Unit – I

Chapter 1 : Fundamentals of Data Communication **1-1 to 1-24**

Syllabus : Process of data communication and its components : Transmitter, Receiver, Medium, Message, Protocol, Protocols, Standards, Standard organizations. Bandwidth, Data transmission rate, Baud rate and Bits per second. Modes of communication (Simplex, Half duplex, Full duplex). Analog signal and digital signal, Analog and digital transmission : Analog to digital, Digital to analog conversion.

Unit – I

Syllabus : Fundamentals of computer network, Definition and need of computer network, Applications, Network benefits-Classification of network LAN, MAN, WAN, Network architecture : Peer-to-Peer network, Client-server network.

Syllabus : Types of errors, Single bit error and burst error, Redundancy, Error Detection : Longitudinal redundancy check (LRC), Vertical redundancy check (VRC), Cyclic redundancy check (CRC), Forward error correction.

Syllabus : IEEE standards : 802.1, 802.2, 802.3, 802.4, 805.5, Wireless LANs : 802.11 Architecture, MAC sublayer, Addressing mechanism, Bluetooth architecture : Piconet, Scatternet Mobile generations : 1G, 2G, 3G, 4G and 5G.

Syllabus : OSI reference model : Layered architecture, Peer-to-Peer Processes-Interfaces between layer, Protocols, Organization of the layers, Encapsulation layers of the OSI reference model (Functions and features of each layer and protocols used) - Physical layer, Data-Link layer, Network layer, Transport layer, Session layer, Presentation layer, Application layer.

Syllabus : Layered architecture, Data link layer : Nodes and links, Services, Two categories of links, Two sublayers, Link layer addressing, Three types of addresses, Address resolution protocol (ARP), Network layer : Addresses : Address space, Classful and classless addressing, Dynamic host configuration protocol (DHCP), Network address resolution (NAT), Transport layer protocol : Transport layer services, Connectionless and connection oriented protocol.

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