AIML	COMPUTER NETWORKS	3	0	0	3

Course Objectives:

- To understand the concepts of data communications and to study the functions of different layers.
- To introduce IEEE standards employed in computer networking and to familiarize with different protocolsand network components.
- To help the leaner to design, calculate, and apply subnet masks and addresses to fulfill networkingrequirements.
- To analyze the features and operations of various application layer protocols such as Http, DNS, andSMTP.

UNIT I PHYSICAL LAYER AND MEDIA 9

Components – Direction of Data flow – networks – Components and Categories – types of Connections – Topologies –Protocols and Standards – ISO / OSI model – Transmission Media – Guided Media -Coaxial Cable – Fiber Optics – Unguided Media – Wireless- Switching- Digital Transmission –Analog Transmission- Line Coding – Dial up Modems

UNIT II DATA LINK LAYER 9

Error Detection and Correction – Introduction-Parity Checking– LRC – CRC – Check Sum-Hamming code – Framing - Flow Control and Error control - Stop and Wait – go back-N ARQ – selective repeat ARQ- Sliding window – HDLC - Multiple Access – Random Access –Channelization-Wired LAN - Ethernet IEEE 802.3 - IEEE 802.4 –Token Ring-FDDI – IEEE802.11.

UNIT III NETWORK LAYER 9

Logical Addressing-IPV4 Addresses - IPV6 Addresses-Inter Networking – Address Mapping – ARP, RARP,DHCP, ICMP- Delivery-Forwarding-Unicast Routing protocols- Intra Domain Routing-Inter domain Routing- Distance Vector Routing – Link State Routing – Path Routing – Multicast Routing Protocol-Subnetting – Congestion avoidance in network layer.

UNIT IV TRANSPORT LAYER 9

Duties of transport layer –Process to Process Delivery-Client Vs Server Paradigm - Multiplexing – DeMultiplexing – Sockets – User Datagram Protocol (UDP) – Transmission Control Protocol (TCP) – Flow Control – Error Control – Congestion Control – Open loop congestion control - closed loop congestion control - Quality of services (QOS)- Techniques to improve up QoS.