

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/
COMMERCIAL PRACTICE, NOVEMBER – 2023**

COMPUTER NETWORKS

[Maximum Marks : 100]

[Time : 3 hours]

PART – A
(Maximum Marks : 10)

Marks

I. Answer **all** questions in one or two sentences. Each question carries 2 marks.

1. List the four basic network topologies.
2. In one or two sentences explain virtual LAN.
3. Give the size and the name of the address used in the datalink layer.
4. Define address space.
5. In transport layer the communication is from ____ to _____. (5x2=10)

PART – B
(Maximum Marks : 30)

II. Answer any **five** of the following questions. Each question carries 6 marks.

1. Write in detail about the TCP/IP protocol suite.
2. With a brief description list the four types of delay considered in the performance of the network layer.
3. Each of the following addresses belongs to a block. Find the first and last addresses in each block. a) 14.12.72.8/24 b) 200.107.16.17/18 c) 70.110.19.17/16
4. Write in detail about the error control mechanism in the transport layer.
5. Name six SCTP services and explain each.
6. Write about three characteristics of World Wide Web (WWW) documents and give one example for each.
7. Name the four identifiers which define a web page. Explain each with an example. (5x6=30)

PART – C
(Maximum Marks : 60)
(Answer **one full** question from each unit. Each full question carries 15 marks)

UNIT – I

III. (a) Draw the frame format of standard ethernet and explain each field. (9)

- (b) Write about Unicast, Multicast and Broadcast and define the type of the following addresses. i) FF:FF:FF:FF:FF:FF: ii) 47:20:1B:2E:08:EE iii) 4A:30:10:21:10:1A (6)

OR

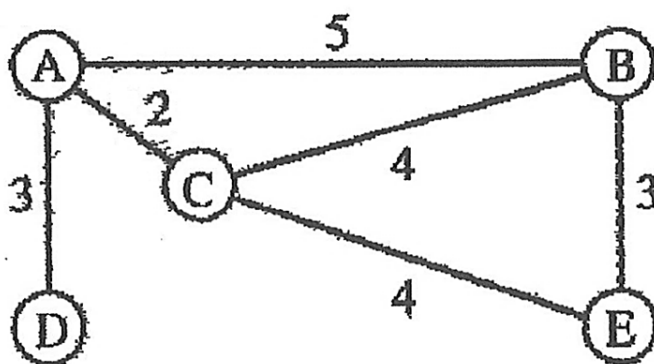
- IV. (a) With suitable diagrams explain the architecture of IEEE 802.11. (7)
 (b) Write about the connecting devices hub, switch and the routers that connects the hosts. (8)

UNIT – II

- V. (a) Illustrate Distant Vector algorithm with suitable example. (15)

OR

- VI. (a) Give the datagram format and explain each field. (10)
 (b) Create a shortest path tree for the node A. (5)



UNIT –III

- VII. (a) Explain the function of Go Back N sliding window protocol. (8)
 (b) List the services of TCP and describe each. (7)

OR

- VIII. (a) Draw the state transition diagram and explain the three way connection establishment, data transfer and termination of the connection oriented Transport Control Protocol. (9)
 (b) Compare TCP and SCTP. (6)

UNIT – IV

- IX. (a) With a neat diagram explain the File Transport Protocol (FTP). (9)
 (b) Write about the purpose and function of the Simple Mail Transfer Protocol (SMTP) with suitable diagrams. (6)

OR

- X. With appropriate diagrams and examples explain the Domain Name System (DNS) which is practiced in Internet. (15)
