

# LESSON 1

## NETWORKING CONCEPTS

### A. Fill in the blanks:

- ..... is the physical path through which the message travels from the sender to the receiver.
- ..... is a communication technology that uses low power radio waves to connect electronic devices wirelessly.
- A ..... is a computer network that covers a small area of about 10 meters.
- A ..... is an image, audio, video, graphics or text that connects one web page to another web page.
- An IP address is a ..... bit address containing a set of four numbers, which varies from ..... to 255.
- The set of rules that determines how data should be transferred over networks, compressed, and presented on the screen is called .....

### HINTS

- PAN <sup>3</sup>
- Hyperlink <sup>4</sup>
- Transmission medium <sup>1</sup>
- 32 <sup>5</sup>
- Bluetooth <sup>2</sup>
- Protocol <sup>6</sup>

### B. State True or False:

- A Crossover Ethernet cable has got both its ends identical to each other. **F**
- Infrared technology can connect only two devices at a time. **T**
- Wi-Fi stands for Wireless Filtering. **F**
- CAN covers an area smaller than MAN. **T**
- ISP provides Internet connection to the users free of cost. **F**



4. What is a Coaxial cable? Differentiate between Broadband and Baseband Coaxial cable.  
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### Coaxial Cables

A Coaxial cable is used in the transmission of video, communication signals, and audio. It is mainly used by the cable television industry to connect TVs to a cable TV service. However, this cable can also be used in networks and has high bandwidth and greater transmission capacity. A Coaxial cable consists of central copper wire surrounded by insulation and then a shield of braided wire.

**Baseband Coaxial cable:** It supports quick transmission of a single signal at a time. It is mainly used for LANs.

**Broadband Coaxial cable:** It transmits multiple signals at the same time and is used for longer distances.

5. Differentiate between the Bluetooth and Infrared wireless technology

6. Differentiate between Bluetooth technology and Infrared wireless technology.

Ans:	BLUETOOTH	INFRARED
1.	Intended for data and voice communication.	Intended for data communication.
2.	Uses Personal Area Network to connect multiple devices.	Uses Personal Area Network to establish communication between two devices.
3.	It does not require line-of-sight for transmission.	It requires line-of-sight for transmission.
4.	Can penetrate solid objects.	Cannot penetrate solid objects.
5.	Uses low power radio waves to connect electronic devices wirelessly.	Uses wireless technology in devices or systems that convey data through infrared (IR) radiation.
6.	Range varies from 10 meters to 240 meters.	Spans very short distances (Range upto 5 meters)

6. What is the Utility of Domain Name? Explain with the help of example. Page No : 14

### DOMAIN NAMING SYSTEM

Domain Name is a unique name given to each website or resource connected to the Internet. Domain names are easier to remember than IP addresses since name has strong correlation with the website. For example, the domain name for Google search engine, is google.co.in and for Wikipedia, it is wikipedia.org. The Domain Name System (DNS) is the system in which domain names are translated into internet protocol (IP) addresses. Since the Internet



7. What is the role of a Gateway in computer Networks? Page No : 12

### **GATEWAY**

A Gateway is a network point that acts as an entrance to another network using different protocols thereby giving us freedom and convenience to enjoy online activities. It allows us to carry out various online activities, such as sending e-mail, browsing through web pages, buying things online, and more. It is a shared connection between a local area network and a

8. Write Short Note on each of the following

i. Wi-Fi

### **Wi-Fi**

**Wi-Fi** stands for Wireless Fidelity. It creates a Wireless Local Area Network that uses radio waves to send the information. A secure, reliable, and fast wireless connection is established between the electronic devices and the Internet by using this technology. The devices require a wireless adapter connected to them to capture the Wi-Fi signals.

ii. Modem

### **MODEM**

A modem enables you to connect your computer to the available Internet connection over the existing telephone lines. It converts the digital signals of a computer into analog signals to enable their transmission via phone lines. At the destination, the receiving modem further converts the analog signal into digital signals so that the data can be understood at the receiving end. Modems are available in two categories: **Internal modem and External modem.**

iii. Cluster Area network

### **CLUSTER AREA NETWORK (CAN)**

CAN, also known as Campus Area Network, is a network comprising a series of small LANs over a small geographical area, such as a college campus. This network covers an area smaller than MAN.

9. Write two points of difference between each of the following

i. Hub and switch (write any two in your Copy)

**Difference between Hub and Switch:**

S.NO	HUB	SWITCH
1.	Hub is operated on <b>Physical layer.</b>	While switch is operated on <b>Data link layer.</b>
2.	Hub is a broadcast type transmission.	While switch is a Unicast, multicast and broadcast type transmission.
3.	Hub have maximum 4 ports.	While switch can have 24 to 28 ports.
4.	In hub, there is only one collision domain.	While in switch, different ports have own collision domain.
5.	Hub is a half duplex transmission mode.	While switch is a full duplex transmission mode.
6.	In hub, Packet filtering is not provided.	While in switch, Packet filtering is provided.
7.	Hub cannot be used as a repeater.	While switch can be used as a repeater.
8.	Hub is not an intelligent device hence it is comparatively inexpensive.	While switch is an intelligent device so it is expensive.
9.	Hub is simply old type of device and is not generally used.	While switch is very sophisticated device and widely used.
10.	Hacking of systems attached to hub is complex.	Hacking of systems attached to switch is little easy.

## ii. Router and Repeater

### **Repeater:-**

The repeater is used to link the LAN segments.

A repeater forwards any packet that has no sporting ability.

There are analog devices that use signals on the wires to whom they are attached.

### **Router:-**

Routers are machines that link to two or more networks. This functions on a network layer.

They are made up of a mixture of hardware and software.

The network address helps routers to determine the best route to a computer or a device.