

EXP: 2

3/7/25

STUDY OF DIFFERENT TYPES OF NETWORK CABLES

AIM: Study of different types of network cables

a) Understand different types of Network cable
They are :

- Unshielded Twisted Pair (UTP) cable
- Shielded Twisted Pair (STP) cable
- Coaxial cable
- Fibre Optical cable.

Table Type	Category	Max Data Transmission	Advantages / Disadvantages	Applications / Use
UTP	Category 3	10 bps	<u>Advantages:</u> <ul style="list-style-type: none"> • Cheaper in Cost • Easy to install as they have a smaller overall diameter. <u>Disadvantages:</u> <ul style="list-style-type: none"> • More prone to EMI & noise 	10 Base-T Ethernet Fast Ethernet, Gigabit Ethernet
	Category 5	Upto 100 Mbps		Fast Ethernet, Gigabit Ethernet
	Category 5e	1 Gbps		
STP	Category 6, 6a	10 Gbps	<u>Advantages:</u> <ul style="list-style-type: none"> • Shielded • Faster than UTP • Less susceptible to noise & interference <u>Disadvantages:</u> <ul style="list-style-type: none"> • Expensive • Greater installation effort 	Gigabit Ethernet, 10G Ethernet (55 m) Widely used in data centres
SSTP	Category 7	100 Gbps		Gigabit Ethernet, 10G Ethernet (100m)

Coaxial cable	RG-6	10-100 Mbps	<u>Advantages:</u>	Speed of signal is 500m Television network High speed internet connections.		
	RG-59		<ul style="list-style-type: none"> • High bandwidth 			
	RG-11		<ul style="list-style-type: none"> • Immune to interference • Low loss to bandwidth • versatile 			
Fibre optics cable	Single Mode	100 Gbps	<u>Advantages:</u>	Maximum distance of fibre optics cable is 100m		
	Multi Mode		<ul style="list-style-type: none"> • High speed • High Bandwidth • High Security • Long Distance 			
<u>Disadvantages:</u>						
<ul style="list-style-type: none"> • Expensive • Requires skilled installers 						

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~~W~~
RESULT: Hence the output was verified successfully.

~~Q~~
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STUDENT OBSERVATION:

- 1) what is the difference bt cross & straight cable?
 Sol: A straight cable connects different devices while a cross cable connects similar devices.
- 2) which type of cable is used to connect two PC's?
 Sol: Cross cable is used to connect two PCs directly.
- 3) which type of cable is used to connect a router/ switch to your PC?
 Sol: Straight cable is used to connect a router /switch to PC

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

Sol: Category 5e (Cat 5e) twisted pair cable is commonly used in LAN's

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

Sol: Understanding wiring standards was key. Challenges included precise wire arrangement. The O/P was a functional network cable.