

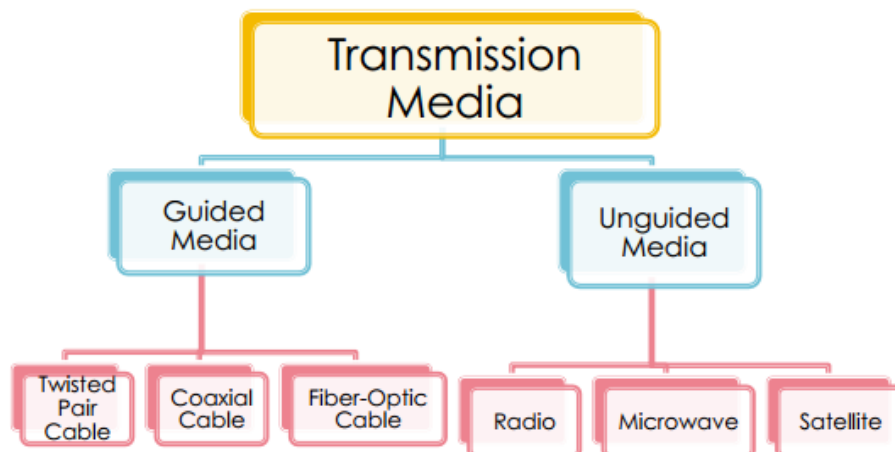
NORTH-EX PUBLIC SCHOOL
(Senior secondary, affiliated to CBSE)
School block, Jain Nagar, Sector-38, Rohini, Delhi-81
LESSON PLAN FOR CLASS XII (COMPUTER SCIENCE)

***Note-** Before reading about the topic you must check [this](#) link which will help you in understanding the topics.

You can download this or if you do not have facility to get printout then you can ask your ward to copy it in a simple notebook and must do exercise in the notebook.

TOPIC: - Transmission Media with Worksheet 2

All the computers or communicating devices in the network must be connected to each other to communicate and share data and other resources. To connect to each other, there must be some **medium over which the data can travel from one computer to another**. This medium is termed as a Transmission Media or Channel. The selection of media depends on the **cost, data transfer speed, bandwidth** and **distance**. Networks/Channels can be guided(wired) or unguided (wireless).



1. Wired/ Guided Media:

Wired/Guided media are also known as physical or conducted media. These media use various types of cables, e.g., Twisted Pair Cable, Coaxial Cable and Fibre Optic Cable for transmitting data over various networks.

Wired networks, also called Ethernet networks, are the most common type of Local Area Network (LAN) technology. A wired network is simply a collection of two or more computers., printers, and other devices linked by Ethernet cables. Ethernet is the fastest wired network protocol with connection speeds of 10 megabits per second (Mbps) to 100 Mbps or higher.

1.1 Twisted Pair Cable:

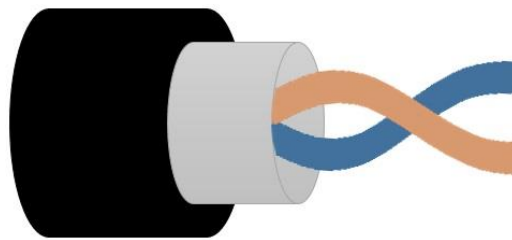
Twisted pair or Ethernet cable is the most common type of media which consist of four insulated pairs of wires twisted to each other. It is usually used for creating small

computer networks and extensively used in Local Area Networks (LANs). It is available in Shielded Twisted Pair (STP) or Unshielded Twisted Pair (UTP).

1.1.1 Shielded Twisted Pair (STP):

STP is also the type of twisted pair which stands for Shielded twisted pair. In STP grounding cable is required but in UTP grounding cable is not required. in Shielded Twisted Pair (STP) much more maintenance are needed therefore it is costlier than Unshielded Twisted Pair (UTP).

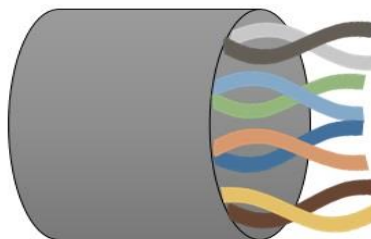
Shielded Twisted Pair Cable



1.1.2 Unshielded Twisted Pair (UTP):

UTP is the type of twisted pair cable. It stands for Unshielded twisted pair. Both Data and voice both are transmitted through UTP because its frequency range is suitable. In UTP grounding cable is not necessary also in UTP much more maintenance are not needed therefore it is cost effective.

Unshielded Twisted Pair Cable



Difference between STP and UTP:

S.No.	STP	UTP
1	STP stands for Shielded twisted pair.	UTP stands for Unshielded twisted pair.
2	While in STP grounding cable is required.	In UTP grounding cable is not necessary.
3	Data rate in STP is high.	Data rate in UTP is slow compared to STP.
4	While STP is costlier than UTP.	The cost of UTP is less
5	While in STP much more maintenance are needed.	In UTP much more maintenance are not needed.
7	While in STP generation of crosstalk is also less.	In UTP the generation of crosstalk is also high compared to STP.

Advantages:

- It is low-cost, low-weight and flexible cable.
- It is a thin and flexible cable and, therefore, easy to install and maintain.

Disadvantages:

- It is suitable only for short distances (up to 100 metres.) For longer distances. A Repeater is required.
- It supports low bandwidth and offers speed up to 100 Mbps.

To be Continued...

Worksheet 2

Attempt all the questions mentioned in your notebook.

Q1) What is difference between STP & UTP?

Q2) What do you understand by guided media?

Q3) Write two examples of guided media.

Q4) Write two examples of unguided media.

Q5) Write two advantages of twisted pair cable.