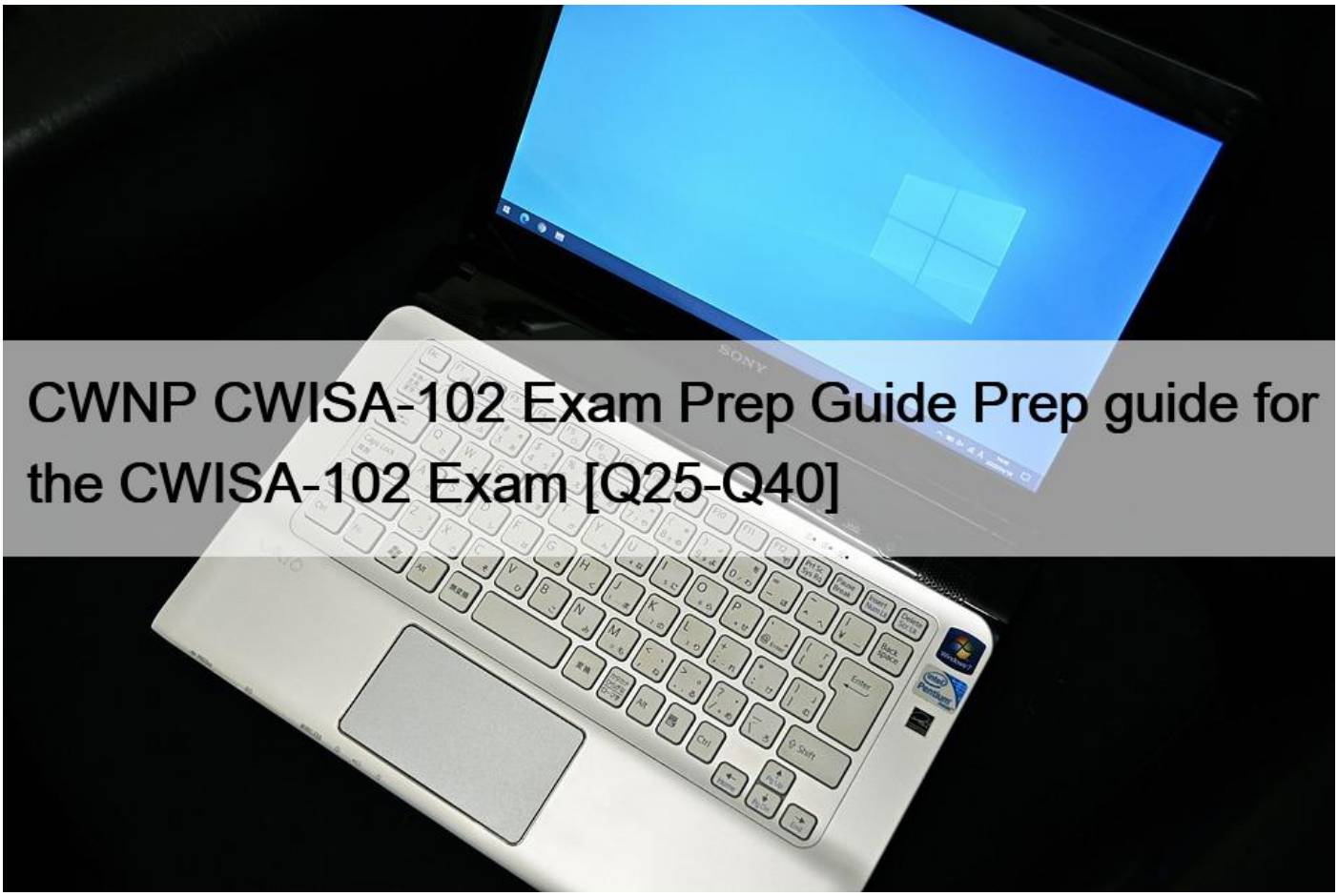
CWNP CWISA-102 Exam Prep Guide Prep guide for the CWISA-102 Exam [Q25-Q40



CWNP CWISA-102 Exam Prep Guide: Prep guide for the CWISA-102 Exam 2024 New Preparation Guide of CWNP CWISA-102 Exam QUESTION 25

What is an important feature of the PHP scripting language?
* It only works on Linux systems
* It only works embedded in web applications
* It only works from the command line
* It works in web applications and at the command line

PHP’s Cross-Platform Nature: PHP originated for server-side web development, but also has a command-line interface (CLI) enabling its use for scripts and automation tasks.

Other Options:

Some languages are OS-specific (but less frequent with modern scripting languages) .

Many languages work in web or command line, not both like PHP.

References:

PHP (Introduction): Overviews mentioning its dual role in server-side web applications and as a general-purpose scripting language.

PHP CLI: Documentation on the command-line interface for PHP.

QUESTION 26

What is defined as the weakening of signal amplitude as the signal passes through a medium?
* Reflection
* Scattering
* Diffraction
* Attenuation

QUESTION 27

What is an advantage of an overlay monitoring system for wireless networks as opposed to an Integrated monitoring system?
* An overlay solution does not require power provisioning
* An overlay solution is less expensive than an integrated solution
* An overlay solution collects less data so that reporting is more efficient
* An overlay solution functions without disrupting services provided by the wireless network

Overlay vs. Integrated Monitoring:

Overlay: A separate monitoring system independent of the primary wireless infrastructure.

Integrated: Monitoring functions built into wireless access points or controllers.

Overlay Advantage: Since the overlay system is separate, it doesn’t add overhead or complexity to the core network, avoiding potential disruption of wireless services.

QUESTION 28

Which one of the following is NOT a typical Smart City application?
* City-wide municipal Wi-Fi
* Pollution monitoring
* Demand-based road tolling
* Self-driving ride sharing

Smart City Focus: Smart city initiatives mainly address infrastructure, environmental monitoring, and optimization of public services.

Ride-sharing Context: While self-driving technology could contribute to future smart city transportation, it’s primarily a private-sector innovation, not a core municipal service like the other options.

Typical Smart City Applications:

Wi-Fi: Provides public internet access, enabling data collection

Pollution Monitoring: Tracks air/water quality for environmental management.

Demand-based Tolling: Adjusts pricing for traffic management.

References:

Smart City Examples: Case studies showcasing common application areas (infrastructure, environment, utilities).

Autonomous Vehicles and Smart Cities: Discussions of the potential interplay but emphasize the still-developing nature of self-driving tech.

QUESTION 29

What is an important acceptance agreement to achieve in the final customer meeting for a wireless IoT deployment?
* Stakeholder acceptance
* Support for wearable IoT solutions
* Scope definition
* Power supply provisioning

Successful Deployment Depends on Buy-In: A final customer meeting signifies the handover phase. Achieving stakeholder agreement ensures everyone impacted by the solution has a voice and feels their concerns are addressed.

Sign-Off and Formal Acceptance: Stakeholders often need to formally “sign-off” on a project’s completion, indicating satisfaction and readiness for operational use.

Other Options: While Important, Not the Primary Goal:

Scope definition typically happens much earlier

Solutions may or may not include wearables

Power supply should already be planned

References:

Project Management Methodologies: Emphasis on stakeholder involvement & acceptance criteria.

ITIL (Change Management): Materials on getting approval before a system goes live.

QUESTION 30

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.)
* Provides for testing to determine how much RF exposure you can tolerate
* Provides a failover environment for your production systems
* Provides a way to repurpose old hardware that is not ready for final removal
* Provides a safe environment in which to develop practical skills and knowledge of a technology and to test the technology

Lab Purpose: Wireless testing labs offer controlled settings to:

Skill Development: Hone practical understanding of wireless technologies without impacting production environments.

Experimentation: Safely test different configurations, compatibility, and potential issues.

Troubleshooting: Isolate problems, test solutions, and understand how equipment behaves in various scenarios.

Other Benefits (While not the primary benefit):

Learning Environment: Ideal for structured training and exploration.

Evaluation: Compare hardware performance before deployment.

References

Benefits of IT Labs: Can be extended from wireless to broader IT experimentation and learning. (Articles on this topic are readily available)

QUESTION 31

What is a valid reason to continue using older wireless networking technologies?
* The desire for faster communications
* The desire to support internal antennas
* The desire to use older encryption processes, which are faster regardless of the CPU implemented
* A requirement to support legacy devices

Legacy Support: The primary reason to continue using older wireless technologies is the need to connect with devices that don’t support newer standards (e.g., old sensors or equipment).

Other Reasons (Not as Strong):

Cost: Replacing legacy devices can be expensive.

Reliability: Some legacy technologies might be well-proven in specific settings.

QUESTION 32

What advantage is provided by using an NTP server within a wireless solution architecture?
* It provides for semi-automatic IP addressing in wireless sensor networks
* It ensures security through AES encryption
* It ensures uniform, synchronized time among devices
* It provides for name resolution for older network devices

Importance of Time Sync in IoT: Coordinated actions, accurate data analysis, and event logging in wireless IoT solutions often rely on devices having a shared time reference.

NTP’s Role: Network Time Protocol (NTP) enables devices to synchronize their clocks against a reliable time source (NTP server), ensuring consistency across the network.

Why Other Options Don’t Fit:

IP Addressing: Usually handled by DHCP, not NTP.

Encryption: SSL/TLS secure data in transit, not related to timekeeping.

Name Resolution: Purpose of DNS, not NTP.

References:

Network Time Protocol (NTP): How it works and its importance in distributed systems.

IoT Time Synchronization Challenges: Articles highlighting the need for accuracy in sensor networks and similar use cases.

QUESTION 33

You have been asked to locate an intermittent RF interference source. What tool will assist best in locating the generating device?
* NMAP
* WinPCAP
* Spectrum analyzer
* Protocol analyzer
isualizing RF Interference: Spectrum analyzers display radio frequencies across a range, showing signal strength and potential interference sources. This is crucial for identifying non-Wi-Fi devices that might be disrupting your wireless solution.

Other Tools Have Limitations:

NMAP: Network mapper, focused on discovering devices, not RF analysis

WinPCAP: Packet capture software, helpful but doesn’t directly display the RF spectrum.

Protocol Analyzer: Analyzes network traffic, but won’t pinpoint physical layer interference.

References:

Spectrum Analyzers: How they work and common use cases in RF troubleshooting.

Wireless Interference Types: Resources that discuss non-Wi-Fi interference sources (microwaves, cordless phones, etc.)

QUESTION 34

What consideration is found in PtMP systems that is not found in PtP systems?
* Interference avoidance
* SINR optimization
* Airtime management
* Frequency selection
PtMP (Point-to-Multipoint): A single access point (AP) communicates with multiple client devices. This means the AP needs to manage how the available airtime is shared among those clients.

Airtime Fairness: Mechanisms are needed to ensure that:

Each client gets a fair chance to communicate

High-priority traffic isn’t starved by low-priority traffic

PtP (Point-to-Point): A dedicated link only has two devices, eliminating the need for complex airtime management.

Considerations in Both: While interference, SINR, and frequency selection are important in both PtMP and PtP systems, the need for airtime management is unique to the multipoint scenario.

References:

Wireless Network Topologies (PtP vs. PtMP): References of the differences in how communication is managed in each scenario.

TDMA (Time Division Multiple Access): A common airtime sharing method used in PtMP systems.

QUESTION 35

How is ASK modulation different from FSK modulation?
* ASK varies the amplitude of the signal while FSK shifts its frequency
* FSK is more sensitive to noise than ASK
* ASK does not work at high frequencies
* ASK can carry more data than FSK

Key Modulation Differences:

ASK (Amplitude Shift Keying): Digital data is represented by changes in the amplitude (strength) of a carrier wave.

FSK (Frequency Shift Keying): Digital data is represented by changes in the frequency of a carrier wave.

References

ASK: https://en.wikipedia.org/wiki/Amplitude-shift_keying

FSK: https://en.wikipedia.org/wiki/Frequency-shift_keying

QUESTION 36

What scripting language works natively inside of nearly all modern Web browsers and may also be used for automation within some wireless solutions, such as Node-RED?
* PHP
* Python
* JavaScript
* R

Browser Ubiquity: JavaScript has a native runtime environment within almost every modern web browser, making it the ‘built-in’ scripting language for web-based interfaces.

Node-RED: This IoT flow-based programming tool specifically uses JavaScript for its logic and automation functions.

Other Languages:

PHP: Primarily server-side for web applications

Python: Versatile language, used in some back-end IoT functions but not natively in browsers R: Statistical and data analysis, not typically embedded in wireless solutions References:

JavaScript (Browser Compatibility): Documentation of its near-universal support Node-RED (Programming Model): Descriptions of how it uses JavaScript for node logic.

QUESTION 37

Which one of the following items has driven large serving 5- to 18-year-old students?
* Cloud-based applications
* Online torrent sites
* Streaming music
* Wearable body sensors

Cloud-based applications drive bandwidth usage: Applications like Google Suite, Microsoft 365, and video conferencing (Zoom, Teams) are commonly used in educational settings. These rely on cloud servers, requiring significant downloads and uploads.

Shift towards online learning: More schools are utilizing online learning platforms and resources, further increasing their dependence on cloud-based solutions.

Streaming, torrents, wearables less impactful: Streaming music and torrent sites can contribute, but their impact is generally less significant. Wearables in education are still niche despite their potential.

References

Trends in education technology: Reports on the rise of cloud-based learning platforms in schools.

[Example: Project Tomorrow Speak Up Research Project on Digital Learning] (https://tomorrow.org/speakup/) Network usage studies in schools: Research on bandwidth usage patterns can confirm the primary drivers of traffic in educational settings.

QUESTION 38

What is the primary difference between LoRa and LoRaWAN
* LoRa uses RF and LoRaWAN uses light-based communications
* LoRa is the modulation method (using CSS modulation at the Physical Layer) and LoRaWAN is the MAC sub-layer of the Data Link layer
* LoRa is the Physical Layer and LoRaWAN is the Transport Layer
* LoRa is used for communicating across the Internet and LoRaWAN is used only on the local link

LoRa: This refers to the underlying radio modulation technique using Chirp Spread Spectrum (CSS). It defines how data is physically encoded onto the wireless signal.

LoRaWAN: This is the network protocol built on top of LoRa. It manages device communication, network topology, and aspects like security. It operates at the MAC sublayer of the Data Link layer (Layer 2) of the OSI model LoRa vs. LoRaWAN: Key takeaway is that LoRa is the physical layer technology, while LoRaWAN adds the networking layer for management.

References:

LoRa Modulation: Technical explanations of Chirp Spread Spectrum (CSS).

LoRaWAN Specification: Official documentation detailing the network architecture and MAC layer functions.

OSI Model: Descriptions of the Data Link layer and its role in networking.

QUESTION 39

You must ensure proper security controls are in place for a wireless solution. The solution allows for the use of groups to grant access to resources and capabilities. What is the term used to describe a situation where an individual is granted more access than required because of inclusion in a group?
* Improper delegation

* Privilege escalation
* Privilege creep
* Improper grouping

Privilege Creep Defined: Gradual accumulation of excessive permissions over time, often due to users changing roles or access needs not being adjusted accordingly.

Other Terms:

Privilege Escalation: A malicious act of obtaining higher-than-authorized access.

Improper Delegation/Grouping: Faulty permission assignment, but not the gradual accretion aspect.

References:

Principle of Least Privilege: Security best practice emphasizing the need to minimize access to only what’s necessary.

Access Control Models: Discussions of how privilege creep can violate security principles.

QUESTION 40

In a wireless link, as the signal strength decreases, what else may decrease?

* Noise
* Interference
* Latency
* Transmission speeds

Signal Strength and Data Rate: In wireless links, weaker signal strength often directly correlates to reduced transmission speeds. Modern wireless technologies use adaptive modulation and coding, sacrificing speed for reliability when signals become weaker.

Noise and Interference: While these can impact performance, they don’t inherently decrease simply because signal strength drops.

Latency: Latency can be affected by poor signal, but its primary drivers are distance and network congestion.

References:

Wireless Signal Strength vs. Speed: Articles explaining the relationship and how adaptive modulation works.

Modulation and Coding Schemes (MCS): Technical descriptions of how Wi-Fi and other wireless technologies adjust speeds based on signal quality.