

WiFi Training Program 2025

Name: Aswath S

University: VIT Vellore

Reg.No: 21BEC2188

Question-8:

What is the difference between OFDM and OFDMA?

Difference:

Feature	OFDM (Orthogonal Frequency Division Multiplexing)	OFDMA (Orthogonal Frequency Division Multiple Access)
User Access	One user per transmission	Multiple users simultaneously
Subcarrier Allocation	All subcarriers used by a single user	Subcarriers divided among users
Efficiency in High Load	Lower (wastes bandwidth during small transmissions)	Higher (optimized for many small transmissions)
Latency	Higher (due to queuing for each user)	Lower (parallel access reduces delay)
Uplink/Downlink	One user at a time for both	Supports multi-user uplink and downlink
Ideal Scenario	Light or single-user networks	Dense, multi-user environments
Wi-Fi Standards	802.11a / g / n / ac	802.11ax (Wi-Fi 6)
Cellular Usage	Not used	Used in LTE and 5G networks