

**Q11. What are the types of PPDU? Explain the PPDU frame format across different Wi-Fi generations.**

Legacy PPDU → 802.11a/g – basic single-user

HT PPDU → 802.11n – adds MIMO, short GI

VHT PPDU → 802.11ac – adds MU-MIMO (DL), wide channels

HE PPDU → 802.11ax – adds OFDMA, MU-MIMO (UL/DL), efficiency

**Q12. How is the data rate calculated?**

Formula:

$$\text{Data Rate} = (\text{Bits per Subcarrier}) \times (\text{Number of Subcarriers}) \times (\text{Coding Rate}) \times (\text{Spatial Streams}) \div (\text{Symbol Duration})$$