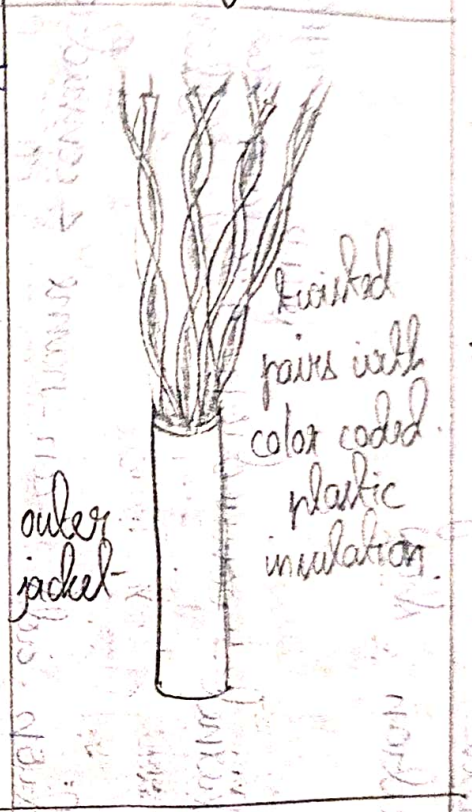
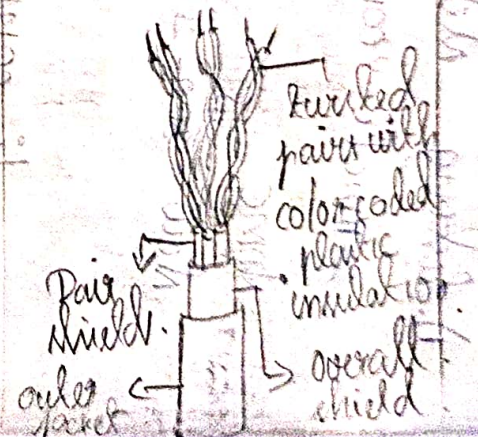
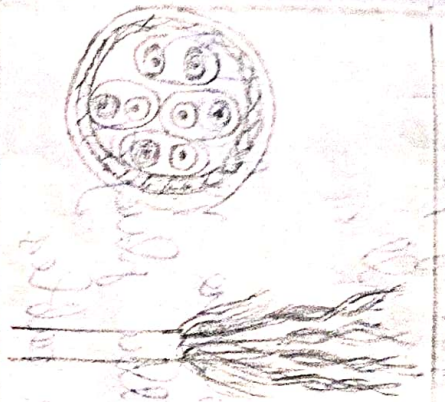
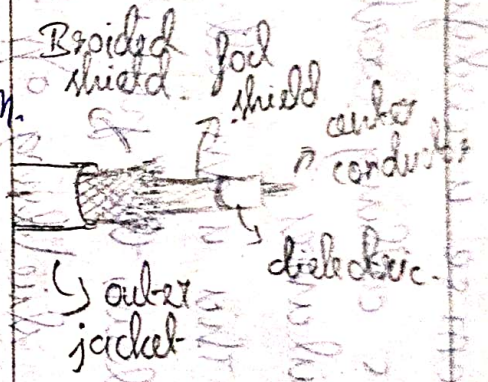
Ex: 2.
24/1/24.
PRACTICAL-2.

AIM:- Study of different types of network cables.

a). Understand different types of network cable.

cable type	category	Maximum Data Transmission.	advantages / disadvantages.	application / use	Image.
UTP	category 3.	10 bps.	advantages:- →Cheaper in cost. →Easy to install as they have a smaller overall diameter. Disadvantages. →More prone to electromagnetic interference & noise.	10 BaseT ethernet	
	category 5	Up to 100 Mbps.		Fast Ethernet, Gigabit Ethernet	
	category 5e.	1 Gbps.		~~Fast~~	
STP	category 6, 6a.	10 Gbps.	advantages. →Shielded →Better than UTP. →Less susceptible to noise & interference.	Gigabit Ethernet, 10G Ethernet (55m) widely used in data centres.	

STP.	category 7.	10 Gbps.	Disadvantages: → Expensive. → Greater installation effort.	Gigabit ethernet, 10 G Ethernet (100 m).	
Coaxial cable.	RG-6 RG-59 RG-11	10 - 100 Mbps.	→ High bandwidth → immune to interference. → Low loss bandwidth.	Speed of signal is 500 m television network high speed internet connections.	
Fibre optics cable.	single mode. multi mode	100 Gbps.	adv: → Highspeed. → high bandwidth. → high security. dis: → Expensive. → requires skilled	* maximum distance of fibre optics cable is around 100 meters	

4. MAKE YOUR OWN ETHERNET CROSS-OVER CABLE/ STRAIGHT CABLE

Tools and parts needed :-

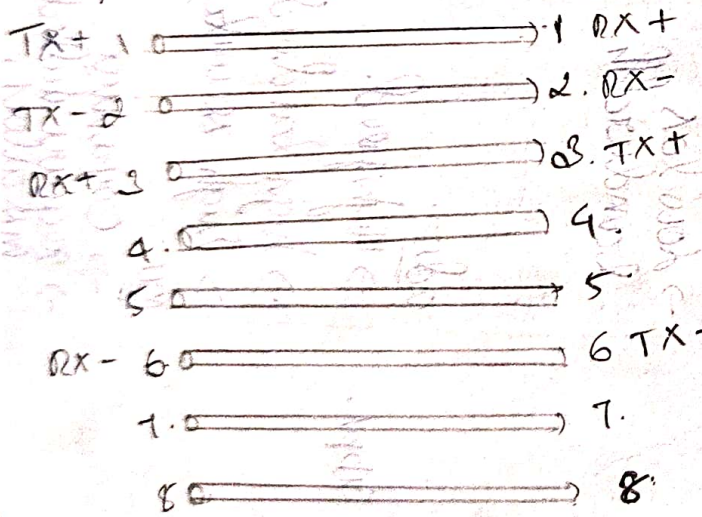
→ Ethernet calling CAT5e is certified for gigabit support, but CAT5 calling works as well, just over shorter distances.

→ A crimping tool. This is an all-in-one networking tool shaped to push down the pins in the plug & strip and cut the shielding off the cables

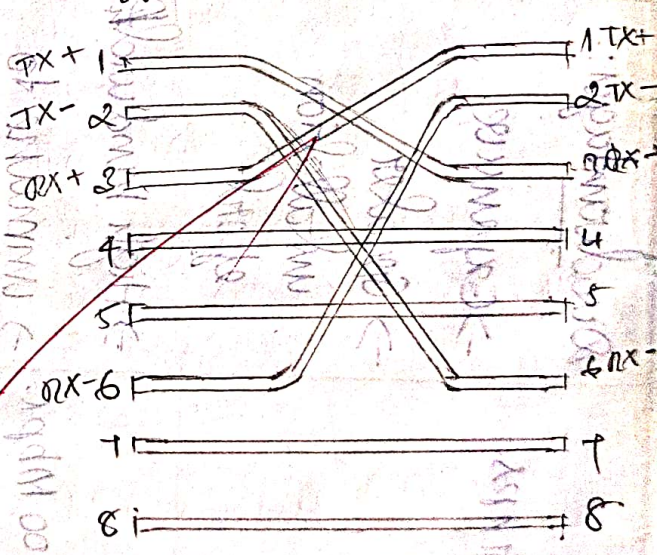
→ Two RJ45 plug

→ Optional two plug shields.

STRAIGHT THRU CABLE



X-OVER CABLE



STUDENT OBSERVATION.

1) What is the difference between cross cable & straight cable?

STRAIGHT CABLE	CROSS CABLE
→ Also known as a patch cable → follows the T568A or T568B wiring standard on both side	→ also known as crossover cable. → one end follow the T568A standard & other follows T568B standard

2) Which type of cable is used to connect two PC?
- cross cable.

3) Which type cable is used to ~~connect two PC~~? connect a router / switch to your PC?
- straight cable.

4) Find out the category of twisted pair cable used in your lan to connect the PC to the network socket
Category 5e (cat5e) or Category 6 (cat6)

5) Write down your understanding, challenges faced and output received while making a twisted pair - cross / straight cable

UNDERSTANDING:-
* Twisted Pair cable.
* Straight cable
* Cross cable.

CHALLENGES FACED:
→ Ensuring the correct wiring order.
→ Testing the cable to confirm proper connectivity and performance

OUTPUT RECEIVED:-
→ succesfully

Result:-
Hence the different types of network cables studied.

10/8/24