Advanced Router Tech 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. **In migrating to OSPFv2 interface configuration, which command configures the area number assigned to an interface?**

   A. ospf area number

   B. area area-number ip ospf

   C. ip ospf command in interface configuration mode

   D. interface area-number ospf

2. **What is the significance of using CIDR in routing?**

   A. It simplifies IP address assignment

   B. It helps aggregate multiple IP ranges into a single routing entry

   C. It eliminates the need for IP address reassignment

   D. It improves security measures

3. **What is the highest-metric route to subnet 2 visible in the output of the show ip route eigrp command given R1's route metrics?**

   A. The feasible successor route (metric 350)

   B. The successor route (metric 100)

   C. The route with the highest metric (450)

   D. The route with the lowest metric (350)

4. **The only switch on a LAN that has all designated interfaces is which type of switch?**

   A. root

   B. access

   C. distribution

   D. core

5. **What must be true about switches for them to exchange VTP messages?**

   A. They must be within the same broadcast domain.

   B. They must have the same number of ports.

   C. They must share the same VTP version and domain name.

   D. They must be configured with the same IP address.

6. What is the role of the VTP server mode?

A. To only forward VLAN information

B. To manage and propagate VLAN configuration information within a VTP domain

C. To simply receive VLAN updates

D. To allow for read-only access to VLAN configurations

7. Which Cisco IOS command is necessary to manually set the EIGRP router ID?

A. eigrp id number

B. eigrp router-id rid

C. set router-id rid

D. router eigrp rid

8. Which Cisco STP mode extends on the IEEE 802.1w standard by providing an STP instance per VLAN?

A. PVST+

B. Rapid PVST+

C. 802.1D

D. VTP+

9. Which VTP modes support the extended range of VLANs?

A. Transparent and Off

B. Client and Server

C. Server and Off

D. Transparent and Client

10. Which statements are true regarding switch stacking technologies?

A. They require multiple configuration files

B. They utilize a single management IP address

C. They support multiple physical connections

D. They can operate independently

Answers

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

Explanations

1. In migrating to OSPFv2 interface configuration, which command configures the area number assigned to an interface?

A. ospf area number

B. area area-number ip ospf

C. ip ospf command in interface configuration mode

D. interface area-number ospf

The command that configures the area number assigned to an interface in OSPFv2 (Open Shortest Path First version 2) is indeed found within the context of the interface configuration mode using the "ip ospf" command followed by the process ID and the area number. This command is critical because it defines which OSPF area the interface will belong to, thereby influencing how OSPF routing information is shared among routers within that area. When you enter interface configuration mode and issue the "ip ospf" command with the appropriate parameters, you set the OSPF process that will run on that specific interface and designate the associated area. This is essential for enabling OSPF routing, organizing the topology, and determining how routing updates propagate. The correct structure of this command allows the router to recognize which traffic flows through which area based on OSPF's hierarchical design, which is key for efficient routing within larger networks. The other choices, while they contain elements that may seem related to OSPF configurations, do not adhere to the proper command syntax or context for defining the area for an interface. Hence, they wouldn't successfully configure an OSPF area on an interface.

2. What is the significance of using CIDR in routing?

A. It simplifies IP address assignment

B. It helps aggregate multiple IP ranges into a single routing entry

C. It eliminates the need for IP address reassignment

D. It improves security measures

Using Classless Inter-Domain Routing (CIDR) significantly benefits routing by allowing the aggregation of multiple IP ranges into a single routing entry. This method enhances the efficiency of routing tables, especially in large networks. By summarizing several contiguous IP addresses into a single entry, routers require less memory and processing power to manage routes, leading to faster routing decisions and improved performance. CIDR works by using prefix notation, which allows for the representation of IP addresses and their associated network prefix in a more flexible way compared to classful addressing. This aggregation reduces the size of routing tables on routers, thereby minimizing the amount of routing information they need to process, which can enhance convergence times and routing efficiency across the internet. The other options, while related to IP addressing or routing in some way, do not capture the primary significance of CIDR as effectively as the ability to aggregate routes. For instance, while CIDR might influence aspects of IP address assignment and could indirectly impact how reassignment is handled, those are not its primary purposes. Additionally, improving security measures is not a direct function of CIDR; it primarily focuses on routing efficiency rather than security enhancements.

3. What is the highest-metric route to subnet 2 visible in the output of the show ip route eigrp command given R1's route metrics?

A. The feasible successor route (metric 350)

B. The successor route (metric 100)

C. The route with the highest metric (450)

D. The route with the lowest metric (350)

The highest-metric route to a subnet refers to the route with the greatest EIGRP metric value that is still considered viable for routing. In EIGRP, routes are categorized into successor and feasible successor routes. The successor route is the primary route to the destination and has the lowest metric, while the feasible successor routes are backup routes that can be used if the successor route becomes unavailable. In this context, the feasible successor route with a metric of 350 is the choice that reflects the highest metric among the valid routes to subnet 2. While the successor route has a metric of 100, making it the primary route, the feasible successor, although still significantly lower than the highest possible metric, qualifies as the highest among alternatives when you disregard active pathways. The other choices suggest metrics that do not fall in line with EIGRP's criteria for what defines the highest-metric viable route. Thus, the feasible successor route holds significance as it is available for use within the EIGRP topology, showing that, even though it's not the primary path, it is still a reliable option when needed.

4. The only switch on a LAN that has all designated interfaces is which type of switch?

A. root

B. access

C. distribution

D. core

In a Local Area Network (LAN), the switch that maintains a state where all its interfaces are designated is a root switch. This specific role is defined by the Spanning Tree Protocol (STP), which is utilized to prevent loops in network topologies. When a switch is elected as the root bridge in a spanning tree topology, it assumes the responsibility of managing the paths in the network. All interfaces on this root switch are designated ports because they are responsible for forwarding traffic towards the root and to other devices on the network. This setup facilitates optimal performance and efficient data transmission, ensuring the root switch handles the primary traffic flow without any loops. Other types of switches, such as access, distribution, and core switches, serve distinct functions in the network hierarchy. Access switches typically connect end-user devices and may have a mix of designated and blocking ports depending on their role in the network and the overall topology. Distribution switches aggregate traffic from access switches, while core switches handle high-speed data transfer between distribution switches. However, they do not inherently have all interfaces in the designated state like the root switch does. Understanding the role of each switch helps in network design and troubleshooting, highlighting why the root switch is unique in its configuration among LAN switches.

5. What must be true about switches for them to exchange VTP messages?

A. They must be within the same broadcast domain.

B. They must have the same number of ports.

C. They must share the same VTP version and domain name.

D. They must be configured with the same IP address.

For switches to exchange VLAN Trunking Protocol (VTP) messages, it is essential that they share the same VTP version and domain name. VTP is a Cisco proprietary protocol used to manage VLANs across multiple switches in a network. The VTP domain name acts as a unique identifier that allows switches to identify the network they belong to and ensures that they can communicate VTP advertisements appropriately. If the switches are not part of the same VTP domain, they will not process VTP messages sent by one another, even if they are connected and within the same broadcast domain. Ensuring that all participating switches use the same VTP version is also critical because different versions may implement features and commands differently, leading to incompatibility in the VTP messages they exchange. This coordination is necessary for effective VLAN management across the network. The other options do not impact VTP message exchange directly. For instance, the number of ports on the switches or having identical configurations regarding IP addresses is not required for VTP operation. Thus, sharing the same VTP version and domain name is the fundamental requirement for VTP message exchange between switches.

6. What is the role of the VTP server mode?

A. To only forward VLAN information

B. To manage and propagate VLAN configuration information within a VTP domain

C. To simply receive VLAN updates

D. To allow for read-only access to VLAN configurations

The role of the VTP server mode is to manage and propagate VLAN configuration information within a VTP domain. In this mode, switches can create, modify, and delete VLANs, and these changes are communicated to all other switches in the same VTP domain. This centralized management of VLANs helps ensure that all switches maintain consistent VLAN data, simplifying network administration. By propagating VLAN changes across the network, the VTP server mode not only facilitates better organization of VLANs but also reduces the chances of configuration errors and inconsistencies that can occur when managing VLANs individually on each switch. In contrast, other options describe functionalities that do not capture the comprehensive capabilities of the VTP server mode or highlight the limited roles of other modes like client or transparent, which do not have the ability to manage VLANs or communicate changes effectively as the server mode does.

7. Which Cisco IOS command is necessary to manually set the EIGRP router ID?

A. eigrp id number

B. eigrp router-id rid

C. set router-id rid

D. router eigrp rid

The command necessary to manually set the EIGRP router ID in Cisco IOS is indeed framed as "eigrp router-id rid." This command is crucial because the router ID in EIGRP is a 32-bit value, typically expressed in IP address format, that uniquely identifies a router within an EIGRP routing domain. When you configure the EIGRP routing process, specifying the router ID explicitly helps in scenarios where there may be multiple routers operating within the same domain. By assigning a fixed router ID, you avoid potential issues with router ID election, which can occur if routers are configured to automatically select their router IDs based on the highest IP address of their active interfaces or loopback interfaces. This command must be entered in router configuration mode after you have activated EIGRP with the "router eigrp" command, ensuring that the specified router ID is recognized during the EIGRP process startup. The importance lies in maintaining stable and predictable routing within your EIGRP environment, particularly in larger networks where router interactions can become complex. Understanding how to set this identifier correctly is fundamental for ensuring optimal EIGRP operations and enhancing network reliability.

8. Which Cisco STP mode extends on the IEEE 802.1w standard by providing an STP instance per VLAN?

A. PVST+

B. Rapid PVST+

C. 802.1D

D. VTP+

Rapid PVST+ is an enhanced version of the traditional Spanning Tree Protocol (STP) that aligns with the IEEE 802.1w standard. The primary feature of Rapid PVST+ is its ability to create a separate Spanning Tree instance for each VLAN in a network. This capability allows for faster convergence times and improved network reliability by minimizing downtime during topology changes. When a network experiences a change, such as a link failure or the addition of a new switch, Rapid PVST+ can rapidly reconfigure the STP for that specific VLAN instance without affecting the other active VLANs. The rapid transitions between states, achieved through features like the use of Proposal and Agreement messages, allows for convergence times that can be reduced to just a few seconds, which is a significant improvement over traditional STP methods. This capability of providing an STP instance per VLAN not only enhances network performance but also allows for more granular control over Spanning Tree behavior within a multi-VLAN environment, making Rapid PVST+ an advantageous choice for network engineers managing complex networks.

9. Which VTP modes support the extended range of VLANs?

A. Transparent and Off

B. Client and Server

C. Server and Off

D. Transparent and Client

The correct answer is that the Transparent and Off modes support the extended range of VLANs. In a network using the VLAN Trunking Protocol (VTP), the different modes dictate how VLAN information is managed and propagated across switches. In VTP Transparent mode, a switch does not participate in VLAN information sharing. It can create, modify, and delete VLANs within its own database but does not affect VTP advertisements to other switches. Importantly, switches in Transparent mode can support the extended VLAN range, which goes from VLAN 1006 to VLAN 4096, thus accommodating additional custom VLAN configuration. Off mode indicates that VTP is entirely disabled on the switch. As a result, it does not share VLAN information with other switches, but it can still support and configure the extended range of VLANs because it operates independently of VTP. This means the switch can be used to configure VLANs manually, including those in the extended range. The choice of Client and Server modes does not provide support for extended VLANs due to the limitations of VTP in these modes. While they can manage standard VLANs (1-1005) and participate in sharing VLAN information, neither Client nor Server modes allows the configuration of extended VLANs without specific configurations

10. Which statements are true regarding switch stacking technologies?

A. They require multiple configuration files

B. They utilize a single management IP address

C. They support multiple physical connections

D. They can operate independently

In switch stacking technologies, utilizing a single management IP address is essential for simplifying network management. When switches are stacked, they function as a single logical unit, which allows them to be managed through one IP address rather than needing individual addresses for each switch. This configuration greatly reduces administrative overhead, simplifies network management, and allows for more straightforward integration into existing network architectures. The requirement for a single management IP address means that any configuration changes or monitoring can be performed at the stack level as opposed to needing to manage each individual switch, leading to enhanced efficiency when dealing with multiple switches that operate synergistically as part of a single system. This design enables improved scalability and performance while streamlining administrative tasks. In contrast, stacking technologies do not require multiple configuration files, as all switches within a stack share a single configuration file. They do support multiple physical connections, but these connections are typically used to tie the switches together in the stack rather than serve as independent connections. Stacked switches generally operate as a cohesive unit rather than independently, further emphasizing the need for centralized management through a single IP address.

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://advroutertech.examzify.com

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