ODM EDUCATIONAL GROUP
Changing your Tomorrow

NETWORKING CONCEPT

Class VIII , Ch-1

PERIOD-2

Website: www.odmegroup.org
Email: info@odmps.org
Toll Free: **1800 120 2316**
Sishu Vihar, Infocity Road, Patia, Bhubaneswar- 751024

ODM EDUCATIONAL GROUP
Changing your Tomorrow

TYPES OF NETWORK

There are 4 types of network used world wide

- PAN (PERSONAL AREA NETWORK)
- LAN (LOCAL AREA NETWORK)
- MAN (METRO AREA NETWORK)
- WAN (WIDE AREA NETWORK)

Website: www.odmegroup.org
Email: info@odmps.org
Toll Free: **1800 120 2316**
Sishu Vihar, Infocity Road, Patia, Bhubaneswar- 751024

PAN

- Pan is computer network that is mainly created for an individual person. It is used for communication among devices, such as laptops, mobiles, phones, smart tv etc.
- PAN can either be wired or wireless.it covers a range less than 10 meters(30 feet).

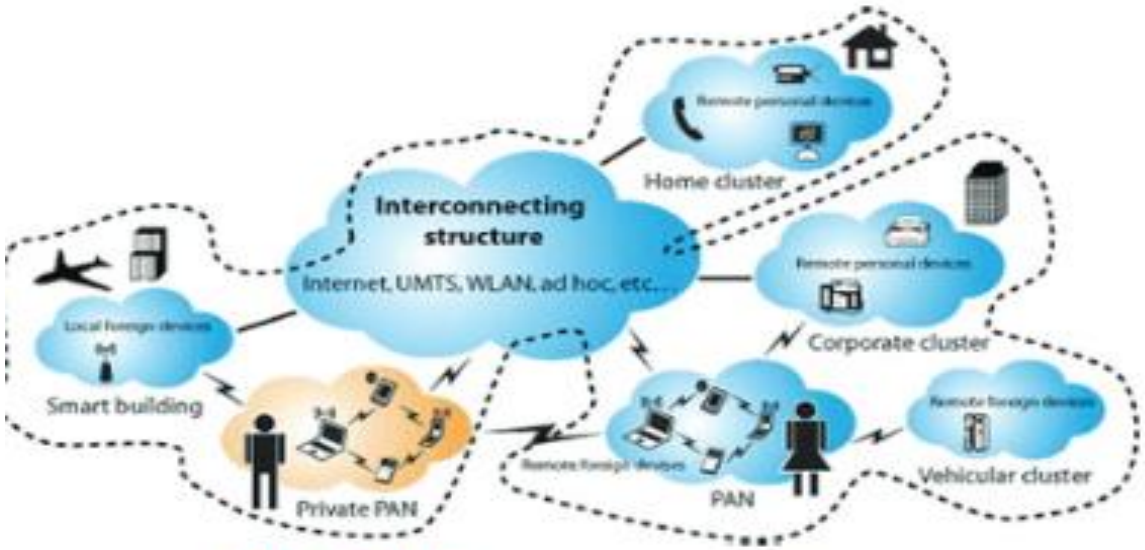


Figure 1.2: Personal Area Network

Website: www.odmegroup.org
Email: info@odmps.org
Toll Free: **1800 120 2316**
Sishu Vihar, Infocity Road, Patia, Bhubaneswar- 751024

LAN

- In LAN two or more computers and peripheral devices are connected within a small area such as room, offices, building, or a campus.

Figure 1.3: Local Area Network

Website: www.odmegroup.org
Email: info@odmps.org
Toll Free: **1800 120 2316**
Sishu Vihar, Infocity Road, Patia, Bhubaneswar- 751024

MAN

- MAN is a large network than LAN. It is spread across a city. Since it covers a city, it is called metropolitan. Most common example is **city cable**.

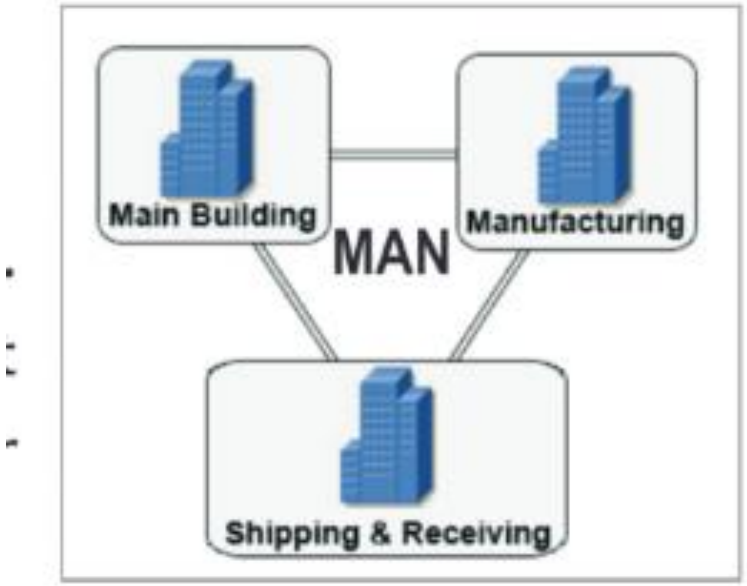


Figure 1.4: Metropolitan Area Network

Website: www.odmegroup.org
Email: info@odmps.org
Toll Free: **1800 120 2316**
Sishu Vihar, Infocity Road, Patia, Bhubaneswar- 751024

WAN

- it connect two or more computers located at distance places like city or country.
- For example Telecommunication system of a country, Banking system, MNC banking system etc

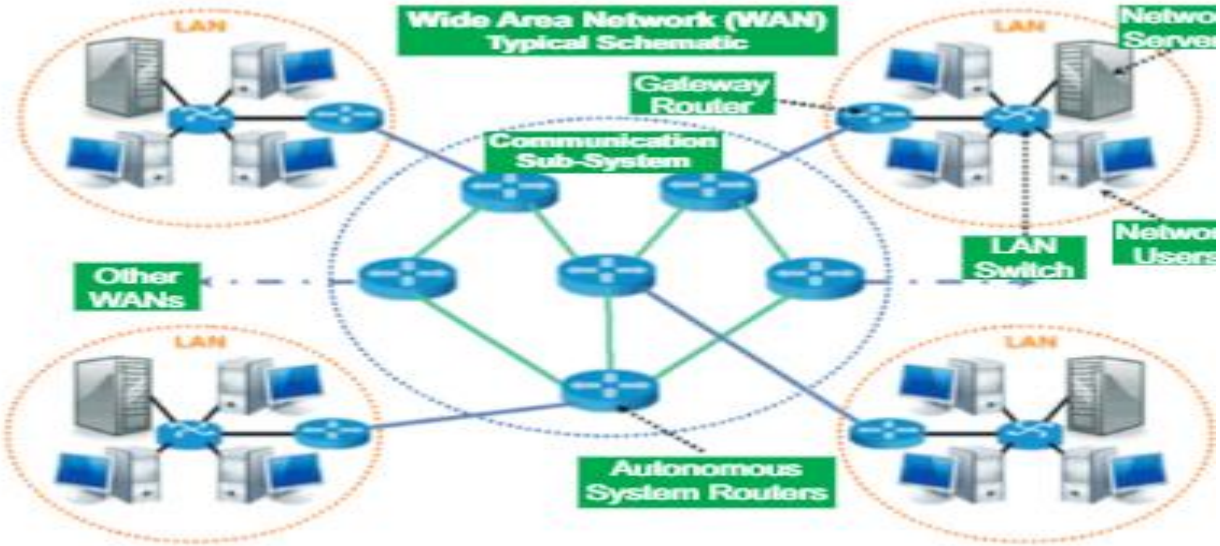


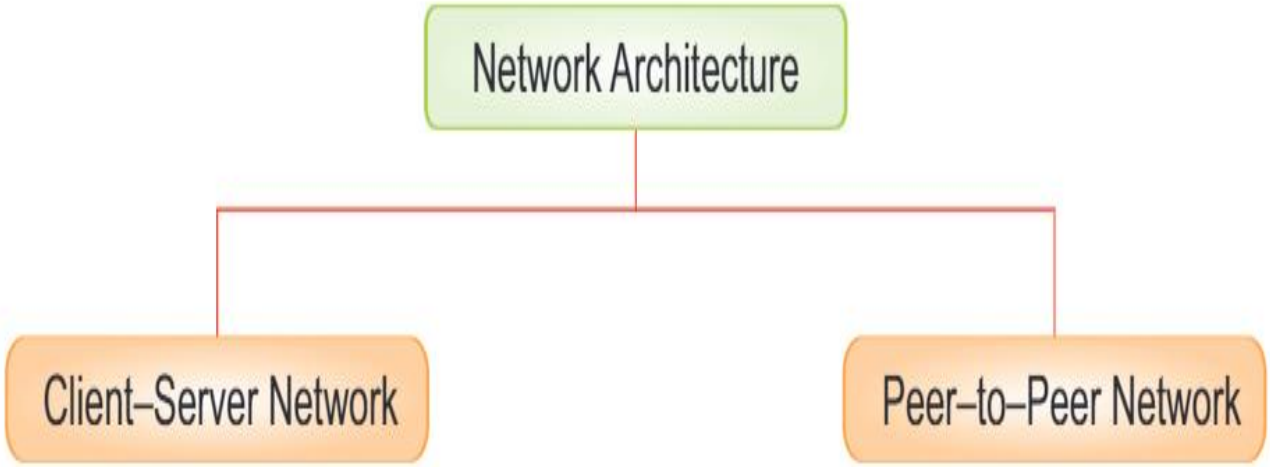
Figure 1.5: Wide Area Network

Website: www.odmegroup.org
Email: info@odmps.org
Toll Free: **1800 120 2316**
Sishu Vihar, Infocity Road, Patia, Bhubaneswar- 751024

ODM EDUCATIONAL GROUP
Changing your Tomorrow

NETWORKING ARCHITECTURE

Network architecture is an overall design of a computer network that describes how a computer network is configured and what strategies are being used in it. Network Architecture are mainly of following two types:



Website: www.odmegroup.org
Email: info@odmps.org
Toll Free: **1800 120 2316**
Sishu Vihar, Infocity Road, Patia, Bhubaneswar- 751024

CLIENT–SERVER NETWORK

It is a network, where several computers called **clients** or **workstations** are connected to the main computer called the **server.**

A **server** is a computer that provides services to clients and controls access to hardware, software, and other resources. **Clients** are the computers that request services, like data retrieval, storage, etc., from the server.

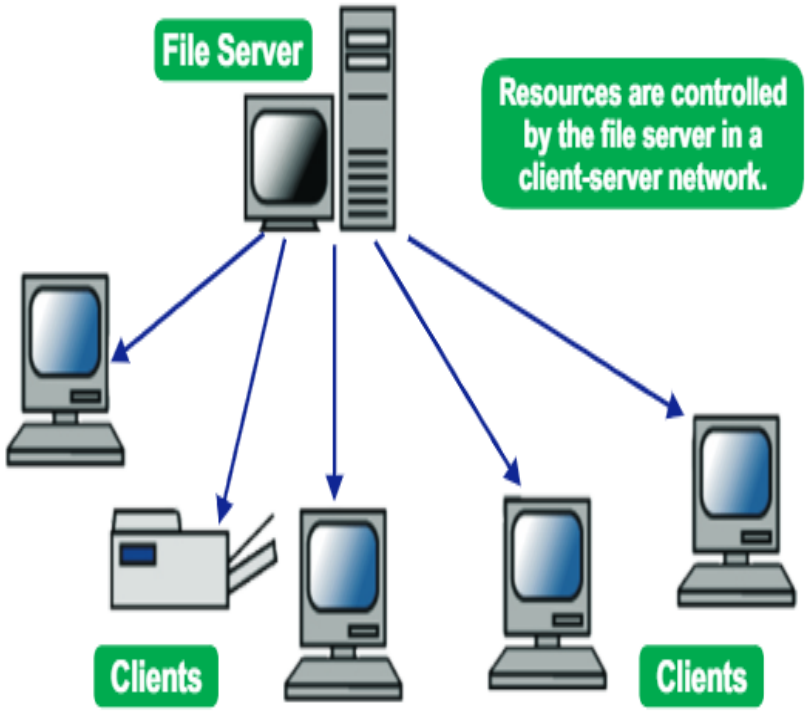


Figure 1.6: Client-Server Architecture

Website: www.odmegroup.org
Email: info@odmps.org
Toll Free: **1800 120 2316**
Sishu Vihar, Infocity Road, Patia, Bhubaneswar- 751024

Figure 1.6: Client-Server Architecture

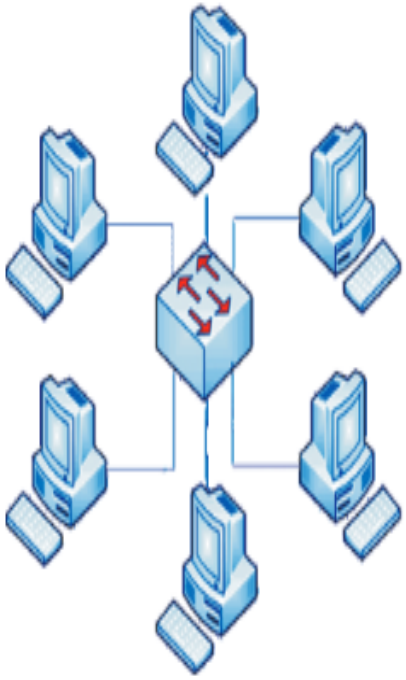


Figure 1.7: Peer-to-Peer Network

PEER-TO-PEER NETWORK

Peer-to-Peer is a network where a few computers having equal capacity and capabilities are connected together to use the resources available on the network. In peer-to-peer network, there is no central server, instead each computer can act as a server as well as a client.

NETWORK TOPOLOGY

NETWORK TOPOLOGIES

Network topology refers to the layout in which various components of a network, like nodes, links, peripherals, etc. are connected and communicate with each other. Topology can either be physical or logical. Physical topology is the physical layout of nodes, workstations, and cables in the network, whereas logical topology is the way how information flows between different components.

Network topologies are categorised into the following basic types:

Website: www.odmegroup.org
Email: info@odmps.org
Toll Free: **1800 120 2316**
Sishu Vihar, Infocity Road, Patia, Bhubaneswar- 751024

POINT-TO-POINT

Point-to-point topology is the simplest form of network structure in which two nodes are directly connected with each other. This type of network is more suitable for small areas where computers are in close proximity. This technology provides a faster and reliable connection.

Figure 1.8: Point to Point Topology

Website: www.odmegroup.org
Email: info@odmps.org
Toll Free: **1800 120 2316**
Sishu Vihar, Infocity Road, Patia, Bhubaneswar- 751024

BUS TOPOLOGY

- This topology uses a single communication line or main cable to which all the nodes are connected.
- This cable act as a backbone for the for the network.
- One disadvantage is if the main cable falls, the entire networks became unstable.

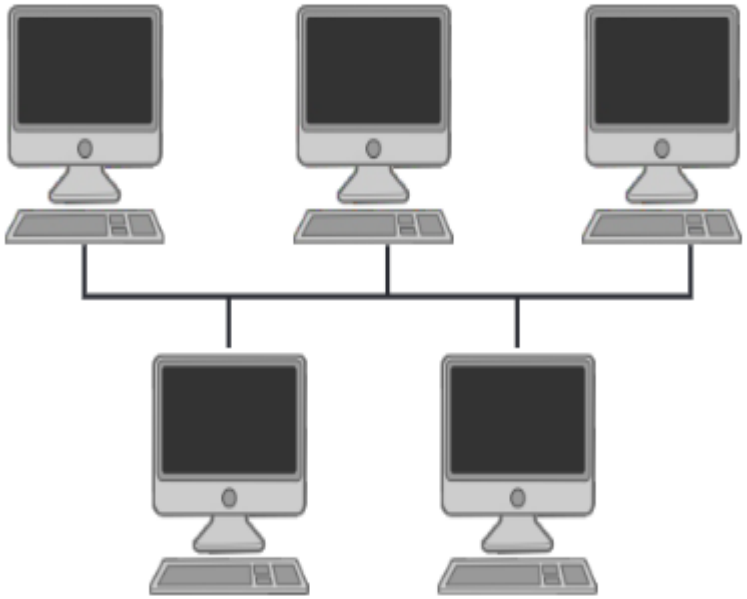


Figure 1.9: Bus Topology

Website: www.odmegroup.org
Email: info@odmps.org
Toll Free: 1800 120 2316
Sishu Vihar, Infocity Road, Patia, Bhubaneswar- 751024

STAR TOPOLOGY

- In star topology each computer is connected to a central computer using point to point connection.
- The central computer act as a Hub.
- If any one computer in the network falls, the other connections remain intact.
- But if central Hub falls then the entire network goes down.

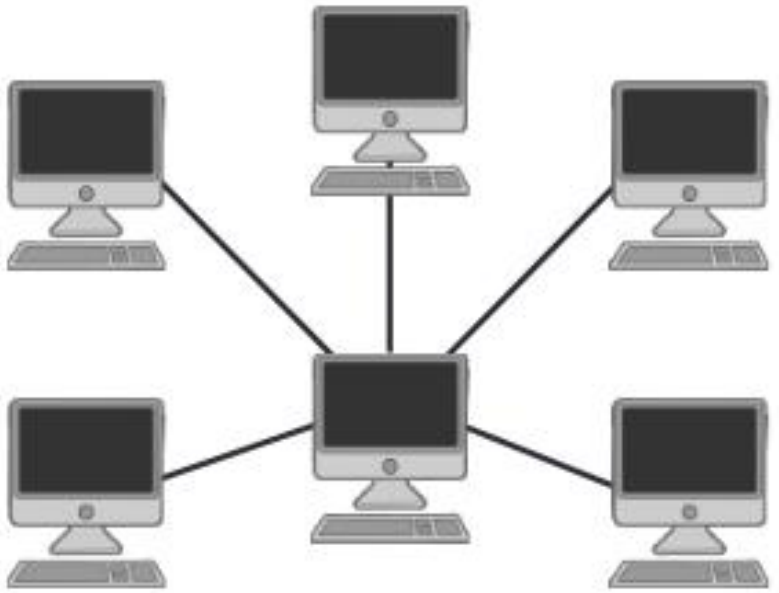


Figure 1.10: Star Topology

RING TOPOLOGY

- All nodes in the network are connected in a circular manner.
- The main disadvantages of this topology is that if one workstation goes down , then the entire networks gets affected.

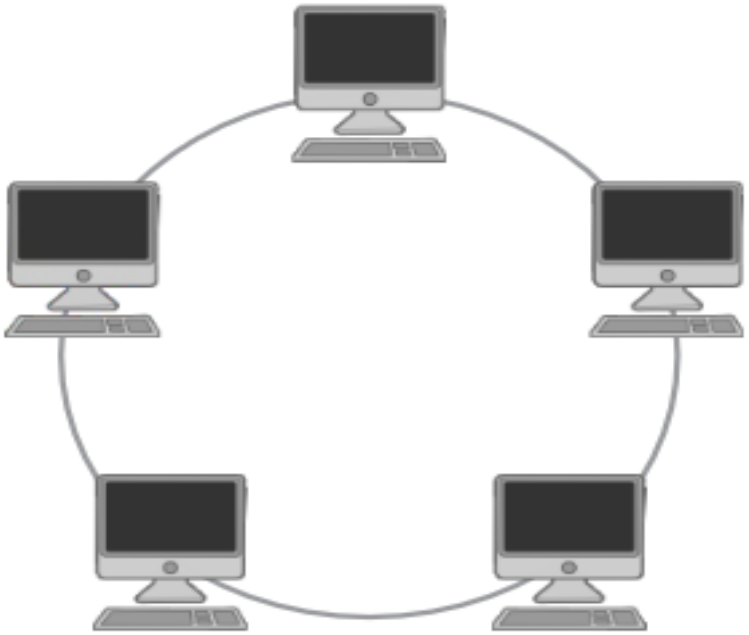


Figure 1.11: Ring Topology

Website: www.odmegroup.org
Email: info@odmps.org
Toll Free: 1800 120 2316
Sishu Vihar, Infocity Road, Patia, Bhubaneswar- 751024

TREE TOPOLOGY

- In this tree topology, the expansion of network is passible and easy but maintenance is difficult.

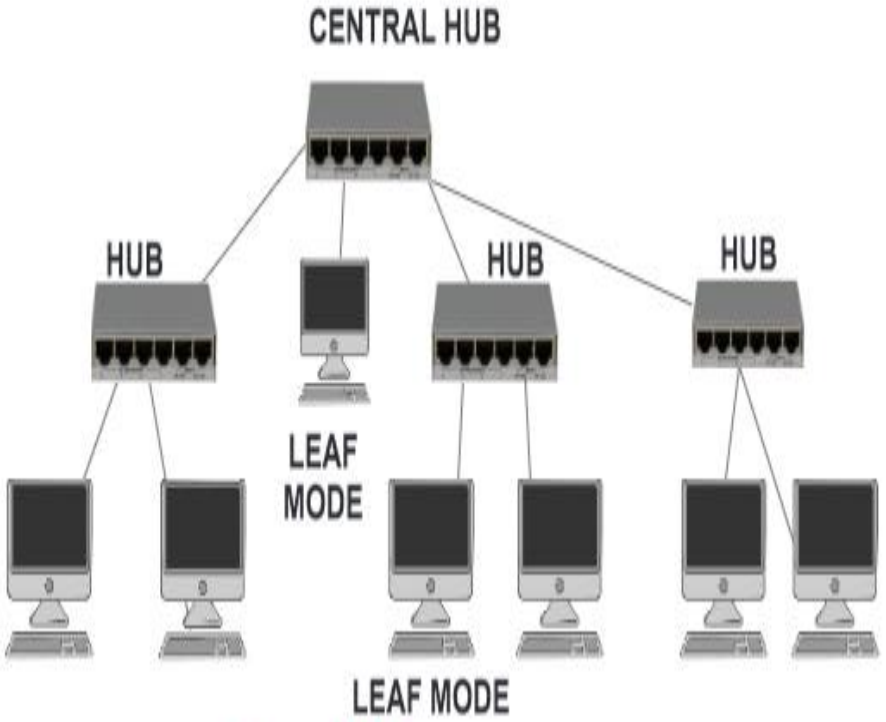


Figure 1.12: Tree Topology

Website: www.odmegroup.org
Email: info@odmps.org
Toll Free: 1800 120 2316
Sishu Vihar, Infocity Road, Patia, Bhubaneswar- 751024

- In mesh topology, each node is connected to every other node in the network.
- It is commonly used in wireless network.
- It is expensive as compared to other network.

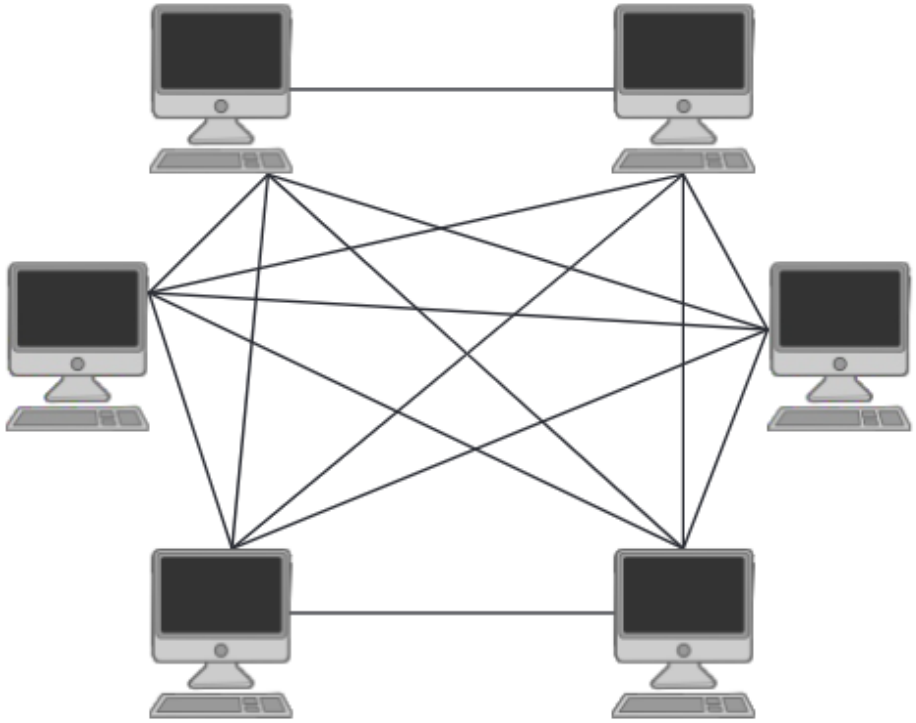


Figure 1.13: Mesh Topology

Website: www.odmegroup.org
Email: info@odmps.org
Toll Free: **1800 120 2316**
Sishu Vihar, Infocity Road, Patia, Bhubaneswar- 751024

ODM EDUCATIONAL GROUP
Changing your Tomorrow

Recap

- LAN is local area network used to connect computers within a small geographical area like one or two room or buildings, or Campus.
- PAN is the personal area network used to connect multiple device within a house to connect tv, iPod, laptop, mobile etc.
- MAN is metropolitan area network which connect devices with in a city for example city cable.
- WAN is the Wide area network which connect computers with a country or world for example telecommunication system of a country, ATMs of MNCs etc.
- Topology is the physical layouts of computers.
- The various topologies are Ring, BUS, Mess, Tree, Ring etc

Website: www.odmegroup.org
Email: info@odmps.org
Toll Free: 1800 120 2316
Sishu Vihar, Infocity Road, Patia, Bhubaneswar- 751024

ODM EDUCATIONAL GROUP
Changing your Tomorrow

Home Assignment

- Question 2,3,4,5(Page 17,18)

Website: www.odmegroup.org
Email: info@odmps.org
Toll Free: **1800 120 2316**
Sishu Vihar, Infocity Road, Patia, Bhubaneswar- 751024

ODM EDUCATIONAL GROUP
Changing your Tomorrow

THANKING YOU

ODM EDUCATIONAL GROUP

ODM EDUCATIONAL GROUP
Changing your Tomorrow

Website: www.odmegroup.org
Email: info@odmps.org
Toll Free: **1800 120 2316**
Sishu Vihar, Infocity Road, Patia, Bhubaneswar- 751024