is the count-to-infinity problem addressed in link state routing protocol ? For the following subnet, distance vector routing is used and the vectors that have just come in to router C : from B : (5, 0, 8, 12, 6, 2); from D : (16, 12, 6, 0, 9, 10); and from E : (7, 6, 3, 9, 0, 4). The measured delays to B, D and E are 6, 3 and 5 respectively. What is C's new routing table ? Give both the outgoing line to use and the expected delay. (CO)



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2. (a) Complete the final routing table at node A using RIP protocol for the following network. Assume the cost of hop count : (CO1)



Distance	Cost	Next Hop

OR

- (b) (i) What is the difference between BGP and OSPF protocols ? Discuss. (CO1)
 (ii) Discuss the Spanning Tree Broadcast method and IGMP using multicast.

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3. (a) (i) What are the different types of error detection methods ? (CO2)
- (ii) Explain CSMA/CD and CSMA/CA with diagram. (CO2)

OR

- (b) State the requirements of CRC. Explain the CRC error detection technique using generator polynomial $x^4 + x^3 + 1$ and data 11100011. (CO2)
4. (a) Compare ALOHA with slotted ALOHA. An Aloha network user 19.2 Kbps channel for sending message packets of 100-bit long size. Calculate the maximum throughput for pure ALOHA network. (CO2)

OR

- (b) A slotted ALOHA network transmits 400-bit frames on a shared channel of

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400 Kbps. What is the throughput if the system (all stations together) produces :

(CO2)

- (i) 1000 frames per second
- (ii) 500 frames per second
- (iii) 250 frames per second

5. (a) Explain how do ARP and RARP map IP addresses onto data link layer such as Ethernet. (CO2)

OR

- (b) Prove that the throughput of Network using slotted ALOHA can be given as :

$$S = Ge^{-G}$$

where G is the load and S is throughput. (CO2)

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