

3/7/25

Ex-2 Study of different types of Network Cables				
Aim: Study of different types of cables				
Cable Type	Category	Maximum data transmission	Advantages	Disadvantages
UTP	Category 3	10 Mbps	<u>Advantages</u> i) cheap ii) easy to install iii) high data rate iv) small size v) easy to terminate	10 Base T-Ethernet fast Ethernet Gigabit Ethernet
	Category 5	up to 100 mbps	<u>Disadvantage</u> i) more prone to interference	
	Category 6	1 Gbps	<u>Advantages</u> i) faster than UTP ii) less interference	
STP	Category 6, 6A	100 mbps	<u>Advantages</u> i) shielded ii) faster than UTP	Gigabit Ethernet, 1000BaseT (50m)
SSTP	Category 7	10 Gbps	<u>Disadvantage</u> i) expensive ii) more difficult to install iii) high installation effort	Gigabit Ethernet, 1000BaseT (100m)
Coaxial Cable	RG-59	10-100 mbps	<u>Advantages</u> i) legal band width ii) immune to interference	Speed of signal is 500 m. Television network
	RG-6	100 mbps	<u>Disadvantage</u> i) limited distance ii) signal is bulky	High speed internet connection

fiber optics	Single mode	100Mbps	<u>Advantages</u>	maximum distance
Cable	multi mode		<ul style="list-style-type: none"> <li>1. High speed</li> <li>2. High bandwidth</li> <li>3. High security</li> </ul>	100 meters.

### Student observation

1. Difference b/w cross cable and straight cable
 

<u>Cross Cable</u>	<u>Straight Cable</u>
<ul style="list-style-type: none"> <li>1. The wiring sequence at both ends is different</li> <li>2. used to connect two similar devices</li> </ul>	<ul style="list-style-type: none"> <li>1. wiring sequence on both ends of the cable is identical</li> <li>2. used to connect two different type of devices</li> </ul>
2. Cable used to connect two PCs
 

~~Cross over cable is used to connect two PCs because both are similar devices their transmit and receive pipes need to be crossed~~
3. Type of cable used to connect a router to your PC
 

~~Straight through cable is used to connect different types of devices (PC to router)~~

4. find out the category of Twisted pair cable used in Giga-Optic to connect the PC to the Network Socket.

(i) Cat 5e (Category 5-2000 m) :- Supports upto 10 Gbps of data. Shorter distance.

5. with the help of understanding, challenges faced and output received while making a twisted pair cross/ straight cable.   
understanding how other make solid connection

In straight cable both ends follow the same color code (T568B - T568B)

In cross cable one end is T568A and the other end T568B

Challenges faced

Stripping the outer jacket without damaging inner wires and not bending wires.

Arranging wires in the correct color order before inserting in RJ45 connector

output received

Successfully tested cable using cable tester

Result

Connection of different types of network cables have been studied successfully.

Success