21/7/25

Practical - 2

Aim: Study of different types of Network cables.

a) Understand different types of network cables.

Different type of cables used in networking are:

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	Advantages • Cheaper in cost • Easy to install as they have smaller overall diameter Disadvantages • More prone to (EMI) Electromagnetic interference and noise	10 Base-T Ethernet
	Category 5	Up to 100 Mbps		Fast Ethernet, Gigabit Ethernet
	Category 5e	1 Gbps		Fast Ethernet, Gigabit Ethernet.
STP SSTP	Category 6, 6a	10 Gbps	Advantages • Shielded • Faster than UTP • Less susceptible to noise and interference Disadvantages • Expensive • Greater installation effort.	
	category 7	10 Gbps		

coaxial cable	RG-6 RG-59 RG-11	10-100Mbps	• High bandwidth • Immune to interference • Low Loss braindwidth • Versatile • Disadvantages • Limited distance • cost • Size is bulky	• speed of signal is room 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 meters

Student Observation:

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

• Straight cable: The wiring order is the same on both ends (used for connecting different types of devices.

• Cross cable: The transmit and receive wires are swapped on the end (user for connecting similar devices)

2. which type of cable is used to connect two PC? (straight/cross cable)

- Cross cable (for direct connection without a switch/router)

3. Which type cable is used to connect too a router/ switch to your PC? (Stright/cross cable)

- cable for connecting router/switch to PC is stright cable

4. Find out the category of twisted pair cable used in your LAN to connect the PC to the network socket

Category of twisted pair cable in LAN

- Cat 5e
- Cat 6

5. Write down your understanding, challenges faced and output received while making a twisted pair cross/stright cable

- understanding: correct pin configuration is crucial
- challenges: Maintain wire order, proper crimping, avoiding cable damage.

output: Successfully connected devices with stable network connection.

Result: Thus study of different types of Network cables are executed.

21/8/25