Cyber Fundamentals Block 3 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. **A late collision indicates that another system attempted to transmit after a host has transmitted at least the _____**

   A. First 64 bytes of its frame

   B. First 512 bytes

   C. Last 64 bytes

   D. First 128 bytes

2. **What protocol is used when communication is required between autonomous systems?**

   A. BGP

   B. RIP

   C. OSPF

   D. EIGRP

3. **Which type of routes are learned and maintained in a router's routing table from other internetwork routers using network layer protocols such as RIP, IGRP, OSPF, EIGRP, and BGP?**

   A. Dynamic routes

   B. Static routes

   C. Default routes

   D. Local routes

4. **Name the two standards used for VLAN trunking.**

   A. 802.1Q

   B. ISL

   C. 802.3

   D. 802.1Q and ISL

5. **A _____ is a network inside a network.**

   A. VLAN

   B. Subnet

   C. Broadcast domain

   D. Collision domain

6. In OSPF, which area is the central hub that connects all other areas?

A. Regular Area

B. Stub Area

C. Backbone

D. Not Applicable

7. This is where the diagnostic and boot up routines are stored.

A. ROM

B. RAM

C. NVRAM

D. FLASH

8. BGP is an exterior gateway protocol and uses what for its metrics?

A. Manual Input From Network Administrators

B. Automatic Cost Based On Hop Count

C. Bandwidth-Based Cost

D. AS-Path Length

9. What is a default route?

A. A route used by all hosts in the network

B. A static route used as backup for failed links

C. A specific static route used when no other path is known

D. A route chosen by the most reliable link

10. Which of the following is a disadvantage of Link State algorithms?

A. Fast Convergence Times

B. Require More CPU Power and Memory

C. Complete Topology Picture, Non-reliant on Neighbors for Information

D. Less Prone to Routing Loops

Answers

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

Explanations

1. A late collision indicates that another system attempted to transmit after a host has transmitted at least the _____

A. First 64 bytes of its frame

B. First 512 bytes

C. Last 64 bytes

D. First 128 bytes

In Ethernet networks using CSMA/CD, collisions must be detectable within a fixed window called the slot time, which corresponds to the minimum frame size. The minimum frame size is 64 bytes, which takes a certain amount of time to transmit (512 bit times at 10 Mbps). A late collision happens when another station starts transmitting after the first host has already put at least that much data on the wire, so the collision is detected later rather than within the initial portion of the frame. Therefore, the amount referenced is the first 64 bytes.

2. What protocol is used when communication is required between autonomous systems?

A. BGP

B. RIP

C. OSPF

D. EIGRP

Routing between autonomous systems requires a protocol that can carry reachability information across different administrative domains and support policy-based routing. Border Gateway Protocol is designed for this purpose: it exchanges route advertisements between ASes, uses AS_PATH to indicate the sequence of ASes a route traverses (which helps prevent loops and informs routing decisions), and runs over TCP for reliable transport. It also lets each network apply its own policies at the edge, making it scalable for inter-domain routing across many organizations. The other protocols are interior gateway protocols used within a single autonomous system. RIP is a simple distance-vector protocol limited by hop count, OSPF is a link-state protocol typically organized into areas for rapid convergence inside an AS, and EIGRP (Cisco's implementation) is an enhanced distance-vector protocol used inside an AS. They aren't designed to manage routing between different administrative domains, which is why BGP is the appropriate choice for inter-AS communication.

3. Which type of routes are learned and maintained in a router's routing table from other internetwork routers using network layer protocols such as RIP, IGRP, OSPF, EIGRP, and BGP?

A. Dynamic routes

B. Static routes

C. Default routes

D. Local routes

Routes learned from other networks through routing protocols are dynamic routes. Protocols like RIP, IGRP, OSPF, EIGRP, and BGP are designed to share information about which networks are reachable and the best paths to them. Because they continuously exchange updates and adjust to changes—such as a link going down or coming back up—the router's routing table stays current without manual reconfiguration. Static routes, in contrast, are fixed and configured by an administrator. Default routes are fallback paths for unknown destinations, and local routes refer to directly connected networks learned from the router's own interfaces.

4. Name the two standards used for VLAN trunking.

A. 802.1Q

B. ISL

C. 802.3

D. 802.1Q and ISL

VLAN trunking uses tagging protocols to carry traffic for multiple VLANs over a single physical link. The industry standard method is 802.1Q, defined by IEEE, which inserts a VLAN tag into Ethernet frames to identify their VLAN. Another method is ISL, Cisco's proprietary trunking protocol that encapsulates frames to indicate VLAN membership. While 802.1Q is the widely adopted, vendor-neutral solution, ISL was used primarily on older Cisco networks. 802.3 is the basic Ethernet standard and does not specify trunk tagging. Therefore, the two standards used for VLAN trunking are 802.1Q and ISL.

5. A _____ is a network inside a network.

A. VLAN

B. Subnet

C. Broadcast domain

D. Collision domain

Subnetting divides a larger IP network into smaller pieces by applying a subnet mask. Each subnet functions as its own logical network with a distinct address range, so you can manage and route traffic more efficiently within a bigger network. This is why it's described as a network inside a network: multiple subnets exist within the single overarching IP space, each isolated for addressing and routing purposes. Routers connect these subnets and transfer traffic between them, while devices within the same subnet can communicate directly. Other concepts describe different kinds of separation: a VLAN creates separate broadcast domains at Layer 2, a broadcast domain is all devices that receive the same broadcast, and a collision domain is the shared segment where collisions can occur.

6. In OSPF, which area is the central hub that connects all other areas?

A. Regular Area

B. Stub Area

C. Backbone

D. Not Applicable

OSPF routes between different areas by funneling inter-area information through a central backbone area. This backbone, Area 0, acts as the hub that connects every other area and carries the summary routes between them. All non-backbone areas must attach to the backbone, directly or via a virtual link, so that inter-area routing remains consistent across the entire OSPF domain. A regular area is just a standard area with its own full link-state database; a stub area is a special type that reduces external routing information and relies on a default route to reach networks outside the area. Not applicable isn't a valid area type in OSPF. So the central hub that connects all other areas is the backbone.

7. This is where the diagnostic and boot up routines are stored.

A. ROM

B. RAM

C. NVRAM

D. FLASH

Boot-up routines and diagnostic checks have to be available as soon as power is applied, so they live in non-volatile memory that preserves code without power. ROM is designed for this purpose: it stores the firmware that runs first, such as POST and the initial bootstrapping code, and is typically read-only, ensuring the essential startup sequence remains intact every time the system powers on. RAM would lose its contents when power is off, so it can't hold these routines long-term. While non-volatile options like NVRAM or FLASH can also store firmware, ROM is the traditional and most fitting location described by this scenario. (In modern devices, firmware may reside in flash, but the idea remains the same: non-volatile, startup code loaded early in the boot process.)

8. BGP is an exterior gateway protocol and uses what for its metrics?

A. Manual Input From Network Administrators

B. Automatic Cost Based On Hop Count

C. Bandwidth-Based Cost

D. AS-Path Length

BGP determines the best exterior-path to a destination primarily by the length of the AS_PATH. The AS_PATH is a record of the autonomous systems the route has traversed, so fewer AS hops means a shorter path. This helps avoid routing loops and generally points to a more direct interdomain route. While operators can influence routing with policies (like local preference or MED), those are policy controls rather than the default metric. Other concepts mentioned, such as hop count-based metrics (typical of RIP) or bandwidth-based costs, aren't the built-in exterior-mpath criterion in BGP.

9. What is a default route?

A. A route used by all hosts in the network

B. A static route used as backup for failed links

C. A specific static route used when no other path is known

D. A route chosen by the most reliable link

A default route is the gateway of last resort a router or host uses when there is no more specific route for a destination in its routing table. It acts as a catch-all path for unknown destinations, forwarding such traffic toward a defined next-hop (often a default gateway). In IPv4 this is commonly 0.0.0.0/0 and in IPv6 ::/0, pointing to the router that leads toward the broader internet or external networks. This route can be static or learned via a dynamic routing protocol, but its essential role is to provide a single, known path for any packet that doesn't match any other, ensuring connectivity beyond the local network.

10. Which of the following is a disadvantage of Link State algorithms?

A. Fast Convergence Times

B. Require More CPU Power and Memory

C. Complete Topology Picture, Non-reliant on Neighbors for Information

D. Less Prone to Routing Loops

Link-state routing requires each router to maintain a complete map of the network and run a shortest-path calculation (SPF) whenever the topology changes. That means more memory is needed to store the entire topology and more CPU power to execute the SPF algorithm, especially as the network grows. Those higher resource demands are the main downside of link-state protocols. The other traits—fast convergence, a full topology view, and reduced routing loops—are advantages that come with this approach, not downsides.

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://cyberfundamentalsblock3.examzify.com

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