Practical - 2

Aim: Study of different types of network cables.

(a) Understand different types of network cable.

Different types of cables used in networking 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	Adv/ Disadv	Applications / use
UTP	Category 3 Category 5 Category 5e	10 bps UP TO 100 Mbps 1 Gbps	Adv · Cheap in cost · Easy to install Disadvantages · More prone to EMI	10 Base T Ethernet Fast Ethernet Gigabit Ethernet Fast Ethernet Gigabit
STP	Category 6, 6a	10 Gbps	Adv · Shielded · Faster than UTP	Gigabit Ethernet 10 G Ethernet (55m)
SSTP	Category 7	10 Gbps	· Less susceptible to noise Disadv · Expensive · Inflexible	Gigabit Ethernet 10 G Ethernet (100m)
Coaxial cable	RG-6 RG-59 RG-11	10 - 100 Mbps	Adv · High bandwidth · Immune to interference · Versatile Disadv · Limited distance · Cost · Susceptibility	Speed of sound transmission television network High speed internet connections
Fibre optics cable	Singlemode Multimode	100 Gbps	Adv · High speed · High bandwidth · High security · Long distance Disadv · Expensive · Requires skilled installers	· Maximum distance of fibre optic cable is around 100 meters

Student observation

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

Ans:- Cross cable connects similar devices while straight cable connects different devices.

2) Which type of cable is used to connect 2 PC's?

Ans: cross cable

3) Which type of cable is used to connect a router / switch & your PC?

Ans:- straight cable.

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

Ans: Cat 5e or cat 6.

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

Ans:- making cables required careful pin alignment, challenge was crimping properly, but the output was working correctly.

Result: Different types of Network cable studied successfully.

31/10/25