Exp. 2
11/8/25

(Practical-2)

Study the different types of Network cables

AIM:

To Study the different types of Network cables.

a) Understand different type of Network cables.

Different type of cables used in network 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	Advantage / Disadvantage	Application
UTP	Category 3	10 bps	Advantages :- • cheaper in cost • Easy to install they have small diameter Disadvantage :- • More prone to (EMI) Electromagnetic interference and noise	10 Base-T Ethernet
	Category 5	up to 100 mbps		Fast Ethernet
	Category 5e	1 Gbps		Gigabit Ethernet
STP	Category 6 / 6a	10 Gbps	Advantages • shielded • Fast UTP • Less susceptible to noise & Disadvantage • Expensive • effort	Gigabit Ethernet, 10 G Ethernet widely used in data center
SSTP	Category 7	10 Gbps		Gigabit Ethernet, 10 G Ethernet

Coaxial cable	RG-6 RG-59 RG-11	10-100 Mbps	• High bandwidth • Immune to interference • Low loss bandwidth • Versatile Disadvantages • Limited distance • Cost • Size is bulky	Speed of ... is 500m Television ... high speed ... connections
fibre optics cable	Single mode Multi mode	100 Gbps	Advantages • high speed • high band width • high security - Long distance Disadvantages • Expensive • skill install	• Maximum distance of fibre optic cable is ... 100 meter.

Student observations:

1. what is difference b/w cross cable and straight cable?

Cross cable:

- connect similar devices.
- one end follow T568A wiring, and other T568B wiring
- used to connect 2 PCs directly or hub in between

straight cable

- Connect different type of devices.
- Pins are connected straight through (Pin 1, Pin 2 to Pin 1, Pin 2, etc)
- Connect PCs to switches or computers to hub.

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

3. Which type of cable is used to connect a router to your PC
   - straight cable is used to connect a router to your PC.

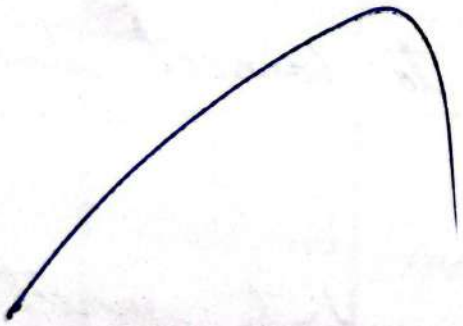
4. find out the category of twisted pair cable used in your lab to connect the PC to network socket?

   Common category used in LAN are Cat5e or Cat6 twisted pair cables.

   check the cable jacket for a label indicating the category.

5. write down your understanding, challenges faced and output received while making a twisted pair cross / straight cable?

Making cables involves matching wire color, crimping properly and testing; challenges include wire alignment and connector bit.



Result :

Therefore different types of cables are studied successfully.