Cisco Certified Network Professional Practice Test (Sample)

Study Guide

Everything you need from our exam experts!

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Introduction

Preparing for a certification exam can feel overwhelming, but with the right tools, it becomes an opportunity to build confidence, sharpen your skills, and move one step closer to your goals. At Examzify, we believe that effective exam preparation isn't just about memorization, it's about understanding the material, identifying knowledge gaps, and building the test-taking strategies that lead to success.

This guide was designed to help you do exactly that.

Whether you're preparing for a licensing exam, professional certification, or entry-level qualification, this book offers structured practice to reinforce key concepts. You'll find a wide range of multiple-choice questions, each followed by clear explanations to help you understand not just the right answer, but why it's correct.

The content in this guide is based on real-world exam objectives and aligned with the types of questions and topics commonly found on official tests. It's ideal for learners who want to:

- **Practice answering questions under realistic conditions,**
- **Improve accuracy and speed,**
- **Review explanations to strengthen weak areas, and**
- **Approach the exam with greater confidence.**

We recommend using this book not as a stand-alone study tool, but alongside other resources like flashcards, textbooks, or hands-on training. For best results, we recommend working through each question, reflecting on the explanation provided, and revisiting the topics that challenge you most.

Remember: successful test preparation isn't about getting every question right the first time, it's about learning from your mistakes and improving over time. Stay focused, trust the process, and know that every page you turn brings you closer to success.

Let's begin.

How to Use This Guide

This guide is designed to help you study more effectively and approach your exam with confidence. Whether you're reviewing for the first time or doing a final refresh, here’s how to get the most out of your Examzify study guide:

1. Start with a Diagnostic Review

Skim through the questions to get a sense of what you know and what you need to focus on. Your goal is to identify knowledge gaps early.

2. Study in Short, Focused Sessions

Break your study time into manageable blocks (e.g. 30 – 45 minutes). Review a handful of questions, reflect on the explanations.

3. Learn from the Explanations

After answering a question, always read the explanation, even if you got it right. It reinforces key points, corrects misunderstandings, and teaches subtle distinctions between similar answers.

4. Track Your Progress

Use bookmarks or notes (if reading digitally) to mark difficult questions. Revisit these regularly and track improvements over time.

5. Simulate the Real Exam

Once you're comfortable, try taking a full set of questions without pausing. Set a timer and simulate test-day conditions to build confidence and time management skills.

6. Repeat and Review

Don’t just study once, repetition builds retention. Re-attempt questions after a few days and revisit explanations to reinforce learning. Pair this guide with other Examzify tools like flashcards, and digital practice tests to strengthen your preparation across formats.

There’s no single right way to study, but consistent, thoughtful effort always wins. Use this guide flexibly, adapt the tips above to fit your pace and learning style. You've got this!

Questions

1. What type of traffic cannot be mirrored by RSPAN?

A. STP BPDUs

B. ICMP packets

C. TCP traffic

D. UDP traffic

2. What is a criterion for the MST region revision number?

A. Must be different for every instance

B. Should remain constant at zero

C. Can be between 0 to 65,535 and must match across switches

D. Must be set to the number of VLANs in the region

3. In a VLAN configuration, what does a tagged frame indicate?

A. It is unassociated with any VLAN

B. It belongs to a specific VLAN

C. It is dropped due to a VLAN mismatch

D. It is sent to the native VLAN

4. What does route redistribution allow in networking?

A. Sharing routing information between different protocols

B. Reducing routing tables

C. Ensuring data integrity during transmission

D. Increasing router speed

5. How often are BPDUs sent out in RSTP?

A. At startup only

B. Every minute

C. Every port at hello interval

D. Only during state changes

6. Which of the following is a benefit of using tunneling?

A. Increased security for VPNs

B. Avoidance of network congestion

C. Lower costs compared to MPLS or P2P

D. Guaranteed data delivery

7. What does the command "show ip cef [prefix-ip prefix mask] [longer-prefixes] [detail]" do?

A. Displays the VLAN configuration details

B. Retrieves detailed Layer 3 routing information

C. Shows the state of the FIB entries in detail

D. Monitors active NAT sessions

8. What is the purpose of the command "radius-server host"?

A. To configure a local user

B. To configure a RADIUS server

C. To clear RADIUS session

D. To view RADIUS statistics

9. What command is used to create or configure a Switched Virtual Interface (SVI)?

A. enable routing

B. interface vlan vlan-id

C. show ip cef detail

D. switchport autostate

10. What is the purpose of a DHCP snooping untrusted port?

A. Allows access for DHCP servers

B. Standard user ports that do not allow DHCP servers

C. Trusted ports for high-security environments

D. Ports designated for VLAN management

Answers

1. A
2. C
3. B
4. A
5. C
6. C
7. C
8. B
9. B
10. B

Explanations

1. What type of traffic cannot be mirrored by RSPAN?

A. STP BPDUs

B. ICMP packets

C. TCP traffic

D. UDP traffic

RSPAN, or Remote Switched Port Analyzer, is a Cisco technology used to extend port mirroring capabilities across multiple switches in a network. It allows for the monitoring of traffic from a source port on a switch and sends that mirrored traffic to a destination port on another switch. However, there are certain types of traffic that are not eligible for mirroring due to the potential for causing network issues or because they do not operate in a way that allows for effective mirroring. In this case, Bridge Protocol Data Units (BPDUs) used in Spanning Tree Protocol (STP) are a type of control traffic that is critical for the functioning of the Spanning Tree algorithm. These messages help to prevent loops in the network topology and ensure that the network remains stable. When RSPAN is configured, BPDUs are not mirrored to maintain the integrity and operation of the Spanning Tree. If they were mirrored, it could lead to the risk of creating loops or misconfigurations across the broader network, which could have detrimental effects. Other types of traffic like ICMP (Internet Control Message Protocol), TCP (Transmission Control Protocol), and UDP (User Datagram Protocol) packets are not subjected to such restrictions and can be mirrored by RSPAN, allowing network

2. What is a criterion for the MST region revision number?

A. Must be different for every instance

B. Should remain constant at zero

C. Can be between 0 to 65,535 and must match across switches

D. Must be set to the number of VLANs in the region

The correct answer highlights that the MST (Multiple Spanning Tree) region revision number can range from 0 to 65,535 and must be identical across all switches participating in the same MST region. This is because the revision number is used to identify and manage the configuration of the MST region. When changes are made to the region's topology or configuration, the revision number must be incremented. This ensures that all switches in the MST region are aware of the latest topology and can maintain network stability and loop-free operation. If the revision numbers do not match, switches may become isolated or form unintended topologies, leading to network issues. The criterion for MST configuration is crucial for ensuring all switches operate cohesively and efficiently within the same region, fostering the proper exchange of configuration information and maintaining optimal spanning tree behavior.

3. In a VLAN configuration, what does a tagged frame indicate?

A. It is unassociated with any VLAN

B. It belongs to a specific VLAN

C. It is dropped due to a VLAN mismatch

D. It is sent to the native VLAN

A tagged frame in a VLAN configuration indicates that it belongs to a specific VLAN. This tagging process is crucial for the proper operation of VLANs, as it allows network devices to identify which VLAN the frame is associated with as it traverses through switches and routers. Tagging is done using the IEEE 802.1Q standard, which adds a VLAN tag to the Ethernet frame, containing the VLAN ID. When a switch receives a tagged frame, it examines the VLAN ID specified in the tag to determine how to process the frame. By doing so, the switch can maintain the separation of different VLANs within the same physical network infrastructure. This capability is essential for scenarios where multiple VLANs share the same network links, preventing cross-traffic between VLANs and ensuring that each VLAN's broadcast traffic remains confined to its own group. In contrast, untagged frames (not belonging to any VLAN) are treated differently; they will usually be placed in the switch's default or native VLAN unless configured otherwise. Tagged frames provide the necessary information for properly managing network traffic in a multi-VLAN environment, which is vital for effective network segmentation and security.

4. What does route redistribution allow in networking?

A. Sharing routing information between different protocols

B. Reducing routing tables

C. Ensuring data integrity during transmission

D. Increasing router speed

Route redistribution is a crucial function in networking that enables the sharing of routing information between different routing protocols. In a network, it's common to use multiple routing protocols, such as OSPF (Open Shortest Path First), EIGRP (Enhanced Interior Gateway Routing Protocol), and RIP (Routing Information Protocol). Each protocol may have its own methodology for determining the best paths for data transmission. By implementing route redistribution, network engineers can configure routers to share routes learned through one protocol with another. This ensures that all parts of the network have a consistent understanding of available paths, enabling seamless communication and connectivity. For instance, if a router learns about a route via EIGRP, it can redistribute that information so that OSPF routing devices can also use that route for making forwarding decisions. This functionality is particularly important in complex networks that may require different protocols for different segments or for different performance needs. It allows for greater flexibility and improved scalability of the overall network architecture, ultimately enhancing the robustness and reliability of data transmission across the varied environments. The other options mentioned refer to benefits that might arise from a well-implemented routing strategy but do not directly define what route redistribution itself does. Reducing routing tables, ensuring data integrity, and increasing router

5. How often are BPDUs sent out in RSTP?

A. At startup only

B. Every minute

C. Every port at hello interval

D. Only during state changes

BPDUs, or Bridge Protocol Data Units, are sent as part of the Rapid Spanning Tree Protocol (RSTP) operation to maintain a loop-free network topology. In RSTP, BPDUs are transmitted on every port at the hello interval. This means that regularly, at intervals defined by the network configuration, the switches exchange BPDUs to ensure they have the most current information about the network topology. This frequent sending of BPDUs at the hello interval enables RSTP to quickly detect changes in the network, such as the addition or removal of devices, and to adapt the topology accordingly. It plays a crucial role in ensuring rapid convergence, which is one of the key improvements over the original Spanning Tree Protocol (STP). Therefore, the understanding that BPDUs are sent at each hello interval reflects the proactive nature of RSTP in maintaining stable and efficient network operations.

6. Which of the following is a benefit of using tunneling?

A. Increased security for VPNs

B. Avoidance of network congestion

C. Lower costs compared to MPLS or P2P

D. Guaranteed data delivery

Tunneling offers several advantages, particularly in the context of virtual private networks (VPNs). While many choices present legitimate benefits associated with tunneling, one of the most notable advantages is its ability to provide a more cost-effective solution compared to alternative methods such as MPLS (Multiprotocol Label Switching) or point-to-point (P2P) connections. By encapsulating packets within a secure tunnel, organizations can leverage existing infrastructure, such as the public internet, to connect remote users or sites without needing dedicated links. This reduces overall costs because organizations do not have to invest in expensive leased lines or specialized equipment to establish secure connections. The use of tunneling protocols allows for flexibility in network design and can lead to significant savings without compromising the quality of the data transfer. The other options present benefits that might be associated with tunneling, but they are not uniquely or primarily tied to the concept of tunneling itself. For instance, while increased security is an essential feature of VPNs utilizing tunneling protocols, it is not solely a benefit of tunneling but rather a defining characteristic of secure remote access technologies overall. Similarly, avoidance of network congestion is more about network management practices than the tunneling itself, and guaranteed data delivery is typically not a feature

7. What does the command "show ip cef [prefix-ip prefix mask] [longer-prefixes] [detail]" do?

A. Displays the VLAN configuration details

B. Retrieves detailed Layer 3 routing information

C. Shows the state of the FIB entries in detail

D. Monitors active NAT sessions

The command "show ip cef [prefix-ip prefix mask] [longer-prefixes] [detail]" is specifically used to display detailed information about the Forwarding Information Base (FIB) entries in Cisco devices that utilize Cisco Express Forwarding (CEF). CEF is a critical component for efficient packet forwarding in high-performance routers, enabling them to make quick forwarding decisions based on the already computed FIB. When this command is executed, it can provide insights into how traffic destined for a specific IP prefix is handled. It details the paths that packets will take through the network, including information about the next-hop router, interface information, and potentially any associated metrics. Particularly, the 'detail' option will present comprehensive data about the FIB entries, such as the associated interfaces, route sources, and more. The other options do not align with the functionality of this command. While VLAN configurations, Layer 3 routing information, and active NAT sessions are important networking concepts, they fall outside the purview of what the "show ip cef" command specifically addresses. Thus, the core focus of the command on FIB entries is what validates the answer provided.

8. What is the purpose of the command "radius-server host"?

A. To configure a local user

B. To configure a RADIUS server

C. To clear RADIUS session

D. To view RADIUS statistics

The command "radius-server host" is specifically used to configure a RADIUS (Remote Authentication Dial-In User Service) server within a network device, typically a router or switch. This command allows the device to communicate with a designated RADIUS server for authentication, authorization, and accounting (AAA) purposes. When implementing network security, it's essential to ensure that devices can verify the identity of users attempting to gain access, and the "radius-server host" command plays a critical role in establishing that connection with the RADIUS server. Using this command, network administrators can specify the IP address of the RADIUS server and configure additional parameters, such as the shared secret used for secure communications. This setup is vital for centralized user management and can help streamline administration across multiple devices, improve security protocols, and simplify the authentication process for users. In contrast, the other options do not pertain directly to the RADIUS server configuration: configuring a local user pertains to user management on the device itself; clearing RADIUS sessions deals with managing current authentication sessions rather than establishing them; and viewing RADIUS statistics relates to monitoring session data and performance metrics, which are secondary functions of network management.

9. What command is used to create or configure a Switched Virtual Interface (SVI)?

A. enable routing

B. interface vlan vlan-id

C. show ip cef detail

D. switchport autostate

The command used to create or configure a Switched Virtual Interface (SVI) is "interface vlan vlan-id." This command allows a network administrator to specify a particular VLAN by its identification number (vlan-id) and to set up an interface associated with that VLAN. By defining the SVI, the administrator can configure various parameters such as the IP address and other settings that enable communication for that VLAN. This command is essential for facilitating Layer 3 communication for devices on the same VLAN, effectively bridging the gap between the data link layer and the network layer. SVIs are also crucial in environments where inter-VLAN routing is implemented, allowing for traffic to be routed between VLANs. The other options do not serve the purpose of configuring an SVI. The command about enabling routing pertains more to the overall functionality of the device rather than the specific configuration of an SVI. "Show ip cef detail" is a diagnostic command that displays information about the Cisco Express Forwarding (CEF) table and does not configure anything. Finally, "switchport autostate" deals with enabling or disabling a switch port's operational state based on VLAN membership but does not create or configure an SVI.

10. What is the purpose of a DHCP snooping untrusted port?

A. Allows access for DHCP servers

B. Standard user ports that do not allow DHCP servers

C. Trusted ports for high-security environments

D. Ports designated for VLAN management

A DHCP snooping untrusted port plays a crucial role in the security framework of a network utilizing Dynamic Host Configuration Protocol (DHCP). The primary purpose of designating a port as untrusted is to enhance network security by controlling which devices can respond to DHCP requests. In a network where there are potentially malicious devices, only trusted ports, which are typically connected to legitimate DHCP servers, can send DHCP offers and acknowledgments. Untrusted ports, on the other hand, are typically connected to end-user devices that should not be providing DHCP services. By marking these ports as untrusted, the switch prevents any DHCP traffic originating from these ports, thus reducing the risk of rogue DHCP servers distributing incorrect IP addresses or network configurations to clients on the network. This level of control is critical in preventing a wide array of attacks, such as DHCP spoofing, where an unauthorized device impersonates a legitimate DHCP server. Essentially, untrusted ports act as a barrier, ensuring that only specific, secure devices can manage DHCP traffic within the network. While other options may hint at certain aspects of network configurations, they do not accurately capture the essence and function of the untrusted port within the framework of DHCP snooping.

Next Steps

Congratulations on reaching the final section of this guide. You've taken a meaningful step toward passing your certification exam and advancing your career.

As you continue preparing, remember that consistent practice, review, and self-reflection are key to success. Make time to revisit difficult topics, simulate exam conditions, and track your progress along the way.

If you need help, have suggestions, or want to share feedback, we'd love to hear from you. Reach out to our team at hello@examzify.com.

Or visit your dedicated course page for more study tools and resources:

https://ccnp.examzify.com

We wish you the very best on your exam journey. You've got this!