

Network Systems Exam 1 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

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- 1. IPSec creates secure connections in five steps. Put the following steps in order of operation: 1. Key management 2. Data transfer 3. Security negotiations 4. IPSec initiation 5. Termination**
 - A. 4, 1, 3, 2, 5
 - B. 1, 4, 3, 2, 5
 - C. 5, 3, 1, 2, 4
 - D. 2, 3, 1, 4, 5

- 2. Why do collisions reduce network performance?**
 - A. Because the signal is encrypted
 - B. Because the signal must be retransmitted
 - C. Because bandwidth doubles after collision
 - D. Because devices switch channels

- 3. In order for an application or service to receive data, a port number must be assigned to it. What is it?**
 - A. Address
 - B. Socket
 - C. Process
 - D. Channel

- 4. The statement 'TCP/IP protocols add information at the end of messages in fields called footers' is true or false?**
 - A. True
 - B. Not stated
 - C. Don't know
 - D. False

- 5. True or False: It is possible to run multiple DNS servers on a single machine.**
 - A. True
 - B. False
 - C. Sometimes
 - D. Not possible

- 6. Reviewing the router inventory can reveal which details?**
- A. The physical location of each router**
 - B. How many routers are present**
 - C. The firmware version of each router**
 - D. The network password for admin access**
- 7. Which configuration best isolates guest traffic from internal resources?**
- A. Captive portal**
 - B. Geofencing**
 - C. Guest network**
 - D. WEP**
- 8. In IPSec, which transmission mode is most appropriate for securing communications between two networks across a distance?**
- A. Transport mode**
 - B. Tunnel mode**
 - C. Gateway mode**
 - D. Hybrid mode**
- 9. In terms of security, data exists generally in three states. In what state is data being moved?**
- A. In transit**
 - B. At rest**
 - C. In use**
 - D. Archived**
- 10. What is the term used to describe what happens when speed and duplex settings are not supported by a neighboring device and result in a slow or failed transmission?**
- A. Latency**
 - B. Speed and Duplex Mismatch**
 - C. Jitter**
 - D. Bandwidth**

Answers

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

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Explanations

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1. IPsec creates secure connections in five steps. Put the following steps in order of operation: 1. Key management 2. Data transfer 3. Security negotiations 4. IPsec initiation 5. Termination

A. 4, 1, 3, 2, 5

B. 1, 4, 3, 2, 5

C. 5, 3, 1, 2, 4

D. 2, 3, 1, 4, 5

IPsec sets up a secure channel in stages, starting with initiating the connection so peers know you want to communicate securely. After initiation, you handle key management to create and exchange the cryptographic keys that will protect the traffic. Once keys are in place, you move into security negotiations to decide the exact algorithms, modes, and lifetimes that will govern the session and to establish the Security Associations. With the SAs and keys established, data can then be transferred securely. When the session is finished, termination cleanly closes the connection and frees resources. This sequence matches the order: IPsec initiation, key management, security negotiations, data transfer, termination.

2. Why do collisions reduce network performance?

A. Because the signal is encrypted

B. Because the signal must be retransmitted

C. Because bandwidth doubles after collision

D. Because devices switch channels

Collisions waste time on a shared network medium. When two or more devices transmit at the same moment, their signals interfere and the frames get garbled. The network protocol detects the collision and must retry sending the frames. That retry process uses additional time and consumes bandwidth without delivering useful data, which lowers the effective throughput. Saying the signal must be retransmitted captures this core effect: the original transmission fails due to the collision, so the data must be sent again, adding overhead and slowing down overall performance. The other options aren't accurate explanations: encryption isn't related to collisions; bandwidth doesn't magically double after a collision (it remains the same but with wasted time); and devices don't typically switch channels to resolve a collision on a shared Ethernet.

3. In order for an application or service to receive data, a port number must be assigned to it. What is it?

A. Address

B. Socket

C. Process

D. Channel

Port numbers are bound to a socket. An application creates a socket and binds it to a port, so data arriving at that port on the host is delivered to that socket. The process uses the socket to read or write data, and a single process can own multiple sockets with different ports. So the port is associated with the socket, not with the process itself.

4. The statement 'TCP/IP protocols add information at the end of messages in fields called footers' is true or false?

- A. True**
- B. Not stated**
- C. Don't know**
- D. False**

In TCP/IP, headers are added in front of the data, not as a footer. The transport layer adds a TCP header with ports, sequencing, and control flags, then the Internet layer adds an IP header before that, and the resulting packet starts with these headers followed by the payload. Any trailing information you might see belongs to the data-link layer (for example, an Ethernet trailer like a frame-check sequence), not to TCP/IP itself. So describing TCP/IP as adding information at the end in footers isn't accurate.

5. True or False: It is possible to run multiple DNS servers on a single machine.

- A. True**
- B. False**
- C. Sometimes**
- D. Not possible**

Multiple DNS server processes can run on one machine because DNS software is just programs that listen on network sockets. You can start more than one instance, each with its own configuration and data, and configure them to listen on different IP addresses or ports. For example, one server could listen on 192.168.1.10:53 and another on 10.0.0.5:53, or you could run one instance on the loopback address for testing while another serves a local network. Containers or separate namespaces can also help keep them isolated. The key point is that you're not limited to a single DNS server per machine; as long as the servers don't try to bind to the same IP and port combination, coexistence works. So, this is possible.

6. Reviewing the router inventory can reveal which details?

- A. The physical location of each router**
- B. How many routers are present**
- C. The firmware version of each router**
- D. The network password for admin access**

An inventory is a catalog of devices you have in the network, focusing on listing assets and how many of each exist. When you review it, the most reliable takeaway is the total count of routers deployed, because the primary purpose of an inventory is to track quantity for management, planning, and audits. While some records may include additional details like location or firmware, those fields aren't guaranteed to be present or up to date in every inventory, and sensitive information such as admin passwords is not stored there for security reasons. So the number of routers you have is the detail you can definitively determine from reviewing the inventory.

7. Which configuration best isolates guest traffic from internal resources?

- A. Captive portal**
- B. Geofencing**
- C. Guest network**
- D. WEP**

The idea being tested is how to separate guest devices from the internal network so guests can access the internet but cannot reach internal resources. The best way is to configure a dedicated guest network—a separate SSID that maps to its own subnet or VLAN, with its own firewall rules and sometimes NAT. This setup ensures guest traffic is isolated from the internal network: the guest subnet is protected by access controls that block attempts to reach internal servers, while still allowing internet access. Often a captive portal is used on this network to require authentication, but isolation is achieved by keeping guests on a separate network and enforcing rules between that network and the internal one. The other options don't provide this isolation by themselves. A captive portal is just a login gateway and, if not paired with proper network separation, doesn't guarantee isolation. Geofencing relates to location-based behavior, not network isolation. WEP is an old, insecure security standard and has nothing to do with isolating guest traffic from internal resources.

8. In IPSec, which transmission mode is most appropriate for securing communications between two networks across a distance?

- A. Transport mode**
- B. Tunnel mode**
- C. Gateway mode**
- D. Hybrid mode**

The main idea is to secure communications between two separate networks over a distance. To do that, you need to create a secure tunnel between the edge devices (gateways) at each network. IPSec tunnel mode does exactly this: it encapsulates the entire original IP packet inside a new IP header and encrypts the whole packet, so the networks can send data through a protected path across an untrusted network like the Internet. This site-to-site (network-to-network) setup relies on the gateways performing the encapsulation and routing, making tunnel mode the right choice for long-distance network-to-network security. In contrast, transport mode only encrypts the payload between two hosts and leaves the original IP header unprotected, which is appropriate for end-to-end host-to-host communication within or across a single path, not for linking two separate networks over distance. The other terms aren't standard IPSec modes, and they don't provide the required encapsulation for network-to-network VPNs. So tunnel mode best fits securing communications between two networks across distance.

9. In terms of security, data exists generally in three states. In what state is data being moved?

- A. In transit**
- B. At rest**
- C. In use**
- D. Archived**

Data security treats data as existing in three states: in transit, in use, and at rest. When data is being moved from one location to another—over a network, between devices, or during transfer—it is in transit. This is the moment you must protect the data with encryption in transit (like TLS or IPsec) and secure transport protocols because the data is susceptible to interception or tampering while it's en route. In contrast, data in use is actively being processed, and data at rest is stored on disks or other storage media. Archived data is still a form of at rest long-term storage.

10. What is the term used to describe what happens when speed and duplex settings are not supported by a neighboring device and result in a slow or failed transmission?

- A. Latency**
- B. Speed and Duplex Mismatch**
- C. Jitter**
- D. Bandwidth**

Speed and duplex negotiation allows two Ethernet devices to agree on how fast to send data and whether both directions can be used simultaneously. When a device on the other end doesn't support the same speed or duplex setting, they can't settle on a common configuration. That mismatch means the link often operates at a lower speed or in half-duplex with collisions and retries, which dramatically slows transmissions or even prevents the link from performing properly. This is why the correct term is speed and duplex mismatch. Latency, jitter, and bandwidth describe other aspects of network performance (delay, the variability of delay, and capacity), not the negotiation outcome. If you encounter this, you typically fix it by ensuring both ends use the same speed and duplex setting, or by relying on proper auto-negotiation on compatible hardware.

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://networksys1.examzify.com>

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

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