

DATA COMMUNICATION NETWORK (EC-701)

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UNIT-I

Basic concepts- Components, Networks, Protocols and standards, Line configuration, Topologies, Transmission modes, Categories of networks

ISO-OSI-Model- OSI layered architecture, Function of each layer, **TCP/IP Protocols**, Design issues for different layers.

Physical layer- Analog/Digital modulation formats, Data rate, Baud rate, Mediums for communication, Synchronous/Asynchronous communication **8**

UNIT-II

Data Link Layer: Services provided to network layer, framing, Flow Control: stop & wait, sliding window, Error control: ARQ, go-back n, selective repeat, SLIP, PPP

MAC sub layer- contention protocols: ALOHA, CSMA, CSMA/CD contention free protocols; a bitmap protocol, binary countdown, Limited contention protocols; adaptive tree walk **8**

UNIT-III

Project IEEE 802-802.1: internetworking, 802.2: LLC, 802.3: CSMA/CD, 802.4: token Bus, 802.5: Token Ring, 802.6: DQDB, 802.11: Wireless LAN, Ethernet LAN, Switched Ethernet, Fast Ethernet

Internetworking Devices: Repeaters, Bridges, Switches, Routers, Gateways **8**

UNIT-IV

Network Layer: Services provided to Transport layer, Logical Addressing, Routing Distance vector routing, Link state routing, Dijkstra Algorithm, Hierarchical Routing, Routing for mobile hosts, Congestion control; Leaky Bucket, Token Bucket Algorithm, Congestion control in virtual circuit subnet, choke packets, IP addresses and IP protocols. **8**

UNIT-V

Transport layer: Services provided to user support layers, Connection and Connection less services, addressing, establishing releasing connection, Flow control & buffering, Multiplexing, Crash recovery TCP & UDP, Introduction to Network Security **8**

Text Books:

1. Data Communication & Networking, IV Edition, B.A.Forouzan, TMH
2. Computer Networks; Tanenbaum, PHI

Reference Book: Understanding Data Communication & Networking; William A. Shay, Vikas Publishing House Pvt. Ltd.