

24/12/21

## Practical - 2.

Aim:

Study of different types of network cables.

a) Different types of cables used in networking

1. Unshielded Twisted pair (UTP) cable

2. Shielded Twisted pair (STP) cable.

3. Coaxial cable.

4. Fibre optic cable.

Cable Type	Category	Maximum Data Transmission	Advantages / Disadvantages	Application / Use
UTP	category 3	10 Mbps	Advantages: * Cheaper in cost	10 Base-T Ethernet
	category 5	upto 100 Mbps	* Easy to install.	Fast Ethernet, Gigabit Ethernet
	category 5e	1 Gbps	Disadvantage: * More prone to EMI	Fast Ethernet, Gigabit Ethernet
STP	category 6, 6a	10 Gbps	Advantages: * Shielded * Faster than UTP	Gigabit Ethernet, 10 Gb Ethernet
SSTP	category 7	10 Gbps	Disadvantage: * Expensive * Greater installation	Gigabit Ethernet, 10 Gb Ethernet
Coaxial	RG-6 RG-59 RG-11	10-100 Mbps	Advantage: * High Bandwidth * Immune to interference * Versatile Disadvantage: * Cost * Limited distance	Speed of signal is 500 m Television network High speed internet connections.
Fibre Optics cable	Single mode Multi mode	100 Gbps	Advantage: * High speed * High bandwidth. * Long distance Disadvantage: * Expensive	Maximum distance of fibre optics cable is around 100 metres.



b) Make your own Ethernet cross-over cable/Straight cable.

Tools and parts needed:

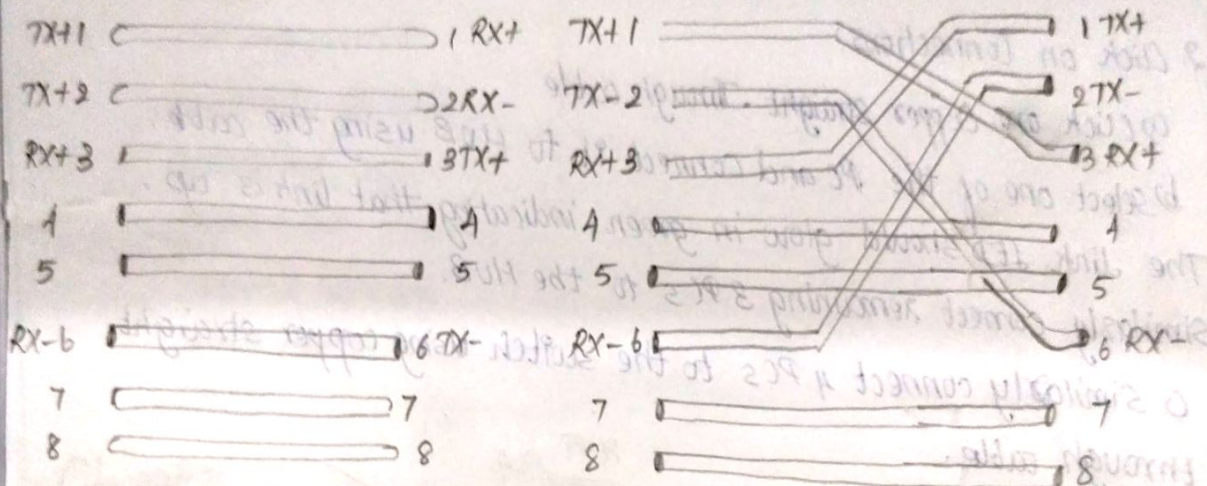
\* Ethernet cabling: CAT5e is certified for gigabit support, but CAT5 cabling works as well, just over shortest distances.

\* Crimping tool: This is an all-in-one networking tool shaped to push down the pins in the plug and strip and cut the shielding off the cable.

\* Two RJ45 plugs

\* Optional two plug shields.

Straight thru cable



Observation:

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

Cross cable - device to device connections -

Straight cable - used to connect devices to network hubs, switches or routers.

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

Cross cable.

3. Which cable used to connect a router and PC

Straight cable.

\* Final Result:

The experiment was successfully executed and O/P is verified.

3/11/24