CYBER FUNDAMENTALS BLOCK 3 PRACTICE TEST (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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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.

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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!

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Questions

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1. **Which VLAN characteristic is true for VLAN tagging across trunks?**

   A. All switches support 802.1Q tagging

   B. The tag is only used on wireless links

   C. The tag is not required for trunking

   D. The tag is only used on VLAN 1

2. **The dependability of each network link is called what?**

   A. Bandwidth

   B. Delay

   C. Reliability

   D. Load

3. **On a shared network medium, what is the term for when two transmissions occur simultaneously?**

   A. Collision

   B. Interference

   C. Latency

   D. Throughput

4. **What do switches break up?**

   A. Collision domains

   B. IP subnets

   C. Broadcast domains

   D. VLAN IDs

5. **Which area in an OSPF network is responsible for distributing routing information between areas?**

   A. Backbone

   B. Area Border Router

   C. Internal Area

   D. External Area

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6. Where is the switch's operating system saved?

A. ROM

B. RAM

C. Flash memory

D. NVRAM

7. Which statement describes the primary purpose of a VLAN?

A. To segment networks by creating separate broadcast domains

B. To unify all broadcast domains into one

C. To provide IP address assignment

D. To manage DNS

8. In Cisco's three-layer model, which layer directly interfaces with end-user devices?

A. Aggregation Layer

B. Core Layer

C. Access Layer

D. Distribution Layer

9. Which VLAN is typically used as the default on many switches and is often the first configured VLAN?

A. VLAN 1

B. VLAN 0

C. VLAN 100

D. VLAN 999

10. Which of the following is an advantage of OSPF?

A. Hierarchical Routing Supports Very Large Networks

B. Shortest Path First Algorithm Allows for Fast Convergence

C. Does Not Suffer From Routing Loop Issues

D. Smaller Routing Updates And They Only Occur When There Is A Topology Change

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Answers

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

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Explanations

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1. Which VLAN characteristic is true for VLAN tagging across trunks?

A. All switches support 802.1Q tagging

B. The tag is only used on wireless links

C. The tag is not required for trunking

D. The tag is only used on VLAN 1

VLAN tagging on trunks uses a standardized method (802.1Q) to attach a VLAN ID to each frame so multiple VLANs can share a single physical link between switches. Because 802.1Q is the standard, virtually all modern switches support it, allowing trunk links to carry traffic for many VLANs simultaneously. On a trunk, frames for the native VLAN can be sent untagged, while frames for all other VLANs are tagged, which explains why tagging isn't needed for every single frame but is required to carry multiple VLANs across the same link. Tagging isn't limited to wireless links, and it isn't exclusive to VLAN 1. That's why the statement about universal 802.1Q support on switches best captures how VLAN tagging across trunks works.

2. The dependability of each network link is called what?

A. Bandwidth

B. Delay

C. Reliability

D. Load

Reliability is about how dependable a network link is—the likelihood that it will work when needed and carry traffic without being disrupted. It captures uptime, fault frequency, and how quickly issues are resolved; a highly reliable link minimizes outages and performance interruptions, often through redundancy, good hardware, error handling, and proactive monitoring. This concept matters for ensuring consistent communication and performance, especially in networks that require steady access and minimal downtime. Bandwith refers to the maximum rate at which data can be transmitted over the link, not how often the link stays up. Delay, or latency, is the time it takes for data to travel from sender to receiver. Load describes how much traffic the link is carrying at a given moment. While these factors affect performance, reliability specifically concerns the steady, dependable operation of the link over time.

3. On a shared network medium, what is the term for when two transmissions occur simultaneously?

A. Collision

B. Interference

C. Latency

D. Throughput

On a shared network medium, two devices transmitting at the same time cause their signals to collide with each other. This collision is what CSMA/CD handles in Ethernet networks, where stations detect the overlap, send a jam signal to ensure everyone notices, and then back off for a random period before trying again. The idea is that when two transmissions overlap, the data can become garbled, so a collision disrupts both messages and forces a retry rather than two successful deliveries. Interference is a broader term for any unwanted signal disturbance and isn't specifically the simultaneous transmission event. Latency is the delay before a transmission begins or between sending and receiving, and throughput is the rate of successful data transfer over time, not the occurrence of two devices transmitting at once. Modern networks reduce or eliminate collisions by using switches and full-duplex links, which isolate each device's transmissions.

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4. What do switches break up?

A. Collision domains

B. IP subnets

C. Broadcast domains

D. VLAN IDs

In Ethernet networks, collisions occur when two devices transmit at the same time on the same shared medium. A switch gives each port its own collision domain, so devices connected to different ports don't contend with each other on the same segment. This confines any potential collision to only the devices on a single port's link, preventing it from spreading across the whole network. If you're using full duplex links, you effectively remove collisions on each point-to-point connection, but the idea remains: each switch port creates a separate collision domain, which is why switches break up collision domains. IP subnets are a layer 3 concept and are typically broken up by routers (or by VLANs at Layer 2, which can segment broadcast domains but not inherently collision domains). Broadcast domains are the same across a basic switch unless VLANs are used to segment them, while VLAN IDs are a mechanism to partition traffic at Layer 2 to create separate broadcast domains, not to divide collision domains by themselves. The key takeaway is that the primary function of a switch in terms of collision handling is to break up collision domains.

5. Which area in an OSPF network is responsible for distributing routing information between areas?

A. Backbone

B. Area Border Router

C. Internal Area

D. External Area

Inter-area routing in OSPF flows through the backbone, Area 0. All other areas connect to this backbone, and summary routes are propagated between areas via the backbone using inter-area LSAs (type 3). Area Border Routers connect non-backbone areas to the backbone and help carry inter-area routes, but the actual distribution of routing information across areas happens through the backbone itself. Internal areas stay within their own domain with intra-area LSAs, and external areas handle routes learned from outside the OSPF domain via type 5 LSAs. So the backbone is the area responsible for distributing routing information between areas.

6. Where is the switch's operating system saved?

A. ROM

B. RAM

C. Flash memory

D. NVRAM

The switch's operating system is stored in flash memory because it is non-volatile storage that can retain the OS image across power cycles and can be updated with new versions. RAM holds the running state of the OS and is lost when power is removed, so it isn't suitable for storing the OS image. ROM typically contains a bootloader or basic firmware, not the full OS image for modern switches. NVRAM stores configuration data such as startup-config, not the OS image. So, flash memory is the correct place for the operating system.

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7. Which statement describes the primary purpose of a VLAN?

A. To segment networks by creating separate broadcast domains

B. To unify all broadcast domains into one

C. To provide IP address assignment

D. To manage DNS

VLANs create separate broadcast domains at the data link layer by grouping switch ports into logical networks. When devices share a VLAN, broadcasts stay within that VLAN and don't cross into other VLANs unless a router is configured to route between them. This segmentation reduces broadcast traffic, improves security by limiting who can see which traffic, and simplifies network management by grouping devices by function or department. So, the primary purpose is to segment networks by creating separate broadcast domains. The other options describe services like IP address assignment or DNS, which are not the VLAN's function, and unifying all broadcast domains would defeat the VLAN's purpose.

8. In Cisco's three-layer model, which layer directly interfaces with end-user devices?

A. Aggregation Layer

B. Core Layer

C. Access Layer

D. Distribution Layer

The layer that directly interfaces with end-user devices is the one at the edge of the network. It provides the actual connection points for PCs, printers, IP phones, and other user equipment, handling things like port configuration, authentication (such as 802.1X), VLAN assignment, and basic security. In Cisco's three-layer model, this is the Access Layer—the point where devices physically connect and gain network access. The other layers serve different roles and don't directly connect to end-user devices. The Core is the fast backbone that interconnects distribution points and moves traffic quickly across the network. The Distribution (often called Aggregation in some contexts) aggregates connections from the access layer, enforces policies, and handles inter-VLAN routing and redundancy.

9. Which VLAN is typically used as the default on many switches and is often the first configured VLAN?

A. VLAN 1

B. VLAN 0

C. VLAN 100

D. VLAN 999

VLAN 1 is the default on many switches, and it's typically the first one you encounter when configuring a device. This VLAN is treated as the native or management VLAN in default switch configurations, meaning untagged traffic on access ports usually falls into this VLAN and the switch's management interface (the IP used to manage the device) is often assigned here. Because of this built in default, VLAN 1 is the most common starting point for initial setups. Other numbers aren't the standard default. VLAN 0 isn't a real, assignable VLAN in most setups (it's used in protocol contexts to mean "no VLAN" in some situations), and numbers like 100 or 999 are simply user-defined or reserved in some environments. So VLAN 1 fits as the typical default and first configured VLAN.

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10. Which of the following is an advantage of OSPF?

A. Hierarchical Routing Supports Very Large Networks

B. Shortest Path First Algorithm Allows for Fast Convergence

C. Does Not Suffer From Routing Loop Issues

D. Smaller Routing Updates And They Only Occur When There Is A Topology Change

The key idea here is how OSPF uses the Shortest Path First approach to react quickly to changes in the network. OSPF builds a complete map of the network as a graph of routers and link costs, and each router runs the SPF calculation (a version of Dijkstra's algorithm) to determine the best path to every destination. When a link state changes, LSAs circulate to all routers, triggering SPF re-calculation. Because each router recomputes the optimal paths and only the affected routes are updated, the network converges to a stable state rapidly, reducing routing instability and loops during the transition. This rapid convergence is the main advantage highlighted. While OSPF does support hierarchical areas and manages updates efficiently, the standout benefit in this context is the fast convergence enabled by the Shortest Path First algorithm.

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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!

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