

NETWORK CABLES

Aim:

To study the different types of network cable

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 category 5 category 5e	10bps up to 100 Mbps 1 Gbps	<u>Advantages</u> <ul style="list-style-type: none"> • cheaper in cost • Easy to install as they have a small overall diameter <u>Disadvantages</u> <ul style="list-style-type: none"> • More prone to (EMI) Electro magnetic interference & noise 	10 Base-T Ethernet Fast Ethernet, Gigabit Ethernet Fast Ethernet, Gigabit Ethernet
STP	Category 6, 6a	10 Gbps	<u>Advantages</u> <ul style="list-style-type: none"> • shielded • Faster than UTP • Less susceptible to noise and interference 	Gigabit Ethernet, 10G Ethernet (55m) Widely used in data centres
SSTP	Category 7	10 Gbps	<u>Disadvantages</u> <ul style="list-style-type: none"> • Expensive • Greater installation effort 	Gigabit Ethernet, 10G Ethernet (100m)
Coaxial cable	RG-6 RG-59 RG-71	10-100 Mbps	<u>Advantages</u> <ul style="list-style-type: none"> • High bandwidth • Immune to interference • Low loss 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

100Gbps

Advantages

- High speed
- High bandwidth
- High security
- Long distance

Disadvantages

- Expensive
- Requires skilled installers

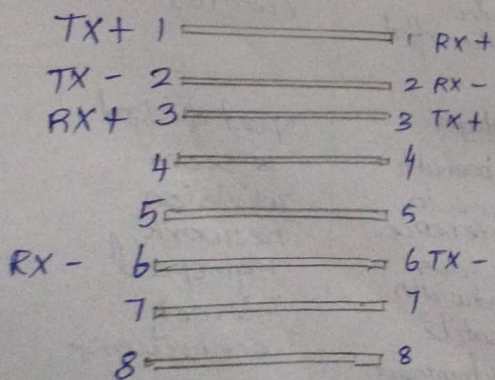
Maximum
distance
of fibre
optics
cable is
around
100 metres

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

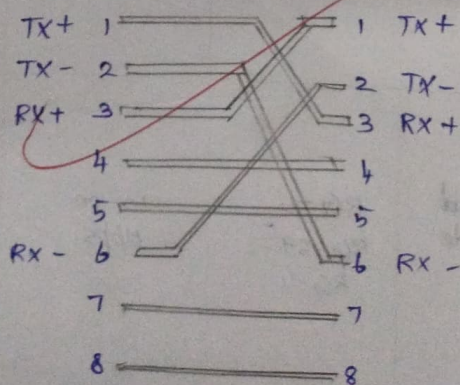
Tools and parts needed:

- Ethernet cabling CAT5e is certified for gigabit support, but CAT5 cabling works as well just over shorter distances
- A 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 cables
- Two RJ45 plugs
- Optional two plug shields

Straight thru
cable



X-over cable



Question & Answer

1. Cross cable - connected for same device
Straight cable - connected for different device

2. Cross cable

3. straight cable

5. Understanding : Involves arranging wire
challenges : correct wire arrangement
Output : successful cables enable network
connection

Result :

Thus the different types of network cable is studied.

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