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

* Wi-Fi 7 (802.11be) targets extremely high throughput, reaching up to 46 Gbps.
* Supports 320 MHz ultra-wide channels, doubling the maximum channel width from Wi-Fi 6.
* Introduces Multi-Link Operation (MLO), allowing devices to simultaneously use multiple bands (2.4 GHz, 5 GHz, 6 GHz) for faster and more reliable connections.
* Enhances 4096-QAM (4K-QAM) modulation, packing more data into each transmission compared to 1024-QAM in Wi-Fi 6.
* Improves OFDMA with Multi-RU (Resource Unit) assignments, allowing devices to transmit and receive on multiple chunks of spectrum at once.
* Introduces Puncturing, letting devices ignore small interference zones and still use the rest of the channel efficiently.
* Reduces latency significantly, ideal for applications like VR/AR, online gaming, and industrial automation.
* Supports more simultaneous users with better management of dense environments (stadiums, offices, airports).
* Maintains backward compatibility with Wi-Fi 6, 6E, and older Wi-Fi standards.