Introduction:Introduction to computer network, LAN, MAN, WAN, PAN, Ad
hoc
Networks,Network Architectures Client Server, Peer To Peer, Network Topologies Bus, ring, tree, star, mesh,hybrid. Communication Models OSI Model, TCP/IP Model, Design issues for layers.
Physical Layer:Transmission media
Guided media, unguided media. T ransmission Modes
Simplex, Half Duplex and Full Duplex. Network Devices Hub, Repeater, Bridge, Switch, Router, Gateways and Brouter. Spread spectrum signal, FHSS, DSSS.
Data Link Layer:Logical Link Layer
Services to Network Layer, Framing, Error Control and
FlowControl. Framing in LLC framing challenges, types of framing. Error Control in LLC error detection, error correction, Parity Bits, Hamming Codes (11/12
bits) and CRC. Flow Control
Protocols
Unrestricted Simplex, Stop and Wait, Sliding Window Pro tocol. WAN Connectivity
PPPand HDLC.
Medium Access Control: Channel Allocation
Static and Dynamic, Multiple Access Protocols
Pureand Slotted ALOHA, CSMA, WDMA, IEEE 802.3 Standards and Frame Formats, CSMA/CD.
Network Layer: Switching techni
ques, IP Protocol, IPv4 and IPv6 addressing schemes, Subnetting,
NAT, CIDR, ICMP, Routing Protocols
Distance Vector, Link State, Path Vector, Routing
inInternet RIP,OSPF, BGP, Congestion control and QoS,
Transport Layer: Services, Berkley Sockets,
Addressing, Connection establishment, Connection
release, Flow control and buffering, Multiplexing, TCP, TCP Timer management, Quality of Service (QoS), Differentiated services, TCP and UDP for Wireless.
Application Layer: Domain Name System (DNS), Hyper T
ext Transfer Protocol (HTTP),

Email:SMTP, MIME, POP3, Webmail, FTP, TELNET, Dynamic Host Control Protocol (DHCP), Simple
Network Management Protocol (SNMP).