**7. Explain the concept of Multi-Link Operation (MLO) and its impact on throughput and latency.**

* Multi-Link Operation (MLO) is a key feature introduced in Wi-Fi 7.
* It allows a device to connect to multiple bands (2.4 GHz, 5 GHz, 6 GHz) simultaneously.
* Traditionally, Wi-Fi devices use only one band at a time for a single connection.
* With MLO, data can be transmitted and received across multiple links at the same time.
* This parallel usage of multiple bands increases total throughput because more data flows at once.
* MLO reduces latency by selecting the fastest and least congested link dynamically.
* It improves reliability — if one band faces interference, the other links can still maintain the connection.
* MLO enables load balancing, distributing the traffic across multiple channels for smoother performance.
* It is especially useful for real-time applications like VR/AR, 4K/8K streaming, cloud gaming, and industrial controls.
* Overall, MLO makes Wi-Fi 7 much faster, more stable, and responsive compared to earlier Wi-Fi versions.