Exp No: 2
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Study of different types of Network Cables

Aim:

To study and understand different types of Network Cables.

Understand different types of Network cables:-

Cable type	Category	Max Data Transmission	Advantages/ Disadvantages	Application
UTP	Category 3	10 bps	Advantages *Cheaper in Cost. * Easy to install they have a smaller overall diameter Disadvantages More prone to EMI and noise	*10Base T Ethernet *Fast Ethernet Gigabit Ethernet
	Category 5	Upto 100 MbPS		
	Category 5e	1 GbPS		
STP	Category 6, 6a	10GbPS	Advantages * Shielded * Faster than UTP *Less susceptable to noise & interference	Gigabit Ethernet 10G Ethernet
SSTP	Category 7	10GbPS	Disadvantages * Expensive *Greater Installation effort	*Gigabit Ethernet / 10G Ethernet (100m)

Coaxial Cable	RG-6 RG-59 RG-11	10-100mbPS	* High bandwidth * Immune to EMI * Low Loss Bandwidth * Versatile Disadvantages * Limited dist * Cost * Size is bulky.	Speed of signal in 500m Television Network High spe connectio
Fibre Optics Cable	Single mode Multimode	100GbPS	Advantages * High speed * High bandwidth * High Security * Long dist. Disadvantages. * Expensive * Requires skilled installers.	Maximum dist of fibre Optics Cable is 100m.

b)

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

Straight Cable (Straight-through Cable)

This type of cable connects each pin on one end to the corresponding pin on the other end (pin 1 to pin 1, pin 2 to pin 2, etc). It is used to connect different types of devices such as PC to a switch or router.

10/10

Result:

The Network cables are connected successfully

Cross Cable (Crossover Cable):

In crossover cable, the transmit & receive wires are crossed. For example, the transmit-pins on one end connect to the receive pins on the other end. It is used to connect similar devices directly such as PC to PC or switch, without an intermediary device.

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

A crossover cable is used to directly connect PC's.

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

A straight through cable is used to connect a router or switch to PC.

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

Usually, Category 5e or category 6 twisted pair cables are used in LANs for connecting PCs to network's sockets.

5) Write down your understanding challenges faced & output received while making a twisted pair cross/ straight cable.

Understanding:

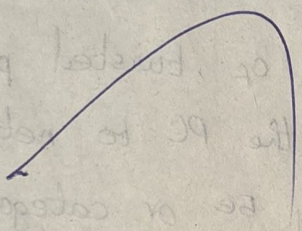
It learned that ethernet cables are made up of twisted pair of wires, depending on how these wires are arranged & connected the cable can be used for different network purpose.

Challenges faced :-

While making the cable, I found it challenging to ensure the wires were inserted correctly & in right order according to T568A or T568B wiring standards. Crimping RJ45 connectors securely was also tricky.

Output received:

After making the cable & testing it with a cable tester, the cable showed proper continuity & pin alignment. When used the devices connected with cable communicated correctly, confirming the cable was made properly.



Result:

Different types of network cables, such as straight through & crossover cables serve specific purposes in connecting devices. Understanding their wiring & use help ensure proper network communication & device compatibility.