

# STUDY OF NETWORK CABLES

## AIM:

To study different types of network cable.

a) Understand different types of cables

1) Unshielded Twisted Pair (UTP)

2) Shielded Twisted Pair (STP)

3) Coaxial cable

4) Fibre optic cable

CABLE TYPE	CATEGORY	MAXIMUM DATA TRANSMISSION	ADVANTAGES AND DISADVANTAGES	APPLICATIONS
UTP	CATEGORY 3	10 bps	<b>ADVANTAGES:</b> ⇒ cheaper in cost ⇒ easy to install as they have smaller diameter  <b>DISADVANTAGES:</b> ⇒ more prone to EMI	* 10 Base-T Ethernet
	CATEGORY 5	UP TO 100 mbps		* Fast Ethernet
	CATEGORY 5E	1 Gbps		* Gigabit Ethernet
STP	CATEGORY 6, 6A	10 Gbps	<b>ADVANTAGES:</b> ⇒ shielded ⇒ Faster than UTP  <b>DISADVANTAGES:</b> ⇒ Expensive ⇒ Greater installation effort	* Gigabit Ethernet - net 10G (55m) Ethernet, widely used in data centre.
SSTP	CATEGORY 7	10 Gbps		
UTP	CATEGORY 3	10 bps	<b>ADVANTAGES:</b> ⇒ cheaper in cost ⇒ Easy to install  <b>DISADVANTAGES:</b> ⇒ more prone to EMI	* Gigabit Ethernet
	CATEGORY 5	UP TO 100 mb		10 G Ethernet (55m/100m)
COAXIAL CABLE	CATEGORY 5E RG-6	1 Gbps 10-100mbp		

FIBRE OPTIC CABLE	SINGLE MODE MULTI MODE	100 Gbps	ADVANTAGES: ⇒ high speed ⇒ high bandwidth ⇒ high security DISADVANTAGES: ⇒ expensive ⇒ Requires installers	* maximum distance of fibre optics cable is around 100 meters.
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## b) Student Observation :

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

Cross cables connect similar devices while straight cables connect different devices

2. Which type of cable is used to connect two PC's?

Cross cables are used to connect two PC's

3. Which type of cable is used to connect switch to PC?

Straight cable is used for connection

4. Find the category of twisted pair cables used in your PC to connect the network socket?

Most LANs use Cat 5e or Cat 6 twisted pair cables.

5. Write down: Understanding, challenges, Output while making twisted pair cables (Cross/Straight)

It involved matching wire colors, crimping properly & testing; challenges: wire alignment.

## RESULT:

Therefore, the different types of network cables were studied successfully.