CSC Academy

Subject :- certificate in computer Application (CCA)

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Introduction to Data communication :-

These messages are encoded in to the electromagnetic signals for transmission over a physical medium as shown in the following figure.

Data communication System :-

The purpose of a DCS is to transmit the message signal from a source to a destination.

Following Figure is a block diagram of a communication system. this system consists three basic parts: transmitter channel and receiver.

Effectiveness of a data communications system :-

The effectiveness of a data communications system depends on following four fundamental characteristics.

- Delivery : to the correct and intended destination.
- Accuracy : unaltered in transmission system.
- Timeliness : in a timely manner.
- Jitter :- variation in the packet arrival time.

Components of Data communication System (DCS)

1. Message
2. Sender
3. Receiver
4. Transmission Medium
5. protocal.

Representation of message in DCS

- Text Representation
- Numbers "
- Images "
- Audio "
- video "

Representation of message in text :-

Text is represented as a bit pattern a sequence of bits 0's and 1's.

Representation of message in Numbers :-

- Numbers are also Representation by bit patterns.

Repesentation of message using Audio and video :-

Modes of data communication used in DCS

communication between two devices can be one of following 3 modes:- Simplex, Half-duplex and Full duplex communication.

References:-

- Data communications and Networking by Behrouz A. Forouzan, McGraw-Hill Forouzan Networking Series.
- Http://www-ee.eng.hawaii.edu/~sasaki/undergrad/waveCalc/zeli/elements.html

Network connecting Devices:-

Network connecting devices are physical devices that are required of communication and interaction between hardware on a computer network.

Bridge:-

- Bridges are store and forward devices.
- Bridge operates in both the PHY and the DLL.

References:-

- Data communications and Networking by Behrouz A. Forouzan, Mcgraw Hill Forouzan Networking.

L2 and L3 Switches :-

when we the term switch, we must be careful because a switch can mean two different things.

we must clarify the term by adding the level at which the device operates.

Router:-

Routers are conceptually similar to bridges, except that they are found at the network layer. They just take incoming packets from one line and forward them on another just as all routers do. But the lines may

Gateway:-

Gateway is a device that connects two or more dissimilar networks.

Conclusion:-

Basics of computer Networks!—

What is a computer network?

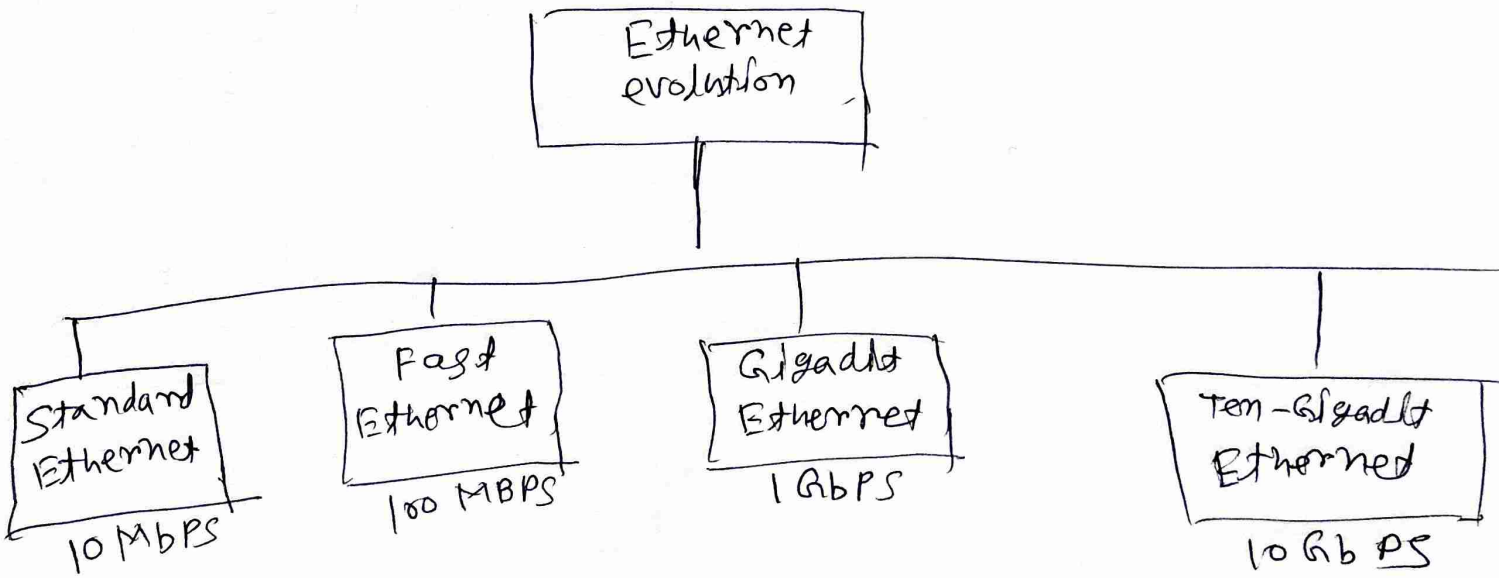
⊙ A Network is a set of devices (often referred to as nodes) connected by communication links to share the computing resources.

LAN :-

A Local area Network (LAN) is usually privately owned and links the devices in a single office building or campus as shown in figure given

Ethernet (IEEE 802.3) :-

Ethernet (IEEE 802.3) is one example of LAN which has evolved over the years as follows:-



WLAN (Wireless Ethernet IEEE802.11)

IEEE has defined the specifications for a wireless LAN, called IEEE 802.11 which covers the physical and data link layers.

WAN (Wide Area Network):-

A wide area network (WAN) provides long-distance transmission of data, image audio and video information over large geographical areas that may comprise a country a con-