

EXP: 2

STUDY OF DIFFERENT TYPES OF NETWORK CABLES

31/7/25

AIM: Study of different types of network cablesa) Understand different types of network cable
They are:

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

Cable 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 Fast Ethernet, Gigabit Ethernet
	Category 5	Upto 100 Mbps		
	Category 5e	1 Gbps		
STP	Category 6 6a	10 Gbps	<u>Advantages:</u> Shielded Faster than UTP Less susceptible to noise & interference <u>Disadvantages:</u> Expensive Greater installation effort	Gigabit Ethernet, 10G Ethernet (55m) Widely used in data centres Gigabit Ethernet, 10G Ethernet (100m)
SSTP	Category 7	100 Gbps		

Coaxial cable	RG-6 RG-59 RG-11	10-100 Mbps	<u>Advantages:</u> <ul style="list-style-type: none"> • High bandwidth • Immune to interference • Low loss to bandwidth • Versatile <u>Disadvantages:</u> <ul style="list-style-type: none"> • Limited distance • Cost • Size is bulky 	Speed of signal is 500m Television network High speed internet connections.
Fibre optics cable	Single Mode Multi Mode	100 Gbps	<u>Advantages</u> <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 	Maximum distance of fibre optics cable is 100m

RESULT: Hence the output was verified successfully.

STUDENT OBSERVATION:

Q1) What is the difference bt cross & straight cable?

Sol: A straight cable connects different devices while a cross cable connects similar devices.

Q2) Which type of cable is used to connect two PC's?

Sol: Cross cable is used to connect two PCs directly.

Q3) 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

4) 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.

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 with arrangement the O/P was a functional network cable.