

Student name: Saahil.

Roll Number: 9540

1) Frequency Division Multiplexing: Here, we divide the bandwidth of a physical medium into smaller, independent frequency channels. FDM is commonly used in radio and television transmission.

Time Division Multiplexing: Instead of dividing the bandwidth into channels like FDM, TDM divides time. Each connection occupies a portion of time in the link, allowing for simultaneous transmission. Synchronous and statistical TDM are two variations of this method.

Wavelength Division Multiplexing: WDM increases the capacity of optical fibers by transmitting multiple optical signals simultaneously over a single fiber, each with a different wavelength of light. It's divided into Dense WDM & Coarse WDM, catering to different capacity requirements.

Code-Division Multiplexing: CDMA enables multiple users to transmit data simultaneously over a single channel by assigning each user a unique code to modulate their signal.

This technique provides increased capacity & some level of security against interception or jamming.

Space-Division Multiplexing: SDM exploits physical separation by using multiple antennas to create parallel communication channels. This method is commonly employed

in wireless communication system like MIMO technology, allows for multiple users to transmit data simultaneously without interference.
STOP.

2) FDM divides the bandwidth into frequency channels, allowing multiple signals to share the same media simultaneously but on different frequencies. TDM, on the other hand, divides the bandwidth into time slots, enabling different signals to take turns using the same frequency.
STOP.