

**Q5. Compare and contrast Wi-Fi 6 and Wi-Fi 6E in terms of range, bandwidth, and interference.**

Feature	Wi-Fi 6	Wi-Fi 6E
Frequency	2.4 & 5 GHz	2.4, 5 & 6 GHz
Range	Longer (2.4 GHz)	Shorter (6 GHz attenuates more)
Bandwidth	Moderate	Wider (up to 1200 MHz)
Interference	More (crowded bands)	Less (clean 6 GHz space)

**Q6. What are the major innovations introduced in Wi-Fi 7 (802.11be)?**

- 4096-QAM: Higher data rate per symbol.
- Multi-Link Operation (MLO): Combine multiple bands for speed.
- 320 MHz Channels: Double bandwidth from Wi-Fi 6.
- 16x16 MU-MIMO: More spatial streams = better performance for more users.
- Multi-RU Allocation: Assign multiple non-contiguous RUs to a single device.
- Preamble Puncturing: Allows reuse of partially interfered channels.