Ex-No: 2
24/7/2024

Aim: Study of different types of Network cables.

a) understand different types of network cable.

different type of cables used in networking are:

1) unshielded twisted Pair cable
2) shielded twisted Pair cable
3) coaxial cable
4) fibre optic cable.

cable type	category	Maximum data Transmission	Advantages / disadvantages	Application / use.
UTP	category 3	10 bps	Advantages: 1) cheaper in cost 2) easy to install as they have a smaller overall diameter	10 Base - T ethernet
	category 5	up to 100 Mbps		fast ethernet, gigabit ethernet
	category 5e	1 Gbps	disadvantages: 1) More prone to EMI & noise	fast ethernet, gigabit ethernet

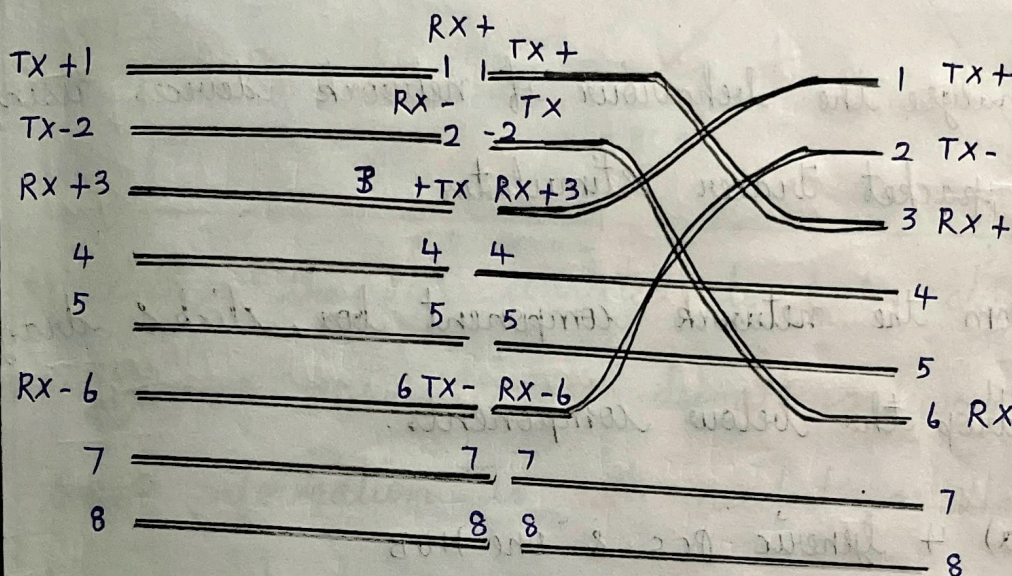|			Advantages	
STP	category 6, 6a	10 Gbps	Advantages: 1) shielded 2) faster than UTP 3) Less susceptible to noise	Gigabit ethernet, 10G ethernet (55m)
SSTP	category 7	10 Gbps	disadvantages: 1) expensive 2) Greater installation effort	Gigabit ethernet, 10G ethernet (100m)
coaxial cable	RG-6 RG-59 RG-11	10-100 Mbps	Advantages: 1) High bandwidth 2) immune to interference Disadvantages 1) Limited distance 2) cost 3) Size is bulky	Speed of signal is 500m television network High speed internet connections
fibre optics cable	Single mode multi mode	100 Gbps	Advantages: 1) High speed 2) High security 3) Long distance Disadvantages: 1) expensive 2) Requires	Maximum distance of fibre optics cable is around 100 meters

b) **Make your own ethernet cross over cable:**

Tools & part needed:

ethernet cabling, CAT 5e is certified for gigabit support, but CAT 5 cabling works as well just over.

straight thru cable   X-over cable

straight thru cable		X-over cable
TX +1	RX+ 1 — 1 TX+	1 TX+
TX-2	RX- 2 — 2 TX	2 TX-
RX +3	3 +TX RX+3	3 RX+
4	4 4	4
5	5 5	5
RX- 6	6 TX- RX-6	6 RX -
7	7 7	7
8	8 8	8

Student observation:

1) cross cable : connects diff. types of devices (PC to switch, router)

straight cable : connects similar device (PC to PC, switch to s)

2) cross cable

3) straight cable.

Result:

Thus the program is executed and output is verified.