CLASS NOTES-ANSWERS

Assess Yourself

1) Tick (√) the correct option.

a) Which of the following is a group of devices that are linked together to share information and data?

   i) Network ✓

   ii) Data

   iii) Information

   iv) Communication channels

b) What does LAN stand for?

   i) Little area network

   ii) Large Area network

   iii) Local Area Network ✓

   iv) Latest area network

c) Which medium helps carry information from one place to another?

   i) Hub

   ii) Switch

   iii) Communication channel ✓

   iv) None of these

d) Which protocol can be applied when you want to transfer files between different computers?

   i) TCP/IP

   ii) HTTP

   iii) SLIP

   iv) FTP ✓

e) Which of the following is used to identify the ground positioning of an object?

   i) GSP

   ii) GPS ✓

   iii) PSG

   iv) None of these

2) Fill in the blanks using the words from the help box.

> LAN, Bus Topology, Modem, Protocol, network

a. <u>Modem</u> is used to transmit data over a network.

b. In <u>Bus Topology</u>, all the nodes are connected to a single common path.

c. <u>Protocol</u> is a set of rules that governs the communication between the computers on a network.

d. A <u>network</u> is defined as a group of devices that are linked together to share information, data and resources.

e. In <u>LAN</u>, computers are connected in the same building.

3) Answer in one or two words.

a. Name the device that joins a computer to a network and allows it to communicate with other computers on the network.

Answer: NIC

b. Name the networking device that allows us to connect multiple computers to a single network, but has no decision-making capability.

Answer: Hub

c. Name the wireless technology that creates a small wireless network.

Answer: Bluetooth

d. Name the satellite-based navigation system used to identify the ground positioning of an object.

Answer: GPS

4) Think and answer.

1) What is a network?

Answer: A network is defined as a group of devices that are linked

together to share information, data and resources.

2) What is Gateway?

Answer: A gateway is a network device that allows data to flow between two different networks which may use different protocols.

3) What are the different components of a computer network?

Answer: The components required to build a network are:

- **Sender**: A sender is a computer that wants to send information to other computers connected to the network.

- **Receiver**: A receiver is a computer that is expecting the data from another computer on the network.

- **Transmission Medium:** The transmission medium, usually a wire or a cable, is what enables you to transfer data from one computer to another. Wireless communication between networked computers and peripherals is also possible.

- **Message:** A message is the information or data which needs to be transferred from one computer to another.

- **Protocol:** A protocol is a set of standard rules used for communication.

4) Why do we need a computer network?

Answer: Network serves the following important purposes:

- It allows information or files to be shared with other computers in the network.

- It allows computers in the network to share hardware like printer, scanner, fax machine, hard disks, etc.

- It allows sharing of application software over the network.

- It allows rapid communication such as e-mail, messaging, etc.

- It allows us to store information on one centralised location.

- It is a cost-effective method.

5) Define topology. Explain any two types of topologies.

Answer: Topology or structure is the layout of the connection formed between computers. The efficiency and reliability of a network is determined by its structure. That is, Topology refers to the geometric arrangement of computers or nodes in a network.

Bus Topology: In this topology, all the nodes are connected to a single common path. It is simple and easy to maintain.

Star Topology: In this topology, central node acts as a hub to which all the other nodes are connected. As compared to the bus topology, star topology requires more devices and cables.

6) What do you mean by protocol? Explain FTP and HTTPS.

Answer: Protocol is a set of rules that governs the communication between the computers on a network. Certain network protocols and standards are to be followed in order to ensure that your computer can communicate with another computer over a network.

FTP stands for File Transfer Protocol. It is a part of the TCP/IP protocol suite and enables files to be transferred between computers.

HTTPS stands for Hypertext Transfer Protocol Secure. It is an extension of Hypertext Transfer Protocol used for secure communication over a network. It makes a secure connection by

establishing an encrypting link between the browser and server, hence maintaining data integrity by encrypting the data.

5) Differentiate between the following.

a) SMTP, POP3

Answer:

SMTP	POP3
i) SMTP stands for Simple Mail Transfer Protocol	i) POP3 stands for Post Office Protocol 3.
ii) It is the most popular protocol for transferring electronic mail via the Internet	ii) It is the recent version of Internet protocol for receiving e-mails. It allows you to download email messages on your local computer and read them even if you are offline.

b) LAN, MAN

Answer:

LAN	MAN
i) LAN stands for Local Area Network.	a. MAN stands for Metropolitan Area Network
ii) It is a digital communication system that interconnects a	b. It consists of two or more local area networks or

larger number of computers and other peripheral devices within a radius of less than 1 km.	campus area networks together that usually spans several buildings in the same city or town, covering an area ranging from 10km to 100 km.

c) Client-server network, Peer-to-peer network

Answer:

| Client-server network	Peer-to-peer network
This is the most efficient network architecture that consists of two parts: client system and server system	An alternative to the client-server approach is the peer-to-peer approach. There are no dedicated servers.
One computer is designated as the server and all the other computers connected on the network are called the clients.	All the computers are equal and can share their resources to be used by others and are therefore known as peers.
The clients can request services from the server but, they do not share any of their resources.	This network is more cost effective, requires low maintenance and works well in a small environment.

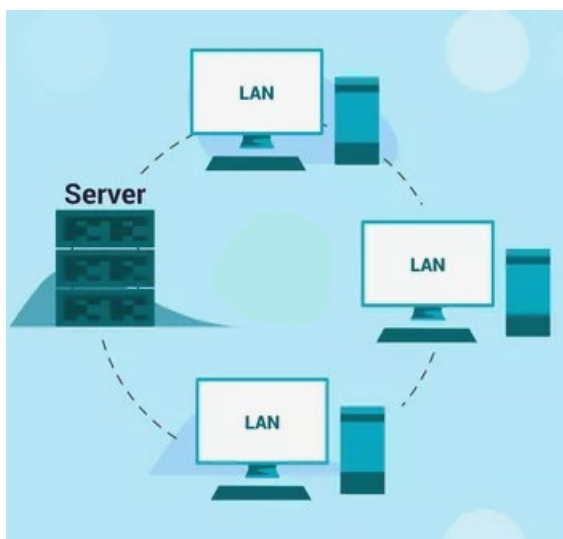**6) Identify the type of networks and write their names.**

a)

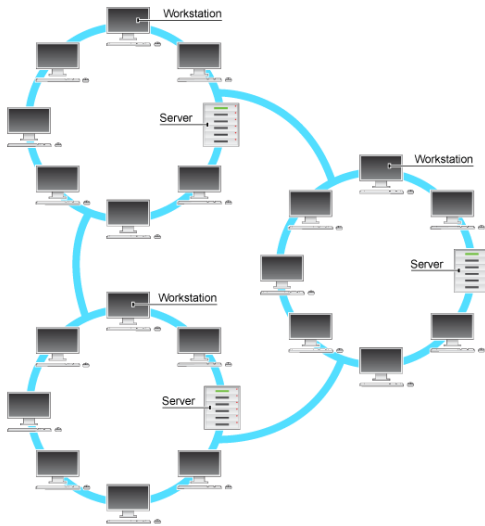

Answer: Campus Area Network

b)
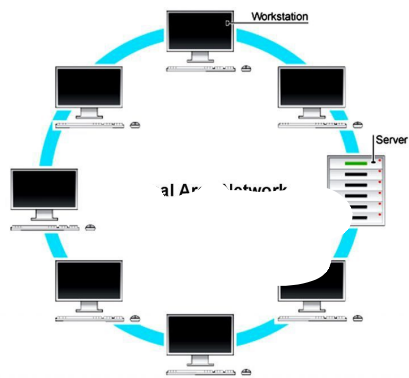
Answer: Local Area Network

c)

Answer: Wide Area Network

d)

Answer: Metropolitan Area Network

7) Competency based/Application based questions:

a) Aarav wants to set up a network for his organization. He wants to use a topology in which all nodes are connected in a circular path. Which topology should he choose?

Answer: Aarav can use Ring Topology.

b) Chirag wants to set up a server which manages all the network traffic. What type of server does he want to set up?

Answer: Chirag wants to setup a network server.

{CODING ZONE}

Answer the following questions:

1) Convert the following plain text into cipher text using Caesar Cipher technique.

a) I love coding - L ORYH FRGLQJ

b) Computers fascinate me - <u>FRPSXWHUV IDVFLQDWH P</u>

2) The following cipher text has been created using Caesar Cipher technique. Convert it back into plain text.

   a) vhh brx rq prqgdb - <u>SEE YOU ON MONDAY</u>

   b) wkdqn brx - <u>THANK YOU</u>

3) Convert the following plain text into cypher text using the Rail Fence cipher according to the encryption key which is given.

a) Attack from the west, encryption key = 3

Answer:

a			c			r			t			w		
	t	a	k	f		o			h			e	t
	t				m		e			s	

attack from the west   ⟶   <u>acrtwtakfo h ett mes</u>

b) Be honest, encryption key = 2

Answer:

b			o	e	t
	e	h	n	s	

be honest   ⟶   <u>b otehnse</u>