

OBJECTIVE

Gets the idea of choosing the required functionality at each layer for a given application and trace the flow of information from one node to another node in the network. Then gives the understanding of division of network functionalities in to layers, the component required to build different types of networks and identifying the solution for the functionalities in each layer.

UNIT – I APPLICATION LAYER**9+3**

Network Architecture – Layers - HTTP – DNS – E-Mail (SMTP, MIME, POP3, IMAP, Web Mail) , FTP, Telnet - SNMP.

UNIT – II TRANSPORT LAYER**11+3**

User Datagram Protocol (UDP) – Transmission Control Protocol (TCP) – Flow Control – Congestion Control – Queuing - Discipline Introduction to Quality of services (QOS).

UNIT – III NETWORK LAYER**11+3**

Circuit Switching - Packet Switching Virtual Circuit Switching – IP – ARP – DHCP – ICMP – Routing – RIP – OSPF – Subnetting – CIDR – Interdomain Routing – BGP – IPV6 Basic Features – Inter Domain Multicast – Congestion Avoidance in Network Layer.

UNIT – IV DATA LINK LAYER**7+3**

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 – Medium Access – Ethernet – Token Ring – FDDI – Wireless LAN – Bridges and Switches.

UNIT – V DATA COMMUNICATIONS**7+3**

Data Transmission – Transmission Media – Signal Encoding Techniques – Multiplexing – Spread Spectrum.

TOTAL: 45+15

TEXT BOOKS:

1. James F. Kurose, Keith W. Ross, "Computer Networking, A Top-Down Approach Featuring the Internet", Third Edition, Pearson Education, 2006.
2. Larry L. Peterson, Bruce S. Davie, "Computer Networks: A Systems Approach", Fifth Edition, Morgan Kaufmann Publishers Inc., 2011.
3. William Stallings, "Data and Computer Communications", Eighth Edition, Pearson Education, 2011.

REFERENCES:

1. Nader F. Mir, "Computer and Communication Networks", First Edition, Pearson Education, 2007.
2. Ying-Dar Lin, Ren-Hung Hwang and Fred Baker, Computer Networks: An Open Source Approach ", McGraw Hill Publisher, 2011.
3. Behrouz A. Forouzan, "Data communication and Networking", Tata McGraw-Hill, 2004.