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Wi-Fi Training Program 2025

Module 4

Question 9:

Brief about the Block ACK mechanism and its advantages

Solution:

Block ACK is an enhancement to the traditional **ACK mechanism** in **IEEE 802.11e and later standards (like 802.11n/ac/ax)**. Instead of sending an **ACK** for **each individual frame**, the receiver can acknowledge **multiple frames at once** using a single **Block ACK frame**.

Mechanism:

- **Sender** sends a **burst of data frames** (called an **A-MPDU** – Aggregated MAC Protocol Data Unit).
- **Receiver** stores all received frames and sends a **Block ACK**.
- The **Block ACK** is a **bitmap** indicating which frames were received correctly and which need retransmission.

Block ACK is a smarter, more efficient way to handle acknowledgments in Wi-Fi, especially when dealing with **multiple frames**, enabling **faster, more reliable, and more power-efficient** communication.