H 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.

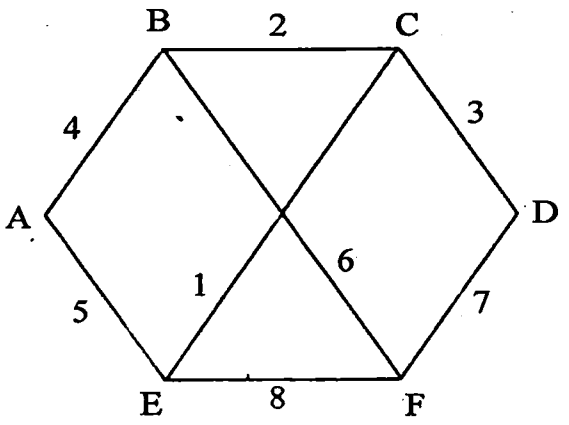
1. (a) (i) Compare static and dynamic routing. (CO1)

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

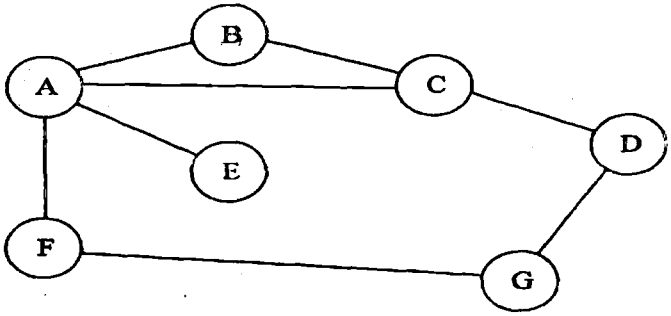
P. T. O.

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)



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.

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 throughout for pure ALOHA network. (CO2)

OR

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

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)