

Exp. no : 02

Practical-02

Date : 23/07/24

Aim

Study of different types of network cables.

a) understand the different type of network cable

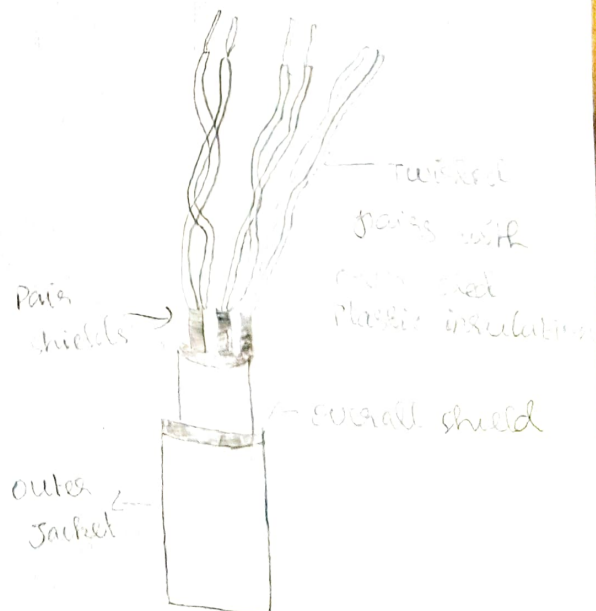
Cable Type	Category	Maximum data transmission	Advantages/Disadvantages	Application/Use.
UTP	category 3	10 bps	Advantages * cheaper in cost	10 Base-T
	category 5	upto 100 Mbps	* Easy to install as they have a smaller overall diameter	Fast ethernet, Gigabit Ethernet
	category 5e	100 bps	Disadvantages * More prone to (EMI) Electromagnetic interference and noise	Fast
STP	category 6, 6a	10 Gbps	Advantages * Shielded * Faster than UTP	Gigabit, ethernet-100
SSTP	category	100 bps	* Less susceptible to noise & interference Disadvantages * Expensive * Greater installation effort	(55m) widely used in data centres Gigabit Ethernet, 100 ethernet (100m)

Coaxial cable	RG-6 RG-59 RG-11	10-100 Mbps	<p>Advantages</p> <ul style="list-style-type: none"> * High bandwidth * Immune to interference * Low loss bandwidth * Versatile <p>Disadvantages</p> <ul style="list-style-type: none"> * Limited distance * Cost * Size is bulky 	is 500m, television network, high speed internet connection.
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Fibre optics cable	Single mode multi mode	100 Gbps	<p>Advantages</p> <ul style="list-style-type: none"> * High speed * High bandwidth * High security * Long distance. <p>Disadvantages</p> <ul style="list-style-type: none"> * Expensive * Requires skilled installers 	* Maximum distance of fibre optics cable is around 100 metres
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UTP

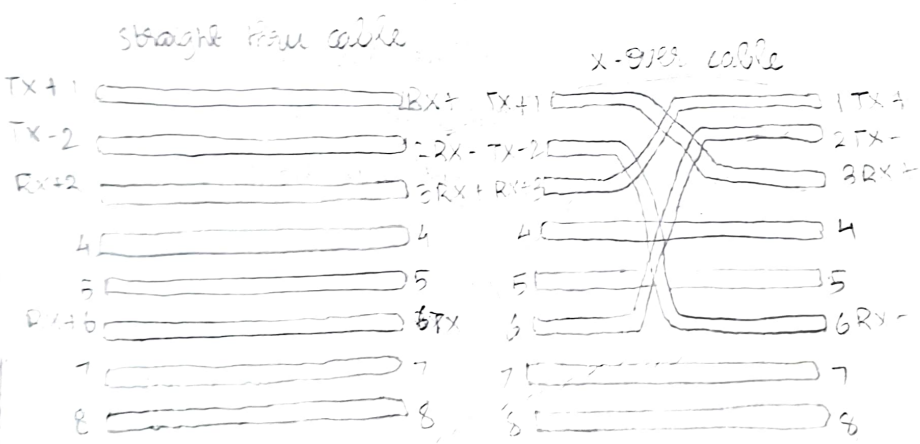


STP

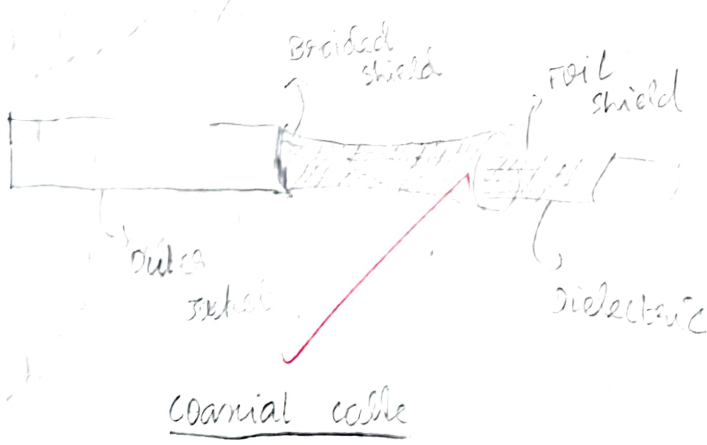
b) Make your own Ethernet cross-over cable / straight cable

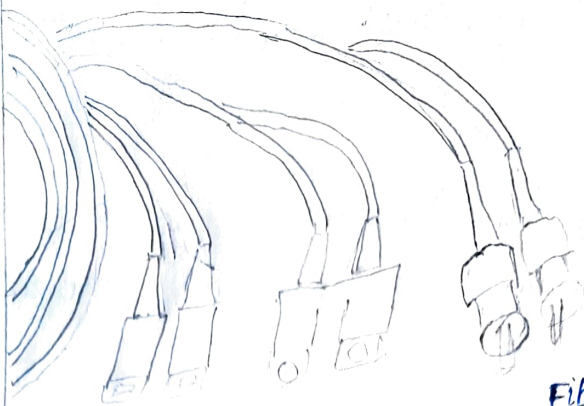
Tools and parts needed

- * 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



difference between crossover cable & straight cable





Fibre optical cable

Student observation

- 1) straight cable has same wiring on the both ends and connect different types of devices, whereas cross cable has different wiring on both ends and connect similar devices
- 2) cross cable
- 3) straight cable
- 4) unshielded twisted pair
- 5) Creating network cable involves arranging the wires in a specific order and their transmission between different connected devices.

Q. 11a
23/7/24
Result

Thus the connection of wires and network cables are observed and studied