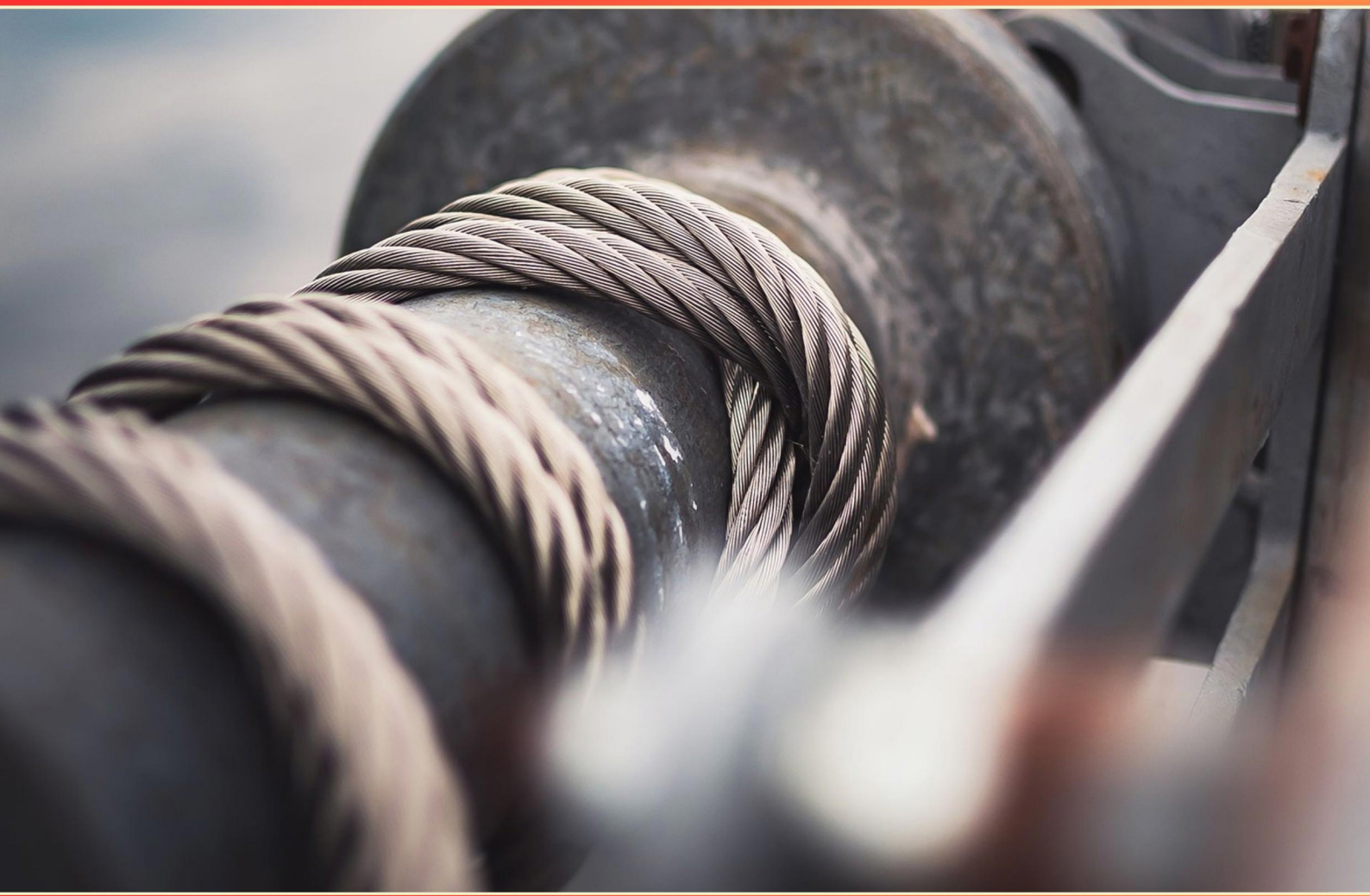
INTERNET PROTOCOL VERSION 6 (IPV6) PRACTICE TEST (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

VISIT US ONLINE FOR THE FULL VERSION STUDY GUIDE

https://ipv6.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.

SAMPLE

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!

SAMPLE

Questions

SAMPLE

1. **What is the purpose of IPv6 privacy extensions and what risk do they mitigate?**

   A. They generate temporary, randomized interface IDs to avoid tracking; they may complicate logging and management because addresses change.

   B. They enforce permanent interface IDs for all devices.

   C. They disable privacy extensions by default on enterprise networks.

   D. They require NAT to preserve privacy on IPv6 networks.

2. **What is the prefix length of the Unique Local Address range fc00::/7?**

   A. /6

   B. /7

   C. /8

   D. /9

3. **Which IPv6 multicast scope is considered deprecated?**

   A. Node-local

   B. Link-local

   C. Site-local

   D. Global

4. **What is the IPv6 multicast address used by DHCPv6 clients on the local link?**

   A. ff02::1:2

   B. ff02::101

   C. ff02::1

   D. ff02::2

5. **Which protocol number is assigned to TCP?**

   A. 6

   B. 17

   C. 58

   D. 1

SAMPLE

6. How is fragmentation handled in IPv6, and what happens if a packet is too large?

A. Routers fragment IPv6 packets when needed.

B. IPv6 does not fragment; the sender must fragment or use Path MTU Discovery; If too large, ICMPv6 Packet Too Big (Type 2) is returned.

C. IPv6 uses a separate fragmentation header at the end of the header list.

D. Fragmentation is performed by intermediate routers.

7. IPv6 addresses are written as eight groups of 16 bit hexadecimal values separated by colons. How many groups are used in a standard IPv6 address?

A. 4

B. 8

C. 6

D. 2

8. Which scenario best describes DHCPv6 versus SLAAC usage on a network according to the material?

A. Both can be used together depending on router flags

B. DHCPv6 is incompatible with SLAAC

C. SLAAC requires manual IP assignment

D. DHCPv6 provides only DNS settings

9. In the full notation example fddd:f00d:cafe:0000:0000:0000:0000:0001, how many hextets contain non-zero values?

A. 3

B. 4

C. 5

D. 6

10. Differentiate SLAAC from DHCPv6 in terms of how addresses are configured in IPv6.

A. SLAAC assigns addresses automatically using router advertisements with a generated interface ID.

B. SLAAC allows automatic address assignment using router advertisements with a generated interface ID; DHCPv6 can be used in a stateful mode to assign addresses and in stateless mode to provide other config like DNS.

C. SLAAC replaces DNS; DHCPv6 replaces DHCP.

D. SLAAC requires a centralized server; DHCPv6 cannot provide DNS.

SAMPLE

Answers

SAMPLE

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

SAMPLE

Explanations

SAMPLE

1. What is the purpose of IPv6 privacy extensions and what risk do they mitigate?

A. They generate temporary, randomized interface IDs to avoid tracking; they may complicate logging and management because addresses change.

B. They enforce permanent interface IDs for all devices.

C. They disable privacy extensions by default on enterprise networks.

D. They require NAT to preserve privacy on IPv6 networks.

IPv6 privacy extensions are designed to protect user privacy by changing the device's addressing over time. They do this by generating temporary, randomized interface IDs that are used alongside the regular address, so the same device presents different addresses on different networks or over time. This makes it much harder for someone watching network traffic to correlate activity to a single device or track a user as they move between networks. The key benefit is reducing tracking and fingerprinting across sites and sessions. The trade-off is that logs, analytics, and access controls can become more complex because a device no longer has a single stable address to rely on. Some environments may adjust privacy settings for stability or logging reasons, but the fundamental purpose of privacy extensions is to curb address-based tracking, not to enforce permanent IDs, disable them by default, or rely on NAT for privacy.

2. What is the prefix length of the Unique Local Address range fc00::/7?

A. /6

B. /7

C. /8

D. /9

IPv6 prefix length shows how many leading bits define the network portion. The Unique Local Address space is defined as fc00::/7, which fixes the first seven bits of the address. Because fc00::/7 explicitly indicates a /7 prefix, the correct prefix length is seven. This /7 range actually covers two /8 blocks (fc00::/8 and fd00::/8), since the first seven bits are the same for both fc and fd. The other lengths would not match the given fc00::/7 designation.

3. Which IPv6 multicast scope is considered deprecated?

A. Node-local

B. Link-local

C. Site-local

D. Global

Multicast scope in IPv6 controls how far a multicast packet can travel. Node-local traffic stays on a single node, link-local stays on the local link, and global traffic can be routed across the internet. The site-local scope was meant for delivery within a single site, like a campus, but it proved problematic because different sites could use the same site-local prefix, making it unclear whether a packet should stay within a site or be forwarded elsewhere. This ambiguity made routing and policy enforcement unreliable, so site-local multicast addresses were deprecated. The practical takeaway is to avoid site-local and rely on link-local for local-link delivery or global for wider dissemination, using other mechanisms if you need defined boundaries.

SAMPLE

4. What is the IPv6 multicast address used by DHCPv6 clients on the local link?

A. ff02::1:2

B. ff02::101

C. ff02::1

D. ff02::2

DHCPv6 uses a specific link-local multicast group to reach DHCP servers on the same network segment. When a client starts, it sends its SOLICIT message to the all-DHCP-servers-and-relays group, which is ff02::1:2. This ensures every DHCPv6 server or relay agent on the local link receives the request, while the scope remains local to that link. Other well-known link-local groups exist (such as ff02::1 for all nodes or ff02::2 for all routers), but they're not used for locating DHCPv6 servers. So the correct multicast address is ff02::1:2.

5. Which protocol number is assigned to TCP?

A. 6

B. 17

C. 58

D. 1

In IP headers, the next-layer protocol is identified by a numeric value, so the device knows how to hand the payload to the correct transport protocol. The number assigned to the Transmission Control Protocol is 6, which is why the option showing 6 is the right choice. This value appears in the Protocol field of IPv4 or the Next Header field of IPv6, guiding how the payload is processed by TCP. The other numbers correspond to different protocols: 17 is UDP, 58 is ICMPv6, and 1 is ICMP.

6. How is fragmentation handled in IPv6, and what happens if a packet is too large?

A. Routers fragment IPv6 packets when needed.

B. IPv6 does not fragment; the sender must fragment or use Path MTU Discovery; If too large, ICMPv6 Packet Too Big (Type 2) is returned.

C. IPv6 uses a separate fragmentation header at the end of the header list.

D. Fragmentation is performed by intermediate routers.

In IPv6, fragmentation is handled by the sender, not by routers along the path. The network relies on the Path MTU Discovery process to learn the smallest MTU along the route, and the source must ensure packets fit that size before sending. If a router cannot forward a packet because it's larger than the next hop's MTU, it will drop the packet and return an ICMPv6 "Packet Too Big" message to the sender, indicating the MTU to use. The sender can then fragment (at the source) or retransmit smaller packets that conform to the discovered path MTU. The fragmentation header in IPv6 exists but is not used by routers to fragment in transit; fragmentation is essentially a source-driven operation, with PMTUD guiding the allowed size.

SAMPLE

7. IPv6 addresses are written as eight groups of 16 bit hexadecimal values separated by colons. How many groups are used in a standard IPv6 address?

A. 4

B. 8

C. 6

D. 2

An IPv6 address is 128 bits long and is split into eight blocks, each block being 16 bits. Each block is written as four hexadecimal digits, and the blocks are separated by colons. So a standard IPv6 address uses eight groups. You'll sometimes see addresses that look shorter because zeros are compressed with a double-colon, but the full form always contains eight 16-bit blocks (for example, 2001:0db8:85a3:0000:0000:8a2e:0370:7334 has eight groups).

8. Which scenario best describes DHCPv6 versus SLAAC usage on a network according to the material?

A. Both can be used together depending on router flags

B. DHCPv6 is incompatible with SLAAC

C. SLAAC requires manual IP assignment

D. DHCPv6 provides only DNS settings

The main idea here is that IPv6 can combine SLAAC and DHCPv6, with how they work together dictated by router advertisements. SLAAC lets a host autoconfigure its own address using the prefix provided by routers, without a DHCP server. DHCPv6 can operate in stateful mode to assign addresses and/or provide other configuration data such as DNS servers and other settings. The router's flags in Router Advertisements—Managed (M) and Other Config (O)—control how clients use DHCPv6. If both flags indicate usage, a network can still rely on SLAAC for address configuration while DHCPv6 supplies additional information, or use DHCPv6 for addresses and/or other data as needed. So, depending on these flags, DHCPv6 and SLAAC can be used together, which is why this option is the best description. DHCPv6 is not inherently incompatible with SLAAC, and SLAAC does not require manual IP assignment. Also, DHCPv6 provides more than just DNS settings; it can deliver various configuration data and, in its stateful form, can assign addresses.

9. In the full notation example fddd:f00d:cafe:0000:0000:0000:0000:0001, how many hextets contain non-zero values?

A. 3

B. 4

C. 5

D. 6

Think in terms of hextets: an IPv6 address is eight 16 bit blocks, written in full notation as four hex digits per block. A non-zero hextet is any block that isn't 0000. In the given address, the blocks are fddd, f00d, cafe, 0000, 0000, 0000, 0000, 0001. The non-zero ones are fddd, f00d, cafe, and 0001. That makes four blocks with non-zero values. So the number is four.

SAMPLE

10. Differentiate SLAAC from DHCPv6 in terms of how addresses are configured in IPv6.

A. SLAAC assigns addresses automatically using router advertisements with a generated interface ID.

B. SLAAC allows automatic address assignment using router advertisements with a generated interface ID; DHCPv6 can be used in a stateful mode to assign addresses and in stateless mode to provide other config like DNS.

C. SLAAC replaces DNS; DHCPv6 replaces DHCP.

D. SLAAC requires a centralized server; DHCPv6 cannot provide DNS.

In IPv6, addresses can be built in two ways: SLAAC and DHCPv6, and the key distinction is who or what configures the address itself. SLAAC relies on Router Advertisements from the local router to supply the network prefix, and the host automatically creates its own address by combining that prefix with an interface identifier generated by the host. There's no central server assigning the address in this flow, so the addressing is essentially self-configured, though the host's method for generating the interface ID can vary (mac-derived or privacy-enabled random IDs). DHCPv6 brings in a centralized mechanism for address assignment. It can run in stateful mode, where a DHCPv6 server hands out an address to the client and tracks leases, similar to DHCPv4. It can also run in stateless mode, where the server does not assign addresses but provides other configuration data such as DNS server information. In this mode, the host still uses SLAAC to derive its address. So the best statement reflects that SLAAC uses router advertisements with a generated interface ID to configure addresses, while DHCPv6 can be used in a stateful mode to assign addresses and in a stateless mode to provide other configuration like DNS.

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://ipv6.examzify.com

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

SAMPLE