Q7. Describe the structure of an 802.11 PHY layer frame. What are its key components?

1. Preamble
   Used for synchronization and channel estimation
   Includes Short Training Field (STF), Long Training Field (LTF), and Signal field

2. PLCP Header
   Contains info about frame length, data rate, and modulation scheme

3. PSDU (Payload)
   Actual data from the MAC layer
   Includes MAC header, data, and FCS (error check)

Q8. What is the difference between OFDM and OFDMA?

OFDM - Orthogonal Frequency Division Multiplexing

Used in: Wi-Fi 802.11a/g/n/ac

One user at a time per channel. Divides the channel into many subcarriers

Transmits all data from one device over all subcarriers. Good for high data rates, but not optimized for multiple users

OFDMA - Orthogonal Frequency Division Multiple Access

Used in: Wi-Fi 6 (802.11ax)

Multiple users can share the same channel at the same time

Subcarriers are grouped into Resource Units and assigned to different users

Improves efficiency, reduces latency, especially in crowded networks