Group A.

Aim: Types of topologies & transmission median.

Problem : Demonstrate the different type
Statement. of transmission median by using a
packet tool.

Pre-requisites: Packet tracer tool Knowledge
about. topologies media & transmission
media.

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learning : Understand topologies & types
objective transmission median & networking.

Theory: Topology defines the structure
of the network of how all the
components are interconnected to each
other.

Types of topology.
1) Bus topology.
2) Ring topology.
3] Tree topology.
4) star topology
5) Mesh topology
6) Hybrid topology.

i) Bus topology.

The bus topology is designed in such a way that all the stations are connected through a single cable known as a backbone cable.

The backbone is connected & considered as a single lane through which the message is broadcast to all the stations. CSMA CSMA method is commonly used.

ii) Ring topology

The ring topology is like a bus topology but connected ends. The node that recieves receives the message from the previous computer will retransmit to the next node. The data

iii) Star topology

Star topology is an arrangement of the network in which every node is connected to the central hub, switch or a computer (server). Coaxial cable or RJ-45 cables are used as connecting devices. Star topology is the most poof popular topology in network implementation.

iv) Tree topology.

Tree topology combines the characteristics of bus topology & star topology. Tree topology is a type of structure in which all the computer are connected with each other in heerachical fact fashion. The top-most node in tree topology is known

as root node. & all other nodes are desendants of the root nodes.

v) Mesh topology:

Mesh topology is an arrangement of the network in which computers are interconnected with each other through various redundant Connections. These are multiple paths from one Computer to another. It does not contained switch or central point of communication.

Mesh topology is mainly used for wireless networkes. It is formed by using formula.

$$(n * (n-1)) / 2.$$

vi) Hybrid topology.

Hybrid topology is combination of various different topologies. These is a connection between links & nodes to transfer the data.

Conclusion: After performing this practical, we studied different network topologies & implemented their transmission media & successfully implemented them using packet tracer tool.

lab. Assignment : 03.

Title	: WAN network with wired and wireless LAN.

Problem Statement	: Setup an ~~LAN~~ WAN which contains wired as well as wireless LAN by using a pocket tracer tool . Demonstrate transfer of a packet from LAN 1 (wired LAN) to LAN2 (wireless LAN).

Pre-requisities	: Packet tracer tool knowledge of LAN and WAN networks, Knowledge of wired and ~~wired~~ wireless.

Learning objective	: Understanding WAN networks which connect wired and wireless devices using packet tracer tool.

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Theory :	A computer network is referred to as a data network which is a series of interconnected node that can transmit, receive and exchange data, voice and video. traffic.

Theory: Types of Network.

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                    Types of Network
         |          |          |          |
        LAN        MAN        WAN        PAN.
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— Local Area Network (LAN).

LAN is a group of computer connected to each other in small area which such as buildings. LAN is used for connecting two or more personal computer through a communicat medium such as twisted pair, coaxial cable etc. The data is tranferred at an extremely faster rate in LAN.

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PC1 ——————————— PC2.
 |               |
 |               |
 .               |
PC4 ——————————— PC3.
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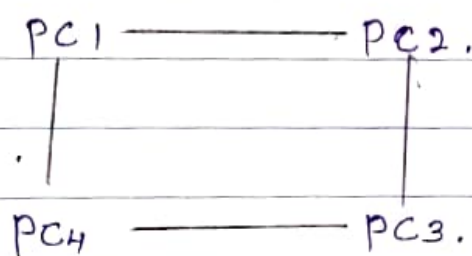
— Metropolitian Area Network (MAN).

MAN is a network that covers a large. geographic area by interconneting a different LAN to form a large network.

- Wide Area Network (WAN).

WAN is a network that extends over a large geographical area such as states or countries. WAN is not limited to a single location, but it spans over a large geographical area through a telephone line, fiber optical cable or

Satellite links.

— **Personal Area Network (PAN).**

PAN is a network arranged within an individual person, typically within a range of 10 mm. PAN is used for connecting the computer devices of personal use. PAN cover an area of 30 ft.

Types : 1] Wired PAN
2] Wireless PAN.

Wireless LAN:

WLAN requires on cables to connect the devices. WLAN use high-frequency radio waves and frequectly incorporteel an Internet access point. A WLAN allows users to wander throughout the coverage area, often a house or small to offices, while remaining connected to the network.

Wired LAN:

Wired network uses cables to connect devices such as laptop or desktop computers. to the internet or another network. The main media in use are cables twisted pair and fiber optics.

Conclusion: After performing this assignment, we have learnt to connect wired and wireless LAN setting up WAN.