Certified Wireless IoT Solutions Administrator(2025 Edition)

CWNP CWISA-103

Version Demo

Total Demo Questions: 8

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Topic Break Down

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QUESTION NO: 1

You are considering the implementation of a lab for testing wireless equipment. What is the primary benefit of such a lab? (Choose the single best answer.)

A. Provides for testing to determine how much RF exposure you can tolerate

B. Provides a failover environment for your production systems

C. Provides a way to repurpose old hardware that is not ready for final removal

D. Provides a safe environment in which to develop practical skills and knowledge of a technology and to test the technology

ANSWER: D

Explanation:

Provides a safe environment in which to develop practical skills and knowledge of a technology and to test the technology is correct because a dedicated wireless lab isolates experimentation from the production network. Wireless systems are sensitive to configuration choices, radio-frequency conditions, client behavior, security settings, roaming thresholds, and interoperability among access points, controllers, switches, and endpoint devices. A lab lets administrators reproduce scenarios, validate configurations, observe results, and practice troubleshooting without creating service interruptions or security risks for operational users. It also supports structured skill development: administrators can gain hands-on experience with installation, spectrum analysis, authentication, segmentation, firmware updates, and fault isolation before applying those techniques in a live deployment. CWNP training emphasizes practical understanding of RF and WLAN operation, for which controlled testing and measurement are essential. A test environment further enables repeatable evaluation of equipment and design changes, allowing a team to establish confidence in a solution before it is introduced into production. Guidance on establishing test plans and validating systems before operational deployment is also consistent with NIST’s security assessment and testing guidance. See CWNP and NIST SP 800-115, Technical Guide to Information Security Testing and Assessment.

QUESTION NO: 2

What kind of PoE device can be used to power a non-PoE connected object assuming PoE power is provided on the Ethernet cable?

A. PoE midspan injector

B. PoE endspan switch

C. PoE coupler

D. PoE splitter

ANSWER: D

Explanation:

PoE splitter is correct because it receives Ethernet carrying both Power over Ethernet and network data, then separates those functions for a device that does not natively support PoE. The splitter passes Ethernet data onward through its data output and converts the incoming PoE to the DC voltage and connector type required by the attached non-PoE device, such as an IoT gateway, camera, controller, or other endpoint. This makes it possible to use existing PoE cabling and a PoE-capable power source while powering equipment that lacks a PoE input port. The splitter must be selected to provide sufficient output wattage and the correct output voltage for the endpoint; it must also be compatible with the PoE standard and power class supplied by the upstream power sourcing equipment. IEEE 802.3 Power over Ethernet defines the delivery of power over balanced Ethernet cabling, while a splitter is the practical endpoint accessory that extracts that supplied power for a conventional DC-powered device. See the IEEE 802.3 standard overview and the CWNP CWISA certification information.

QUESTION NO: 3

What best describes the area covered or connected by a WWAN?

A. City

B. Campus

C. Region

D. In-building

ANSWER: C

Explanation:

Region is correct because a wireless wide area network is designed to provide connectivity across a broad geographic area rather than a single room, building, or localized enterprise site. In practical wireless IoT deployments, WWAN service is commonly supplied through public cellular infrastructure, such as LTE-M, NB-IoT, LTE, or 5G. Devices connect through geographically distributed carrier base stations and the carrier core network, allowing them to communicate while deployed across cities, rural areas, states, or broader service territories. The precise reachable area depends on the mobile operator's coverage footprint, roaming agreements, radio technology, spectrum, terrain, and available infrastructure; however, "region" most accurately expresses the wide-area scope associated with WWANs. This broad coverage makes WWAN appropriate for mobile and distributed IoT use cases, including fleet tracking, utility telemetry, remote monitoring, and connected field equipment, where devices must remain connected beyond the boundaries of a single campus or facility. The ITU describes wide-area public mobile networks as terrestrial IMT systems intended to support mobile connectivity over extensive service areas, while the GSMA provides technical resources for cellular IoT technologies used in these deployments. See [ITU-R M.2083] and [GSMA Mobile IoT Deployment Map].

QUESTION NO: 4

A newly installed IoT gateway has a valid IP address and default gateway. It can reach a public IP address, but it cannot connect to its cloud service when configured with the provider's hostname. What should be investigated first?

A. DNS name resolution

B. RF channel overlap

C. Gateway antenna gain

D. PoE power classification

ANSWER: A

Explanation:

DNS name resolution is correct because successful communication to a public IP address confirms basic IP routing, while failure only when using the service hostname indicates that the gateway may be unable to resolve that name. The administrator should verify the configured DNS servers, reachability to them, and any DNS filtering policy. Replacing the gateway, changing the radio channel, or increasing transmit power would not address a hostname-resolution failure.

QUESTION NO: 5

A wireless IoT gateway is connected to an antenna with 6 dBi gain. A regulatory-domain calculation shows that the planned transmit power would exceed the permitted EIRP. Which change directly reduces EIRP while retaining the same antenna?

A. Increase the antenna mounting height

B. Reduce the gateway transmit power

C. Add a second antenna to the gateway

D. Increase the wireless channel width

ANSWER: B

Explanation:

Reducing the gateway transmit power directly reduces EIRP. Effective isotropic radiated power is determined by the transmitter output power, antenna gain, and losses in the RF path. With the antenna unchanged, lowering conducted transmit power lowers the radiated power in the antenna's direction of maximum gain.

Increasing antenna height may change coverage but does not inherently reduce EIRP. Adding a second antenna can increase coverage or diversity but is not an EIRP control. Using a wider channel does not directly reduce the transmitter's radiated-power calculation.

QUESTION NO: 6

A LoRaWAN deployment serves water meters in a dense urban area. Several meters are heard by more than one gateway, and the network server receives multiple copies of the same uplink frame. What is the most appropriate network-server action?

A. Forward every received copy to the application as an independent meter reading

B. Deduplicate the uplink frames and retain reception metadata for network decisions

C. Require each end device to associate permanently with a single gateway

D. Disable gateways that receive duplicate uplink frames

ANSWER: B

Explanation:

The network server should deduplicate the received uplink frames and use the available reception metadata, such as signal quality, when selecting a gateway for a downlink if one is needed. LoRaWAN uses a star-of-stars architecture in which multiple gateways can receive the same end-device transmission and forward it to the network server. This gateway diversity improves reliability and does not mean that the application should receive multiple copies of the same sensor report.

Discarding all but the first gateway transmission before it reaches the network server would remove useful diversity information. Increasing the device transmit interval does not address duplicate reception, and assigning each device permanently to one gateway would conflict with the normal LoRaWAN gateway architecture.

QUESTION NO: 7

What metric is used to express a relative increase or decrease in signal strength?

A. W

B. dBm

C. dB

D. mW

ANSWER: C

Explanation:

dB is the correct metric because the decibel expresses a logarithmic ratio between two power levels. In wireless networking, it is used to state a relative gain or loss in signal strength, such as antenna gain, cable attenuation, free-space path loss, or a change in received power between two measurements. For power quantities, the relationship is calculated as $10 \times \log_{10}(P_2/P_1)$, so a positive dB value denotes an increase relative to a reference level and a negative value denotes a decrease. This logarithmic representation is useful because wireless signal levels can vary across very large ranges. For example, doubling power is approximately +3 dB, while halving power is approximately −3 dB. CWNP wireless terminology distinguishes dB, a unitless relative ratio, from absolute power measurements that use a defined reference. Understanding relative dB changes is essential for link-budget calculations and for evaluating the effect of RF components on a wireless signal. See the CWNP CWNA Study Guide and the ITU-R propagation reference for logarithmic RF and path-loss concepts.

QUESTION NO: 8

Which one of the following location tracking technologies is most energy efficient in typical implementations?

A. BLE Beacons

B. Cellular

C. GPS

D. Wi-Fi

ANSWER: A

Explanation:

BLE Beacons are the most energy-efficient choice in typical location-tracking deployments because Bluetooth Low Energy is designed for small, intermittent transmissions and long battery-powered operation. A beacon generally does not need to establish or maintain a continuous network connection. Instead, it periodically sends short Bluetooth advertising packets containing an identifier or limited metadata. Nearby receivers, such as mobile devices or installed BLE gateways, detect those packets and use their signal presence or received signal strength to support proximity, zone, or approximate location services. This broadcast-oriented design permits very low duty cycles: the beacon radio is active only briefly at configured advertising intervals, then returns to a low-power state. As a result, many BLE beacons can operate for months or years from a small coin-cell battery, depending on transmit power and advertising interval. Bluetooth SIG describes Bluetooth Low Energy as a wireless technology optimized for very low power consumption and notes its suitability for battery-operated devices: Bluetooth Low Energy overview. Bluetooth Core Specification documentation also defines the low-energy advertising mechanisms that enable devices such as beacons to transmit discoverable information without a persistent connection: Bluetooth Core Specification.