Name: Aswath S

College: Vellore Institute of Technology, Vellore

Reg.No: 21BEC2188

Wi-Fi Training Program 2025

Module 5

Question 3:

Discuss the benefits of Target Wake Time (TWT) in Wi-Fi 6 for IoT devices.

Solution:

Target Wake Time (TWT) is a significant feature added in Wi-Fi 6 (802.11ax) that offers a number of advantages for IoT (Internet of Things) devices, especially regarding power efficiency and network performance.

Advantages of TWT for IoT Devices:

Increased Battery Life

TWT enables devices to schedule when to wake up and talk to the access point. This allows devices to stay in sleep mode for longer, saving energy and prolonging battery life—particularly valuable for battery-operated IoT devices such as sensors and smart meters.

Less Network Congestion

By synchronizing wake periods for various devices, TWT diminishes concurrent usage of the wireless channel. This minimizes collisions and interference, leading to more predictable communication.

Enhanced Efficiency

TWT dictates that devices access the network only when needed. This results in optimal utilization of bandwidth and airtime, enhancing overall network efficiency.

Scalability

With TWT, Wi-Fi 6 networks are able to support more connected IoT devices without degrading performance. This makes it appropriate for smart homes, smart cities, and industrial IoT use cases.

Custom Scheduling

Various devices may have various wake-up schedules depending on their data requirements. This enables coexistence of low-power devices and devices that need more frequent communication.