Dear Students!!

In this e-book of 9th class, study material of computer science is being sent to you as per new syllabus (2023-24). You can easily prepare your test / papers by reading these notes and watching the video lectures given below. Following are the links of the video lectures in blue colour. Watch these video lectures by clicking on the relevant link of chapter to have better understanding of various concepts.

9th Class - Computer Science Syllabus & Video Lecture Links (Pbi)

Video Lecture's Playlist Link of Computer Science for 9th Class:

https://youtube.com/playlist?list=PLja3EaJFAjmYwpD9b_D9520GLE9BwEHsZ

Chapter-wise Links of Video Lectures:

Chapter -1 Networking	https://youtu.be/U1LCLGC0Kc8
Chapter -2 Internet Applications	https://youtu.be/4zjjeo4HCRs
Chapter -3,4,5,6 Video Lectures for MS Excel	
Part-1	https://youtu.be/AvSCtIOzSx0
Part-2	https://youtu.be/eaaZ65WrF_U
Video Lectures for Excel Practical:	
Part-1	https://youtu.be/8ioY-a6i5MY
Part-2	https://youtu.be/7gAz1jELgmo
Chapter -7 E-Governance	https://youtu.be/U4Zah7au2Es
Chapter -8 Intro to Database	https://youtu.be/sWCvejbp0hI

PLEASE DO NOT FORGET TO LIKE, SHARE AND SUBSCRIBE OUR YOUTUBE CHANNEL

YouTube **http://youtube.com/c/computersciencepunjab**

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Please use the following link to download the study material/e-books/e-contents for 6th to 12th classes:

http://cspunjab.nirmancampus.co.in/study.php

Chapter 1st – Networking

Que:1 Fill in the blanks

1. _____ is a group of two or more computers that are linked in order to share resources such as printers, files, and other resource.

   a. Network b. Internet c. Wireless d. Topology

2. Which of the following is the smallest type of network?

   a. MAN b. WAN c. LAN d. None of these

3. _____ is a device that allow you to connect multiple computers to a single network.

   a. Hub b. Bus c. Ring d. Star

4. In _____ network topology, a single backbone cable is shared by all the devices.

   a. Bus b. Tree c. Mesh d. Star

5. _____ prepares information and sends it.

   a. Protocol b. Receiver c. Sender d. Hub

Que:2 Write True/False

1. We cannot Share hardware or Software among network devices. — False
2. LAN covers a large geographic area. — False
3. In full duplex, information can be transmitted in both directions. — True
4. Protocols are set of rules by which data transmission takes place between nodes. — True

Que:3 Write the Full Forms:

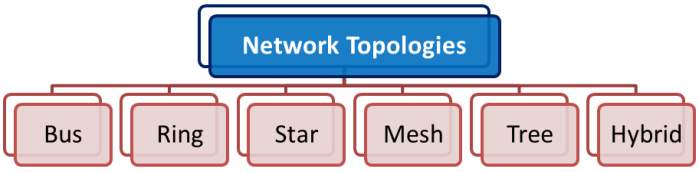
1. LAN : Local Area Network
2. MAN : Metropolitan Area Network
3. WAN : Wide Area Network
4. PAN : Personal Area Network
5. NIC : Network Interface Card

Que:4 Short answer type questions

Q:1 Write the names any four Network Topologies.

Ans: Name of Network Topologies are given below:

a. Bus Topology
b. Star Topology
c. Ring Topology
d. Mesh Topology
e. Tree Topology
f. Hybrid Topology



Q:2 Define Network Interface Card (NIC).

Ans: A Network Interface Card (NIC) is a Printed Circuit Board (PCB). It is installed on the motherboard inside a system-unit so that a computer can be connected to a network. It should be fitted in each client and server computer. There are two types of network cards:

a. Ethernet Card
b. Wireless Card

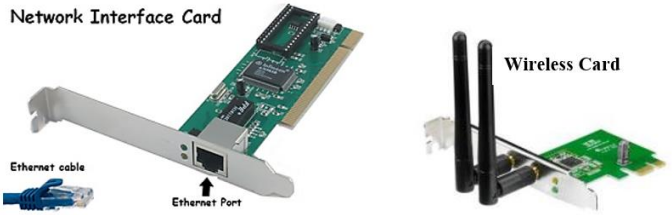
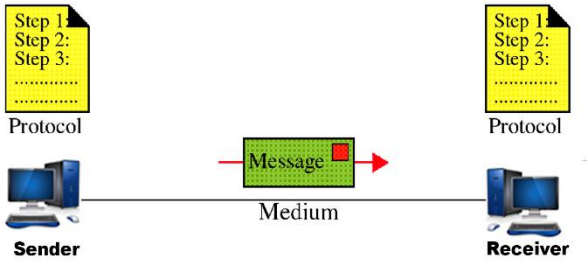


Fig: Network Interface Cards

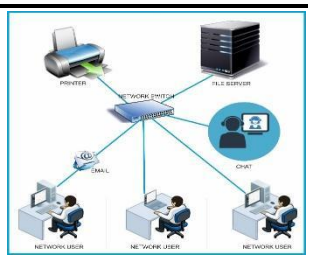
Q:3 Write the names of components of Data Communication.

Ans: Name of components of data communication are given below:

a. Sender
b. Medium
c. Receiver
d. Protocol



Q:4 Write a short note on HUB.



Ans: A Hub is a hardware device. This device is used in computer networks. It is used in Star Topology to connect multiple computers in a network. The hub typically receives data at one port, then it duplicates this data and makes it available on all other ports. In this way, the hub provides data sharing facility between computers connected in a network.

Q:5 What are the two types of Ring Topologies?

Ans: In Ring topology, all computers are connected like a ring. Each node is connected with its two neighboring nodes. This topology is of two types:

1. **Single Ring: In this topology, computers are connected with each other using a single cable and flow of data is unidirectional.**
2. **Dual Ring: In this topology, computers are connected with each other using a dual ring cable and flow of data is bidirectional.**

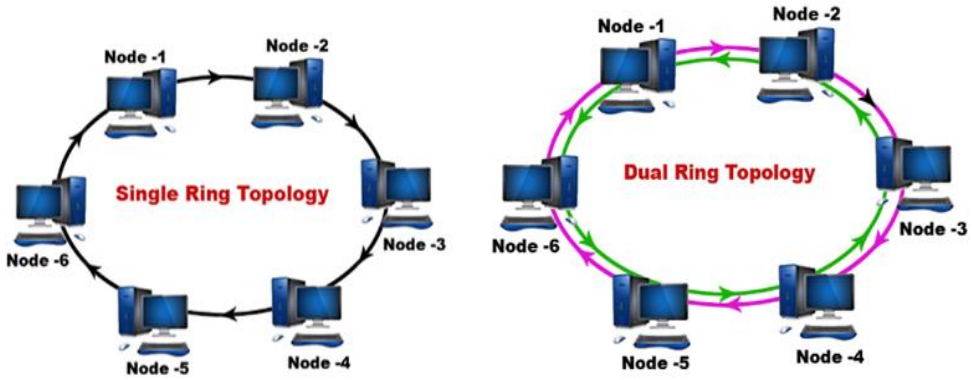


Fig: Ring Topology

Que:5 Long Answer Type questions

Q:1 What is Network? Explain its advantages and disadvantages.

Ans: A network is an interconnection of two or more computers. These computers are connected with each other using some communication channels so that files can be exchanged, resources can be shared and communication can take place.

Advantages of Networks:

1. **Data and information can be shared easily with the help of networks.**
2. **Hardware and software can be shared using networks.**
3. **Very fast communication is possible using networks.**
4. **Files can be used and shared faster in the network.**
5. **Backup of any computer in a network can be taken easily.**

Disadvantages of Networks:

1. **If a network fails, all the central services break-down.**
2. **It is difficult to manage network.**
3. **It is very costly to make a network.**

Q:2 Explain the various components of computer network.

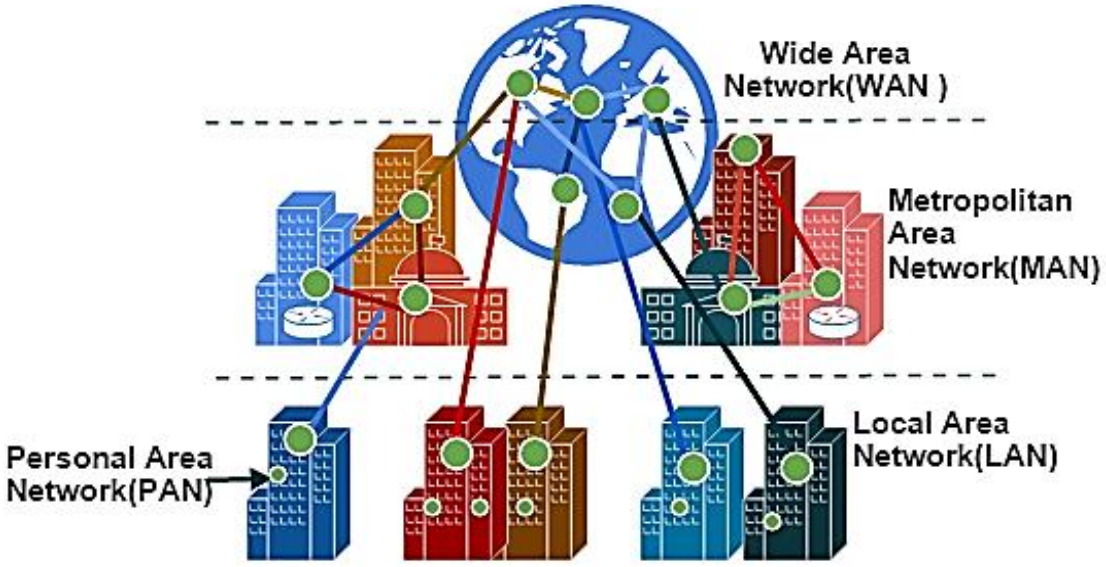
Ans: A computer network has many components. Each component is necessary for the smooth functioning of the network. The main components of a computer network are described as follows:

- **Computers: The main function of a network is to connect computers. There are two types of computers used in a network: Client Computers and Server Computers.**
- **Network Interface Card (NIC): This is a computer circuit board / card. It is used to connect a computer to a network.**
- **Hub / Switch: A hub is a hardware device which is used to build a network. It is used in Star Topology to interconnect computers in a network.**
- **Router: A router is a hardware device. It is used in the field of network. This device receives data in a network, then inspect it and transmits the data to the same network or to some other concerned network.**

Q:3 Write about different types of networks.

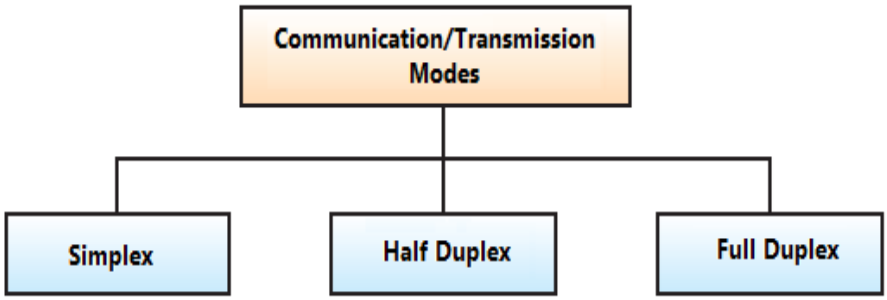
Ans: There are many types of networks. Depending on the size of the networks, they can be divided into the following four types:

1. **PAN: PAN stands for Personal Area Network. This network exists around one person. Example: Connection between two mobiles etc. It has a radius of about 10 meters.**
2. **LAN: LAN stands for Local Area Network. Such networks are created in the offices or computer labs or at homes. It is usually designed to share network files or hardware devices. It is limited in size to a radius of 1 mile.**
3. **MAN: MAN stands for the Metropolitan Area Network. This network is spread over a large area like a city. For example: cable TV. Network. A MAN typically covers an area of between 5 to 50 kms.**
4. **WAN: WAN stands for Wide Area Network. This network can be spread over a large geographical area such as a country, continent or the whole world. Internet is the best example of a WAN network.**



Q:4 Explain the various modes of data transmission?

Ans: Data transmission means the flow of data or information between the sender and the receiver. Data transfer between sender and receiver can be done in the following three ways:



- **Simplex Mode: In this mode, the communication is unidirectional. Only one of the devices can send a signal and the other can only receive a signal. For example: Communication between keyboard and computer.**
- **Half-Duplex Mode: In this mode, the flow of communication can be in both directions, but only one device is capable of communicating at a time. For example: In a walkie-talkie, sender speaks on one side and the receiver on the other side listens and then after a pause, another speaks and the first person listens.**
- **Full Duplex Mode: Even in full duplex mode, the flow of communication is in both directions, but communication is possible in both directions at the same time. This is the fastest mode of communication between devices. For example: Communication between two people using mobile phones.**