

**AIM:**

To understand the concepts of computer networks

**OBJECTIVES:**

- To understand the layering concepts in computer networks
- To understand the functions of each layer
- To have knowledge in different applications that use computer networks

**UNIT I INTRODUCTION**

7

Network architecture – Layers – Physical links – Channel access on links – SDMA – TDMA – FDMA – CDMA – Hybrid multiple access techniques - Issues in the data link layer - Framing – Error correction and detection – Link-level flow control

**UNIT II DATALINK LAYER**

7

Medium access – Ethernet – Token ring – FDDI – Wireless LAN – Bridges and Switches

**UNIT III NETWORK LAYER**

11

Circuit switching – Packet switching – Virtual circuit switching – IP – ARP – RARP – DHCP – ICMP – Routing algorithms – RIP – OSPF – Subnetting – CIDR – Interdomain routing – BGP – IPv6 – Multicasting – Congestion avoidance in network layer

**UNIT IV TRANSPORT LAYER**

10

UDP – TCP – Flow control – Congestion control – Queueing discipline – Congestion avoidance – QoS – RPC

**UNIT V APPLICATIONS**

10

Email (SMTP, MIME, POP3, IMAP) – HTTP – DNS- SNMP – Telnet – FTP – TFTP

**TOTAL= 45 PERIODS****TEXT BOOKS:**

1. Larry L. Peterson, Bruce S. Davie, "Computer Networks: A Systems Approach", Fourth Edition, Morgan Kaufmann Publishers Inc., 2007.
2. James F. Kurose, Keith W. Ross, "Computer Networking, A Top-Down Approach Featuring the Internet", Third Edition, Addison Wesley, 2005.

**REFERENCES:**

1. Nader F. Mir, "Computer and Communication Networks", First Edition, Pearson Education, 2007
2. Douglas E. Comer, "Computer Networks and Internets with Internet Applications", Fourth Edition, Pearson Education, 2003.
3. Andrew S. Tanenbaum, "Computer Networks", Fourth Edition, Pearson Education, 2002.
4. William Stallings, "Data and Computer Communication", Eighth Edition, Pearson Education, 2007.