Exp: 2

Network Cables

28/8/25

Aim:

Study of different types of network cables.

a) Understand Different types of Network Cables.

1. unshielded ~~Different types~~ Twisted pair (UTP) cable
2. Shielded Twisted pair (STP) Cable
3. Coaxial cable
4. Fibre optic Cable

Cable type	Category	Maximum Data Transmission	Advantages/ Disadvantages	Application
UTP	Category 3	10 Mbps	Advantages: • cheaper in cost • easy to install Disadvantages: • More prone to EMI	10 base-T ethernet
	Category 5	upto 100 Mbps		Fast ethernet
	Category 5e	1 Gbps		Gigabit ethernet
STP	Category 6, 6a	10 Gbps	Advantages: • Shielded • Faster than UTP • Less susceptible Disadvantages: • Expensive • Greater installation effort	Gigabit ethernet, 10G ethernet (65 m)
SSTP	Category 7	10 Gbps		Gigabit ethernet, 10G ethernet, (100 m)

Coaxial cable	RG-6 RG-59 RG-11	10-100Mbps	• High bandwidth • immune to interference • lowless bandwidth Disadvantages: • limited distance • cost	Speed of signal is 500m Television network
fibre optics	single mode Multi mode	100Gbps	Advantages: • High speed • High security • Long distance Disadvantages: • Expensive • Skilled installers	Maximum list of fibre optics cable is around 100M.

Student Observation:

1) Different between Cross cable and Straight
A straight cable connects different devices, while Cross cable connects similar devices by swapping transmit and receive wires.

2) Which type of cable is used to connect two PC?
Cross cable

3) Which cable is used to connect a router to PC?

Straight Cable

4) Find the category of twisted pair cables used to connect the PC to network socket?

Category 5e or Category 6

5) Write down understanding challenges faced and output received?

Learnt the colour codes and using standards.

Difficulty in arranging wires in correct order.

Successfully make working cables that connected devices and enabled proper network communication.

Result:

Hence the different types of network calls have been successfully studied.