21/7/2025 Practical - II

Understand different types of network cable

Different types of cables used in networking are:

1. Unshielded 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 / Use	Image
UTP	Category 3	10 bps	Advantages Cheaper in cost Easy to install as they have a small overall diameter. Disadvantages More prone to (EMI) Electromagnetic interference and noise	10BaseT Ethernet	
	Category 5	Upto 100 Mbps		Fast Ethernet, Gigabit Ethernet	
	Category 5e			Fast Ethernet, Gigabit Ethernet	
STP	Category 6, 6a	10 Gbps	Advantages Shielded Faster than UTP Less susceptible to noise and interference Disadvantages Expensive Greater installation effort	Gigabit Ethernet, 10G Ethernet (55m) Widely used in data centres	
SSTP	Category 7	10Gbps		Gigabit Ethernet, 10G Ethernet (100m)	

Coaxial cable	RG-6 RG-59 RG-11	10-100 Mbps	Advantages High bandwidth Immune to interference Low loss bandwidth Versatile Disadvantages Limited Distance lost Size is bulky	Speed of signal is 500m. Television network High-speed internet connections	
Fibre optic cable	Single mode Multi mode	100Gbps	Advantages High speed High bandwidth High security Long distance Disadvantages Expensive Requires skilled installers	Maximum distance of fibre optic cable is around 100 meters.	

1. What is the difference between cross cable and straight cable?

Straight cable: Connects devices of different types. Wires follow the same pattern on both ends.
Cross Cable: Connects devices of same type. The transmit and receive wires are swapped at one end.

2. Which type of cable is used to connect two PCs?
Cross cable is used

3. Which type of cable is used to connect a router/switch to your PC?
Straight cable

4. Find out the category of twisted pair cable used in your LAN, to connect the PC to the network socket.

Mostly, it should be Cat5e or Cat6 being used in LANs.

Result:
The study of various network cables was completed successfully.

3/8/22

Result -