

CYBER FUNDAMENTALS BLOCK 3 PRACTICE TEST (SAMPLE)

STUDY GUIDE



**SAMPLE STUDY GUIDE
WITH LIMITED QUESTIONS**

**VISIT US ONLINE FOR
THE FULL VERSION STUDY GUIDE**

<https://cyberfundamentalsblock3.examzify.com>



Copyright © 2026 by Examzify - A Kaluba Technologies Inc. product.

ALL RIGHTS RESERVED.

No part of this book may be reproduced or transferred in any form or by any means, graphic, electronic, or mechanical, including photocopying, recording, web distribution, taping, or by any information storage retrieval system, without the written permission of the author.

Notice: Examzify makes every reasonable effort to obtain accurate, complete, and timely information about this product from reliable sources.

SAMPLE

Table of Contents

Copyright	1
Table of Contents	2
Introduction	3
How to Use This Guide	4
Questions	5
Answers	8
Explanations	10
Next Steps	15

SAMPLE

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

SAMPLE

1. Which statement is a disadvantage of Distance Vector routing algorithms?
 - A. Limited by hop count, unsuitable for large networks.
 - B. They are always faster to converge than link-state.
 - C. They require zero memory.
 - D. They support VLSM in all versions.
2. A late collision indicates that another system attempted to transmit after a host has transmitted at least the _____ bytes of its frame
 - A. First 128 bytes of the frame
 - B. Preamble
 - C. First 64 bytes of the frame
 - D. Last 64 bytes of the frame
3. Routers utilizing OSPF use the _____ to acquire neighbors and maintain link-state awareness.
 - A. Update Protocol
 - B. Hello Protocol
 - C. Flooding Protocol
 - D. Keep-Alive Protocol
4. Switches are _____ based and utilize _____ to help them make filtering decisions.
 - A. Hardware, ASICs
 - B. Software, CPUs
 - C. Firmware, Microcontrollers
 - D. Cloud-based, AI accelerators
5. Cisco's hierarchical internetworking model consists of which three layers?
 - A. Core, Edge, Access
 - B. Backbone, Distribution, Access
 - C. Core, Aggregation, Access
 - D. Core, Distribution, Access

6. The term for the sum of the costs of all links traversed between source and destination is called what?
- A. Reliability
 - B. Delay
 - C. Path Length
 - D. Bandwidth
7. A router breaks up which of the following?
- A. Collision domain
 - B. Subnet
 - C. VLAN
 - D. Broadcast domain
8. When given multiple routes to the same destination, routers use what is called ____ to determine the most trusted route.
- A. Metric
 - B. Hop count
 - C. Administrative Distance
 - D. Bandwidth
9. Which term describes a connected group of IP prefixes run by operators with a single routing policy?
- A. Domain
 - B. VLAN
 - C. Subnet
 - D. Autonomous System
10. Which of the following is an advantage of Link State algorithms?
- A. Fast Convergence Times
 - B. Requires More CPU Power and Memory
 - C. Complete Topology Picture, Non-reliant on Neighbors for Information
 - D. Less Prone to Routing Loops

Answers

SAMPLE

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

SAMPLE

Explanations

SAMPLE

1. Which statement is a disadvantage of Distance Vector routing algorithms?

- A. Limited by hop count, unsuitable for large networks.
- B. They are always faster to converge than link-state.**
- C. They require zero memory.
- D. They support VLSM in all versions.

Distance Vector routing relies on each router advertising its distance to destinations to its neighbors, often using hop count as the metric. A real drawback of this approach is that convergence can be slow and routing loops can occur while updates propagate through the network. The hop-count metric also limits scalability because it treats all links as equal and ignores factors like link speed, reliability, and subnet size. As networks grow, this makes distance-vector routing less suitable, since it can't always represent optimal paths or prevent issues like loops without additional mechanisms. So, describing hop-count as a limiting factor that hampers large networks accurately captures the practical disadvantage of distance-vector routing. In contrast, the claim that these protocols're always faster to converge than link-state isn't true—link-state generally converges more quickly. The idea that they require zero memory is false, since routing tables need memory, and the notion that all versions support VLSM is incorrect because some versions do not.

2. A late collision indicates that another system attempted to transmit after a host has transmitted at least the _____ bytes of its frame

- A. First 128 bytes of the frame
- B. Preamble
- C. First 64 bytes of the frame**
- D. Last 64 bytes of the frame

In Ethernet networks that use CSMA/CD, devices listen before transmitting and detect collisions by sensing the line. To ensure a collision is detected while the first transmitter is still sending, Ethernet defines a minimum frame size. For traditional 10 Mbps Ethernet, that minimum is 64 bytes. If a second device starts transmitting after those first 64 bytes have already been sent, a collision can occur later in the frame; that is called a late collision. So the statement is referring to the first 64 bytes of the frame. The preamble is used for synchronization and isn't counted toward the frame length that determines early vs late collisions, and the other options don't match this standard 64-byte threshold.

3. Routers utilizing OSPF use the _____ to acquire neighbors and maintain link-state awareness.

- A. Update Protocol
- B. Hello Protocol**
- C. Flooding Protocol
- D. Keep-Alive Protocol

In OSPF, discovering neighbors and keeping track of who's on each link is done with Hello packets. Routers periodically send Hello messages on every OSPF-enabled interface to find potential neighbors, verify they can form an adjacency, and agree on parameters like timing and area information. If neighbors respond and match these settings, an adjacency is established and link-state information can be shared, enabling the SPF algorithm to build the network's topology. Other terms don't fit here because updates flood link-state information after neighbors are established, floods describe the spread of those updates, and there isn't a separate keep-alive mechanism in this protocol.

4. Switches are _____ based and utilize _____ to help them make filtering decisions.

A. Hardware, ASICs

B. Software, CPUs

C. Firmware, Microcontrollers

D. Cloud-based, AI accelerators

The key idea is that switches achieve fast, reliable packet filtering and forwarding by using dedicated hardware. They rely on special silicon called ASICs to perform the essential decisions about where each packet should go, based on rules like MAC addresses, VLANs, and ACLs, all at line rate. This hardware-driven approach lets the switch process many packets in parallel with very low latency, which wouldn't be feasible if the forwarding decisions were handled primarily by software on a general-purpose CPU or by slower microcontrollers. Firmware or microcontrollers are typically involved in configuring and managing the device, not in making the fast forwarding decisions themselves. In contrast, the control plane software runs on a processor to manage the switch's configuration and tables, while the data plane—the actual filtering and forwarding—stays in hardware. AI accelerators or cloud-based processing aren't used for the basic, deterministic filtering tasks performed by the ASICs in traditional switches.

5. Cisco's hierarchical internetworking model consists of which three layers?

A. Core, Edge, Access

B. Backbone, Distribution, Access

C. Core, Aggregation, Access

D. Core, Distribution, Access

Cisco's hierarchical model organizes the network into three layers to keep functions separate and scalable: Access, Distribution, and Core. The three layers in practice are Core, Distribution, and Access. The Core provides the fast, high-capacity backbone that forwards traffic with minimal policy processing. The Distribution layer sits between the access devices and the core, aggregating traffic from multiple access switches and enforcing routing, security, and QoS policies. The Access layer is where end-user devices connect, handling VLANs, port security, and basic switching. Because the question asks for the three layers of this model, the standard trio is Core, Distribution, and Access. Other labels like Edge, Backbone, or Aggregation don't align with this canonical three-layer structure, so they aren't the correct set.

6. The term for the sum of the costs of all links traversed between source and destination is called what?

A. Reliability

B. Delay

C. Path Length

D. Bandwidth

The main idea is measuring a route by the total cost accumulated across all the links it traverses. In routing, each link can have a cost value assigned by the protocol, and the path length (or path cost) is the sum of those costs along the path from source to destination. This distinguishes it from delay (time to send data), bandwidth (capacity), and reliability (success probability). For example, a route with fewer high-cost links can be preferred over one with more links but lower costs, because the total cost is smaller. If every link cost is 1, path length effectively equals the number of hops, but in general it's the sum of the link costs that defines the path length.

7. A router breaks up which of the following?

- A. Collision domain
- B. Subnet
- C. VLAN
- D. Broadcast domain**

A router breaks up broadcast domains. Broadcasts are sent to all devices on a local network segment, but routers don't forward those broadcast frames from one network to another. Since each router interface connects to a different network, broadcasts don't cross between them, so each side becomes its own broadcast domain. For context, routers do separate collision domains to some extent (each interface is its own collision domain), and they route traffic between subnets, or between VLANs when inter-VLAN routing is used. But the specific idea tested here is that a router stops broadcasts from propagating across networks, creating multiple broadcast domains.

8. When given multiple routes to the same destination, routers use what is called ____ to determine the most trusted route.

- A. Metric
- B. Hop count
- C. Administrative Distance**
- D. Bandwidth

Administrative Distance is the measure that tells a router how trustworthy a source of routing information is. When a destination can be reached via more than one route from different sources (for example, one learned from a dynamic protocol and another from a static entry), the router compares these sources by their administrative distance and installs the route with the lowest value—the most trusted source. This is why the router ends up with the “best” route based on trust, not just path metrics. Metrics like hop count or bandwidth are used to compare routes from the same source, but they don't determine which source is trusted when multiple sources are available.

9. Which term describes a connected group of IP prefixes run by operators with a single routing policy?

- A. Domain
- B. VLAN
- C. Subnet
- D. Autonomous System**

A single routing policy applied across a connected set of IP prefixes describes an Autonomous System. In Internet routing, organizations group their networks into an AS, administered under one policy and identified by an Autonomous System Number. Inside the AS, internal routing can use various protocols, but externally it presents a unified policy to other networks via BGP, which is what makes this unit meaningful for inter-domain routing. The other terms don't capture that same scope: a domain is more about naming and scope, a VLAN is a Layer 2 segmentation within a local network, and a subnet is just a block of addresses within a larger network.

10. Which of the following is an advantage of Link State algorithms?

- A. Fast Convergence Times
- B. Requires More CPU Power and Memory
- C. Complete Topology Picture, Non-reliant on Neighbors for Information
- D. Less Prone to Routing Loops**

Link-state routing builds a complete map of the network and uses that map to compute routes with a shortest-path algorithm. Because every router floods its link information and then independently computes the best path to every destination, all routers converge on a consistent view and can choose loop-free paths. This global, deterministic decision process prevents the kind of inconsistent routing information that often creates loops in other approaches, making routing loops much less likely. While having a full topology view and not needing to rely on neighbors for every update are also realities of link-state protocols, the clear practical win in this context is the ability to derive loop-free routes from a shared network map.

SAMPLE

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!

SAMPLE