

An Autonomous Institution

Accredited by NBA – AICTE and Accredited by NAAC – UGC with ‘A+’ Grade
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

DEPARTMENT OF INFORMATION TECHNOLOGY

19CSB302 – COMPUTER NETWORKS

III YEAR V SEM

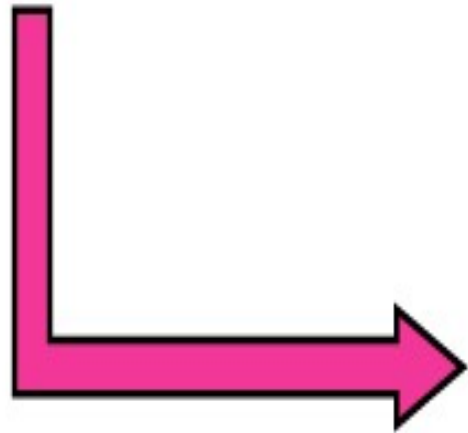
UNIT 1 – FUNDAMENTALS AND PHYSICAL LAYER

TOPIC 7 –Transmission Media

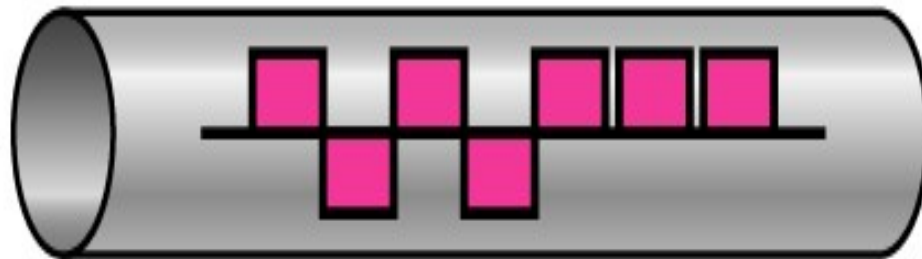
Sender



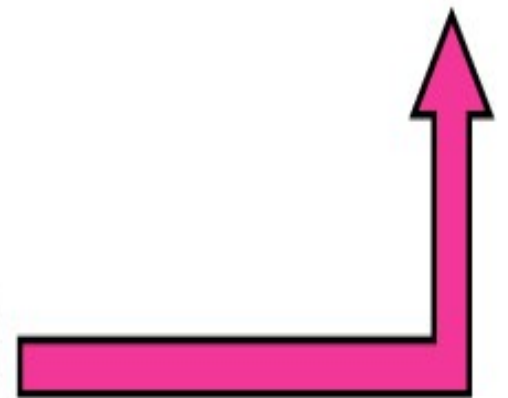
Receiver

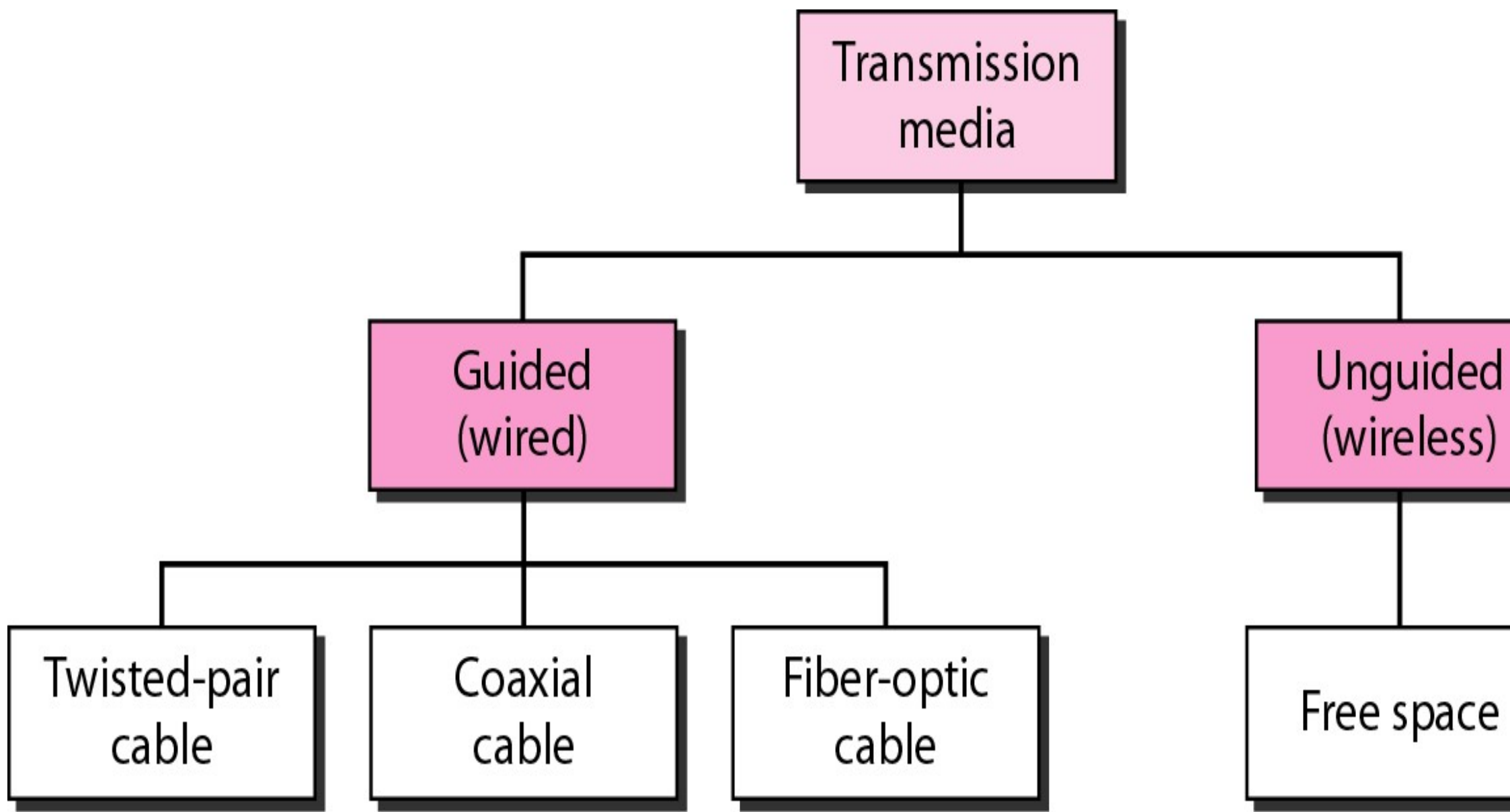


Transmission medium



Cable or air





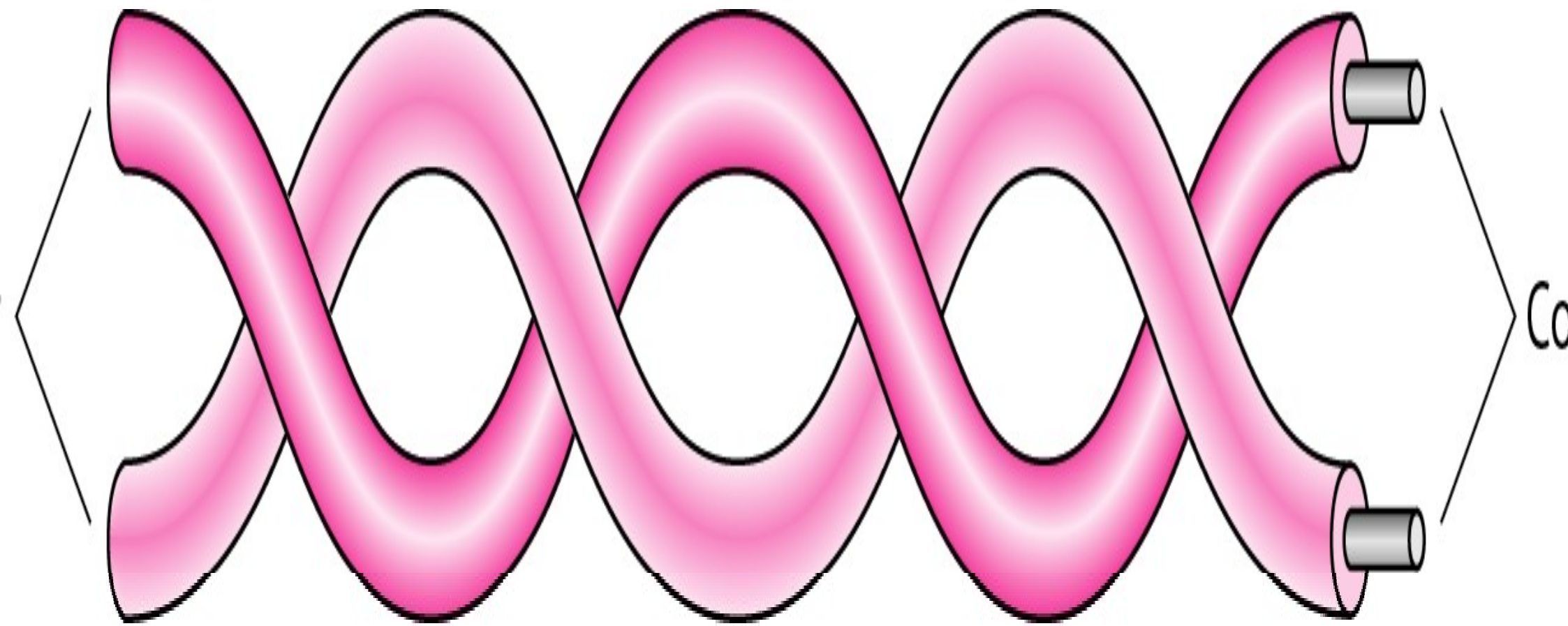
GUIDED MEDIA

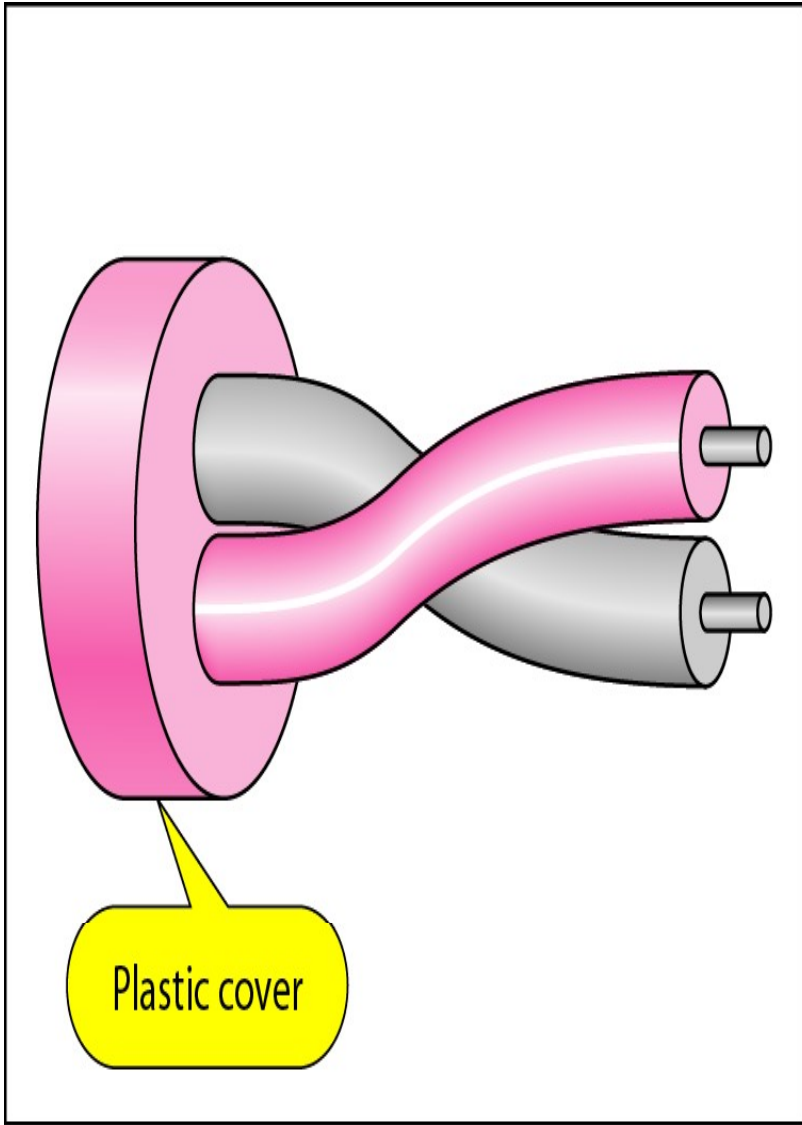
ed media, which are those that provide a condu
e to another, include twisted-pair cable, coaxia
-optic cable.

ted-Pair Cable

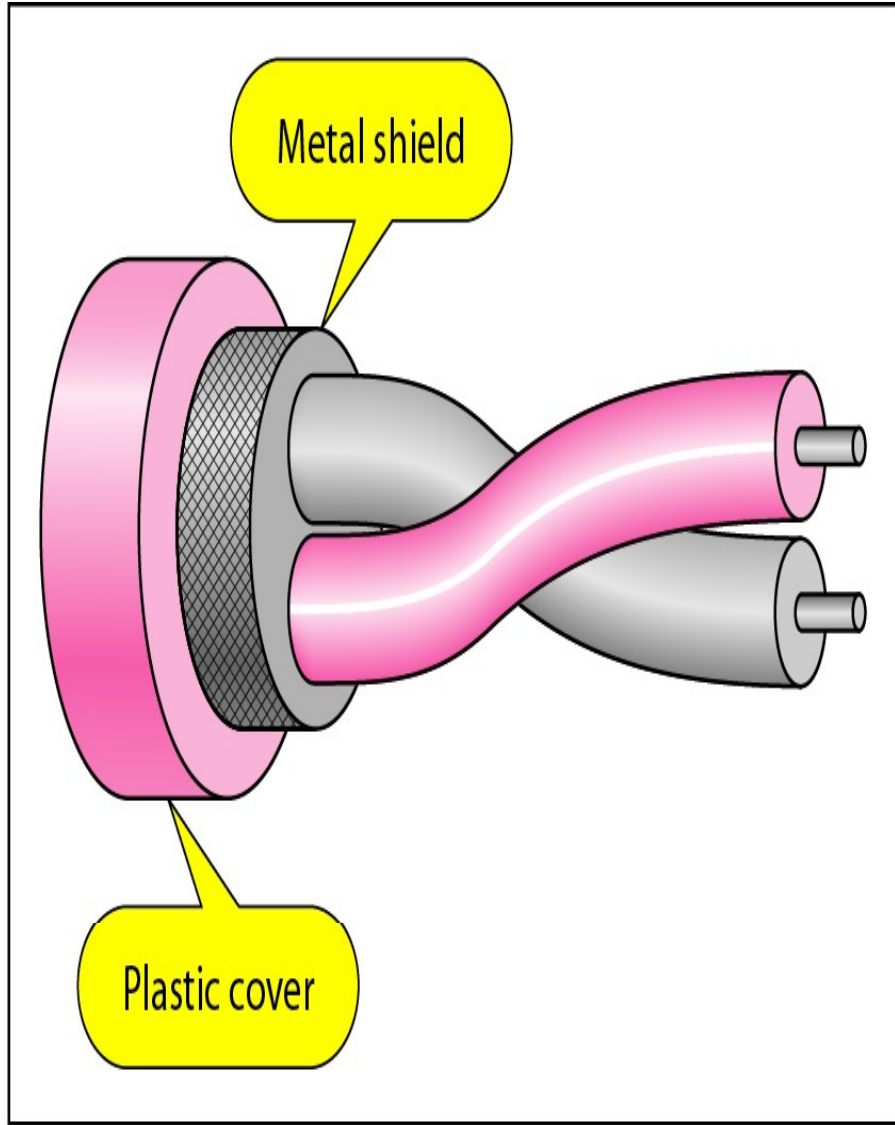
ial Cable

-Optic Cable



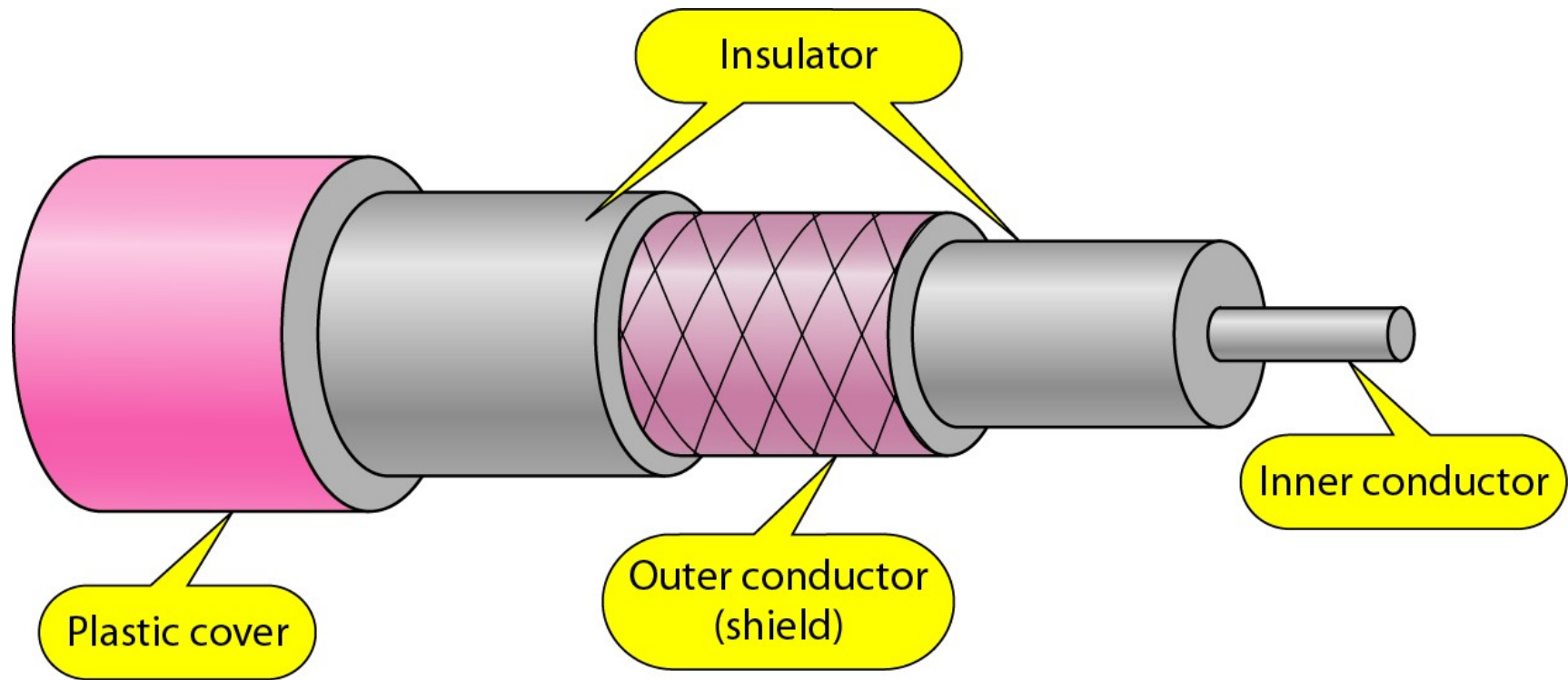


a. UTP

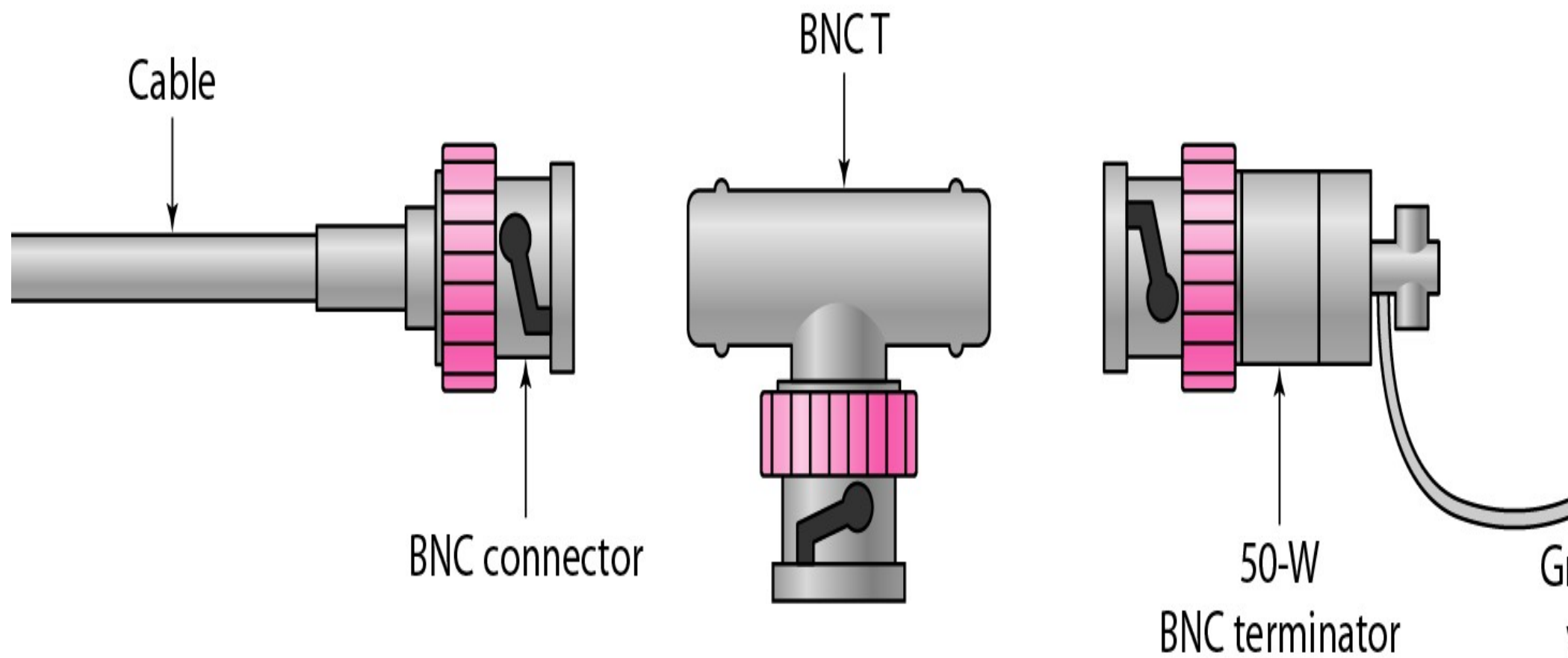


b. STP

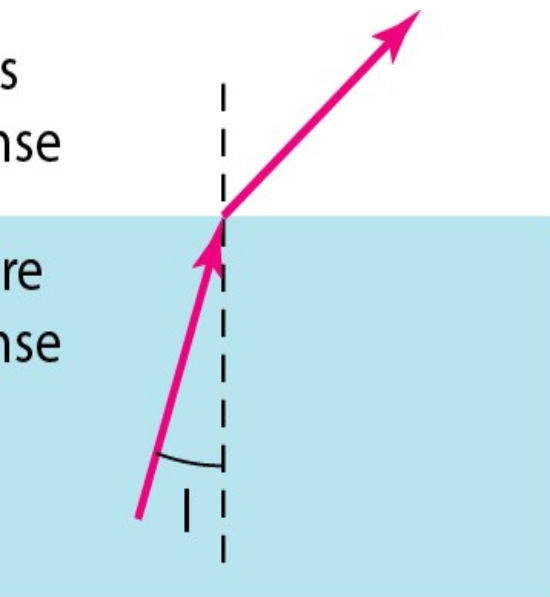
<i>Category</i>	<i>Specification</i>	<i>Data Rate (Mbps)</i>	<i>Use</i>
1	Unshielded twisted-pair used in telephone	< 0.1	Telephone
2	Unshielded twisted-pair originally used in T-lines	2	T-1 lines
3	Improved CAT 2 used in LANs	10	LANs
4	Improved CAT 3 used in Token Ring networks	20	LANs
5	Cable wire is normally 24 AWG with a jacket and outside sheath	100	LANs
5E	An extension to category 5 that includes extra features to minimize the crosstalk and electromagnetic interference	125	LANs
6	A new category with matched components coming from the same manufacturer. The cable must be tested at a 200-Mbps data rate.	200	LANs
7	Sometimes called SSTP (shielded screen twisted-pair). Each pair is individually wrapped in a helical metallic foil followed by a metallic foil shield in addition to the outside	600	LANs



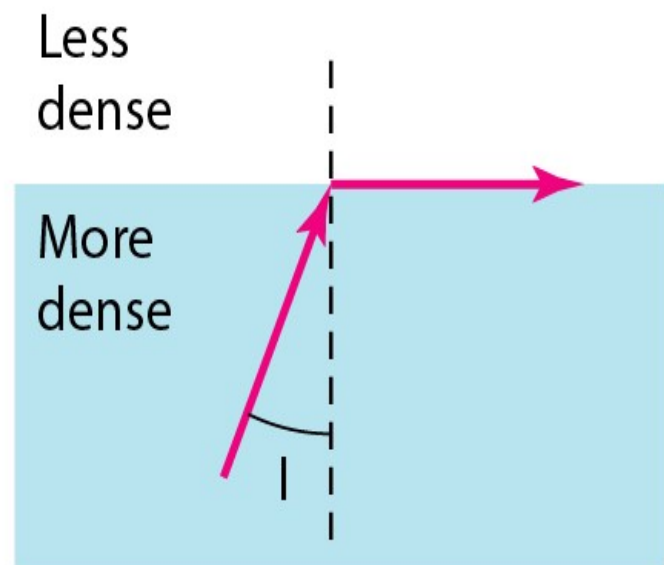
<i>Category</i>	<i>Impedance</i>	<i>Use</i>
RG-59	75 Ω	Cable TV
RG-58	50 Ω	Thin Ethernet
RG-11	50 Ω	Thick Ethernet



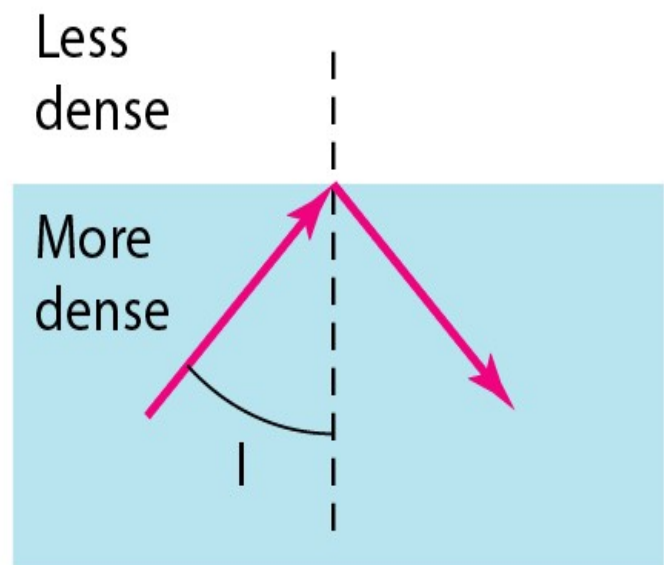
Bending of light ray



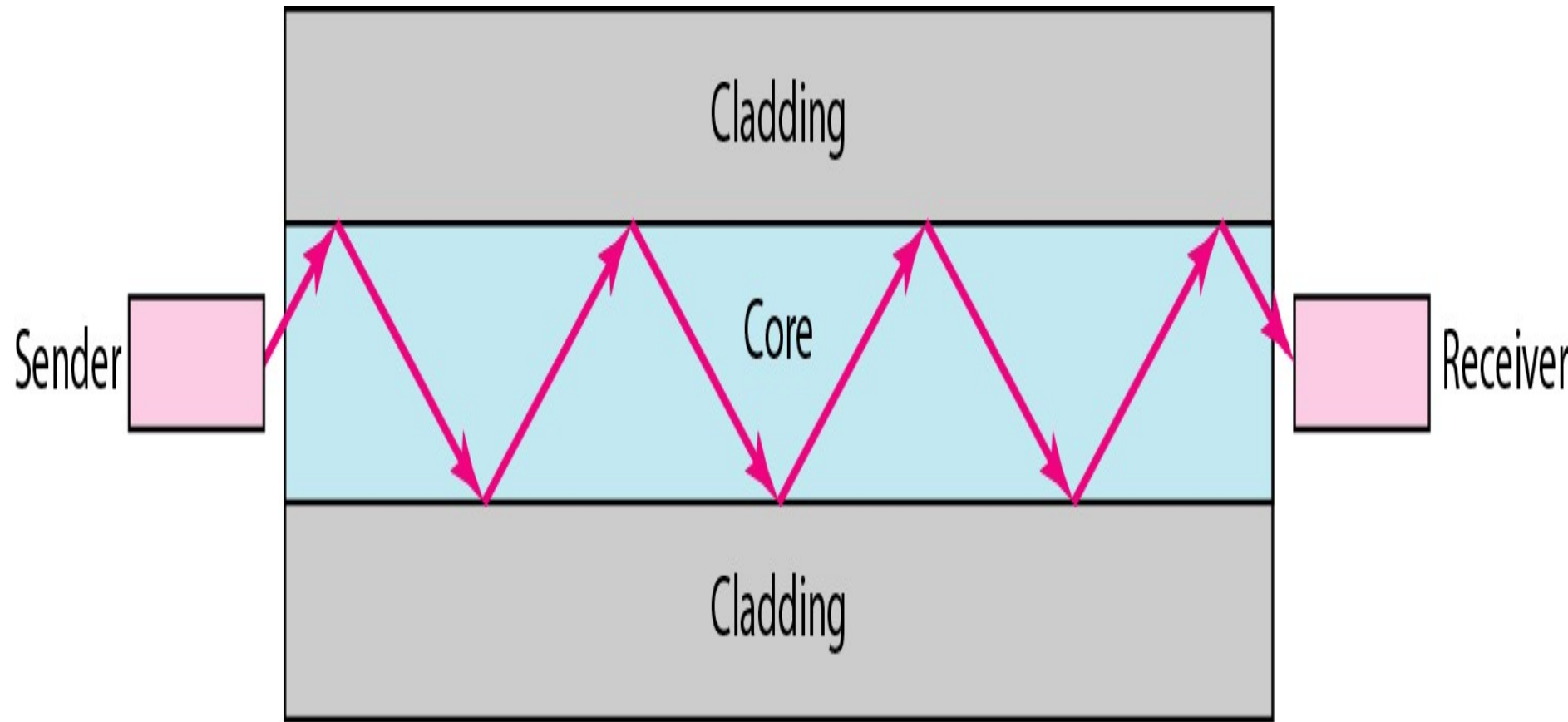
$i < \text{critical angle}$,
refraction

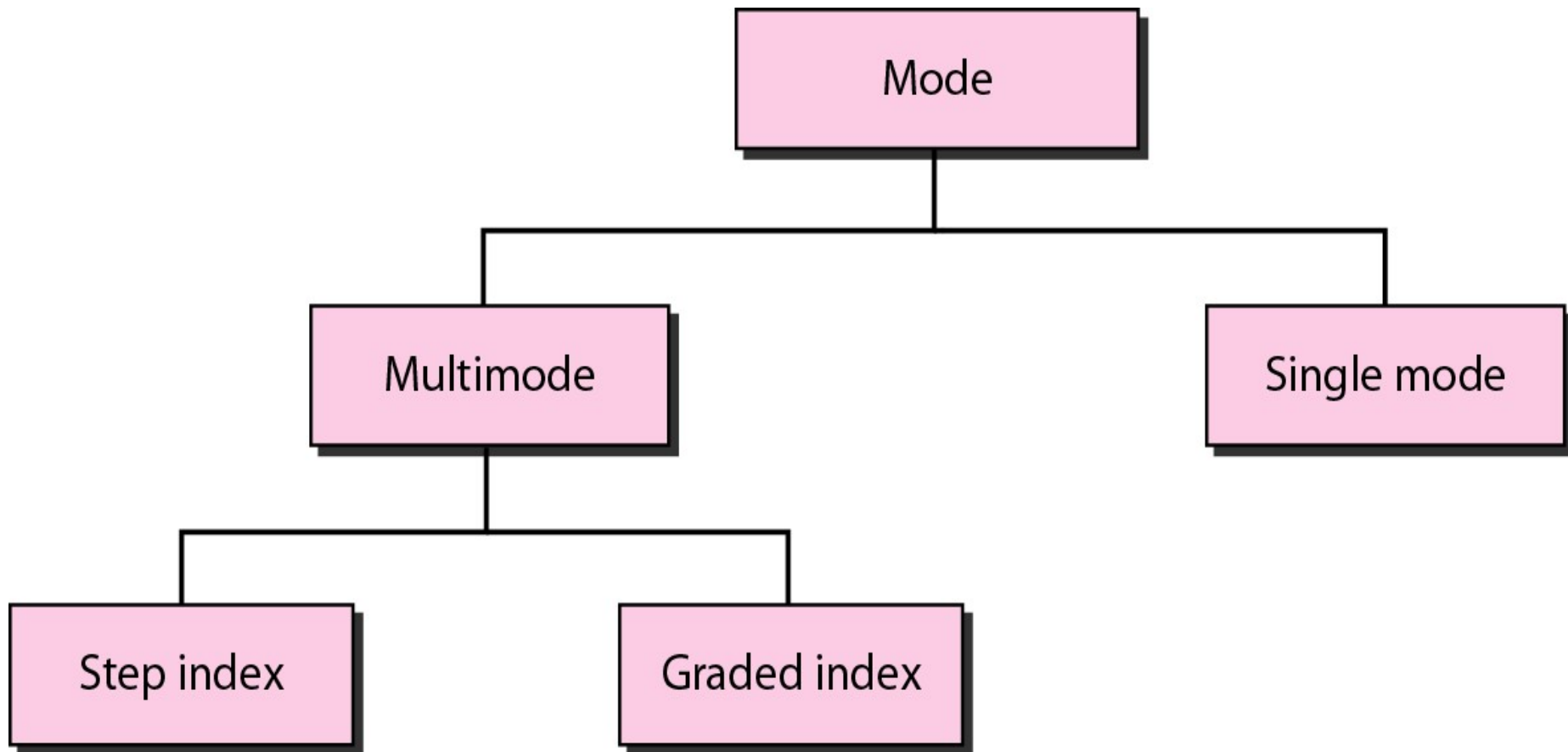


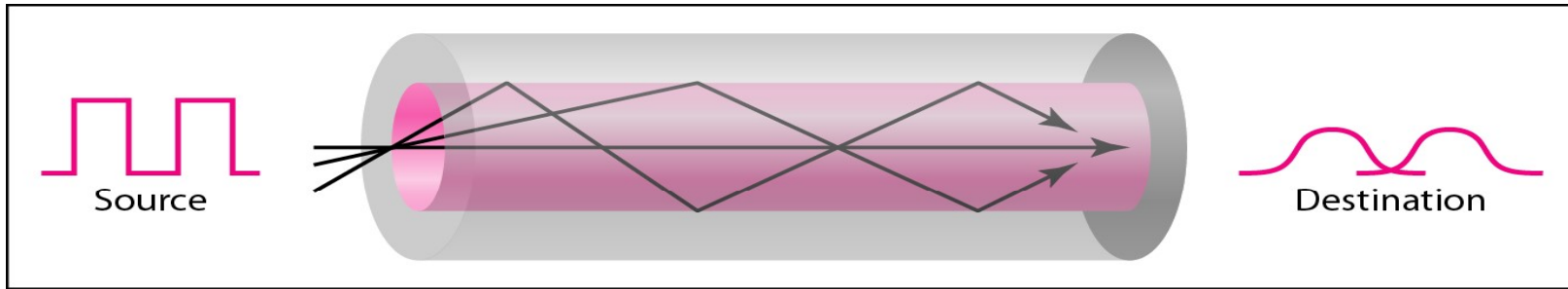
$i = \text{critical angle}$,
refraction



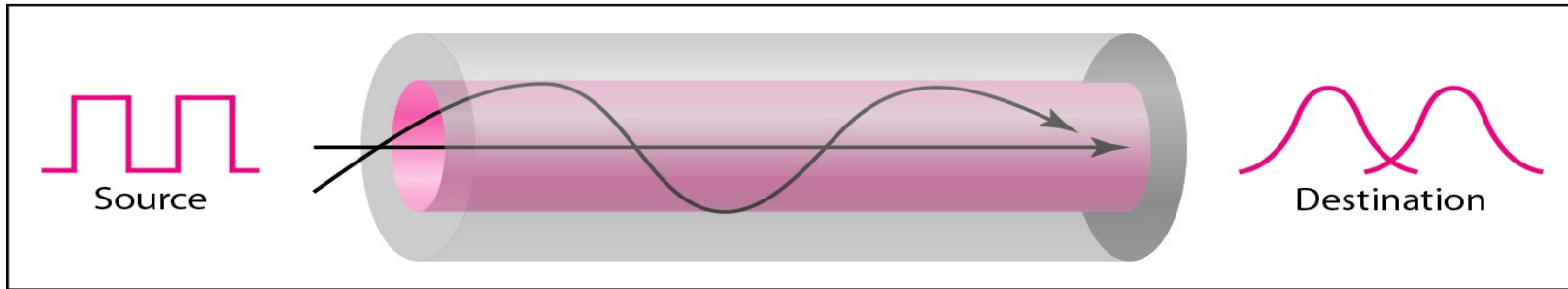
$i > \text{critical angle}$,
reflection



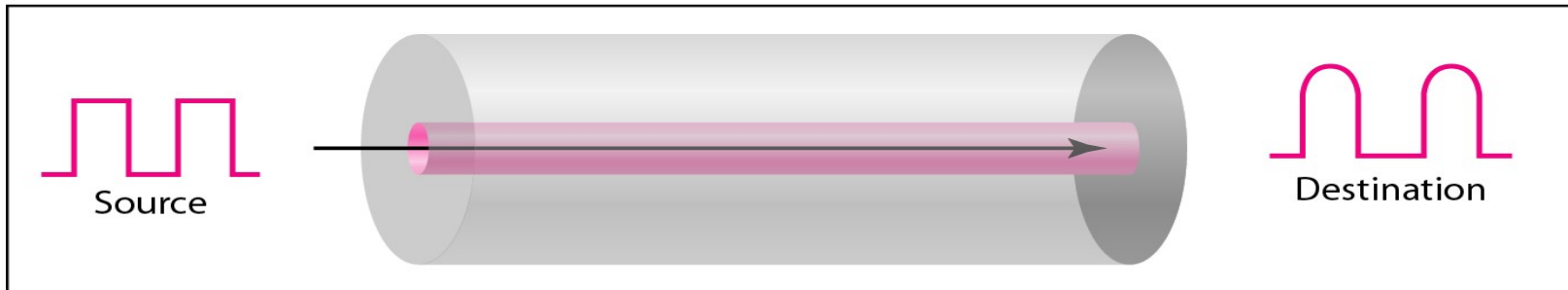




a. Multimode, step index



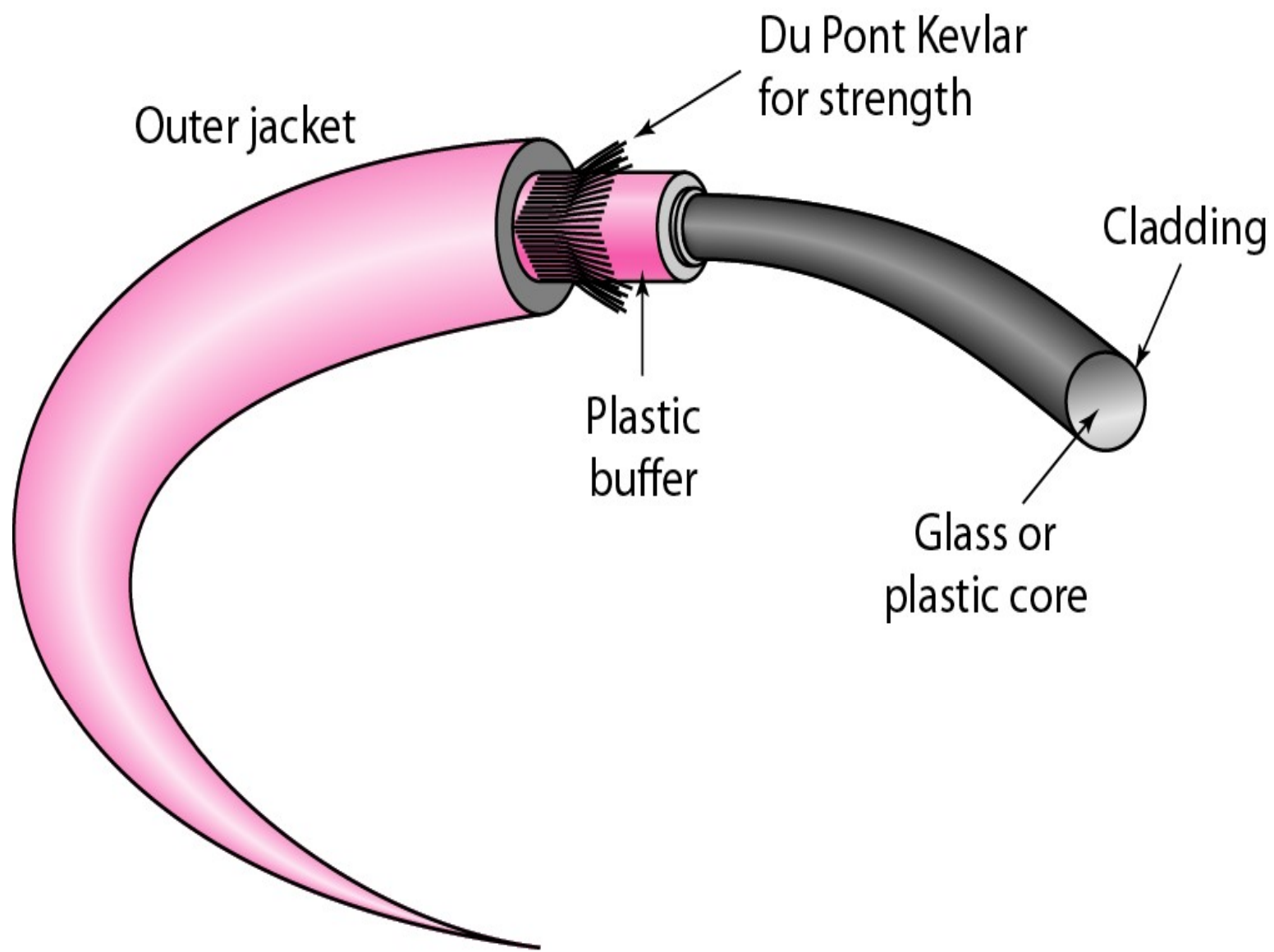
b. Multimode, graded index

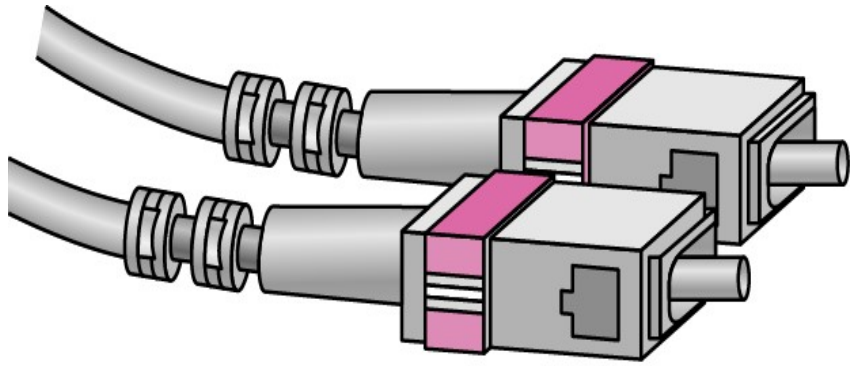


c. Single mode

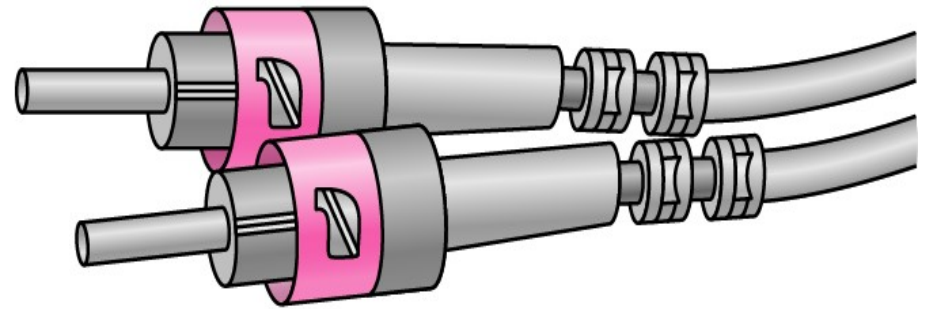
<i>Type</i>	<i>Core (μm)</i>	<i>Cladding (μm)</i>	<i>Mode</i>
50/125	50.0	125	Multimode, graded index
62.5/125	62.5	125	Multimode, graded index
100/125	100.0	125	Multimode, graded index
7/125	7.0	125	Single mode

Fiber construction

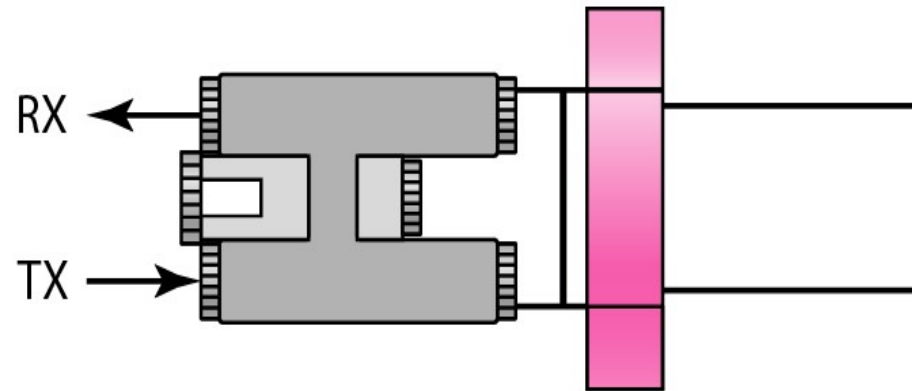




SC connector



ST connector



MT-RJ connector

Which of the following is not a guided media?

Fiber optical cable

Coaxial cable

Wireless LAN

Copper wire

Coaxial cable consists of _____ concentric copper conductors.

Optics possesses following properties _____

1. Free from electromagnetic interference

2. Less signal attenuation

3. Hard to tap

4. All the mentioned

Thank You