

Aim:- Study of different types of Network cables

Different type of cables of network:

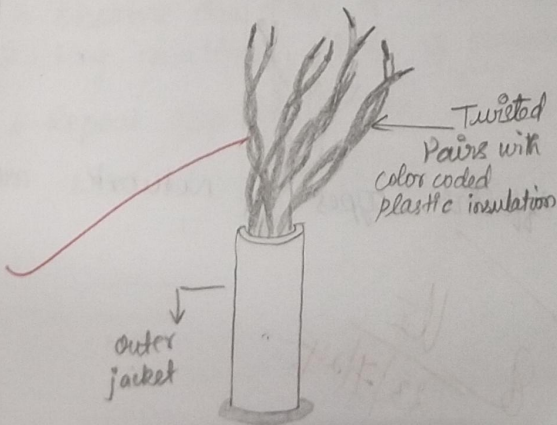
1. Unshielded Twisted Pair (UTP) cable
2. Shielded Twisted Pair (STP) cable
3. Coaxial cable
4. Fibre Optic cable.

Cable Type	Category	Maximum Data Transmission	Advantages/Disadvantages	Application/Use
UTP	Category 3	10 bps	<u>Advantages</u>	10Base-T Ethernet
	Category 5	Up to 100 Mbps	<ul style="list-style-type: none"> <li>• cheaper in cost</li> <li>• Easy to install as they have a smaller overall diameter.</li> </ul>	Fast Ethernet, Gigabit Ethernet
	Category 5e	1 Gbps	<u>Disadvantages</u>	Fast Ethernet, Gigabit Ethernet
			<ul style="list-style-type: none"> <li>• More prone to (EMI) Electromagnetic Interference and noise.</li> </ul>	
STP	Category 6, 6a	10 Gbps	<u>Advantages</u> <ul style="list-style-type: none"> <li>• Shielded</li> <li>• Faster than UTP</li> <li>• Less susceptible to noise and interference</li> </ul>	Gigabit Ethernet, 10G Ethernet (50m) widely used in data centres.
8STP	Category 7	10 Gbps	<u>Disadvantages</u> <ul style="list-style-type: none"> <li>• Expensive</li> <li>• Greater installation effort</li> </ul>	Gigabit Ethernet, 10G Ethernet (100m)

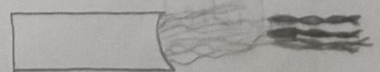
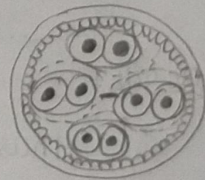
Cable Type	Category	Maximum Data Transmission	Advantages / Disadvantages	Application / Use
coaxial cable	RG-6	10-100 Mbps	<u>Advantages</u> <ul style="list-style-type: none"> <li>• High bandwidth</li> <li>• Immune to Interference</li> <li>• low loss bandwidth</li> <li>• versatile</li> </ul> <u>Disadvantages</u> <ul style="list-style-type: none"> <li>• limited distance</li> <li>• cost</li> <li>• Size is bulky</li> </ul>	Speed of signal is 500m Television network High speed internet connections
	RG-59 RG-11			
fiber optics cable	Single mode Multi-mode	100 Gbps	<u>Advantages</u> <ul style="list-style-type: none"> <li>• High speeds</li> <li>• High bandwidth</li> <li>• High security</li> <li>• long distance</li> </ul> <u>Disadvantages</u> <ul style="list-style-type: none"> <li>• Expensive</li> <li>• Requires skilled installers</li> </ul>	<ul style="list-style-type: none"> <li>• Maximum distance of fibre optics cable is around 100 meters.</li> </ul>

Images:

a) UTP



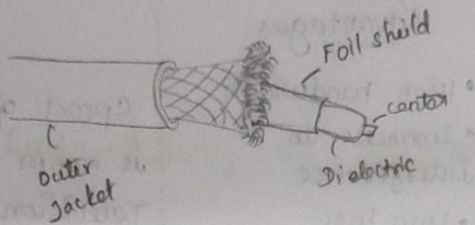
STP



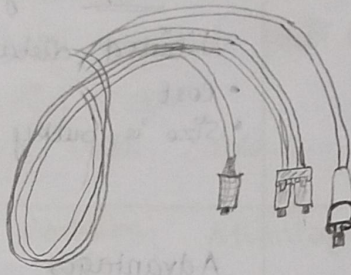
SSTP



## Coaxial cable



## Fibre optics cable.



## RESULT:-

Thus, the different types of Networks are studied.

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23/7/24