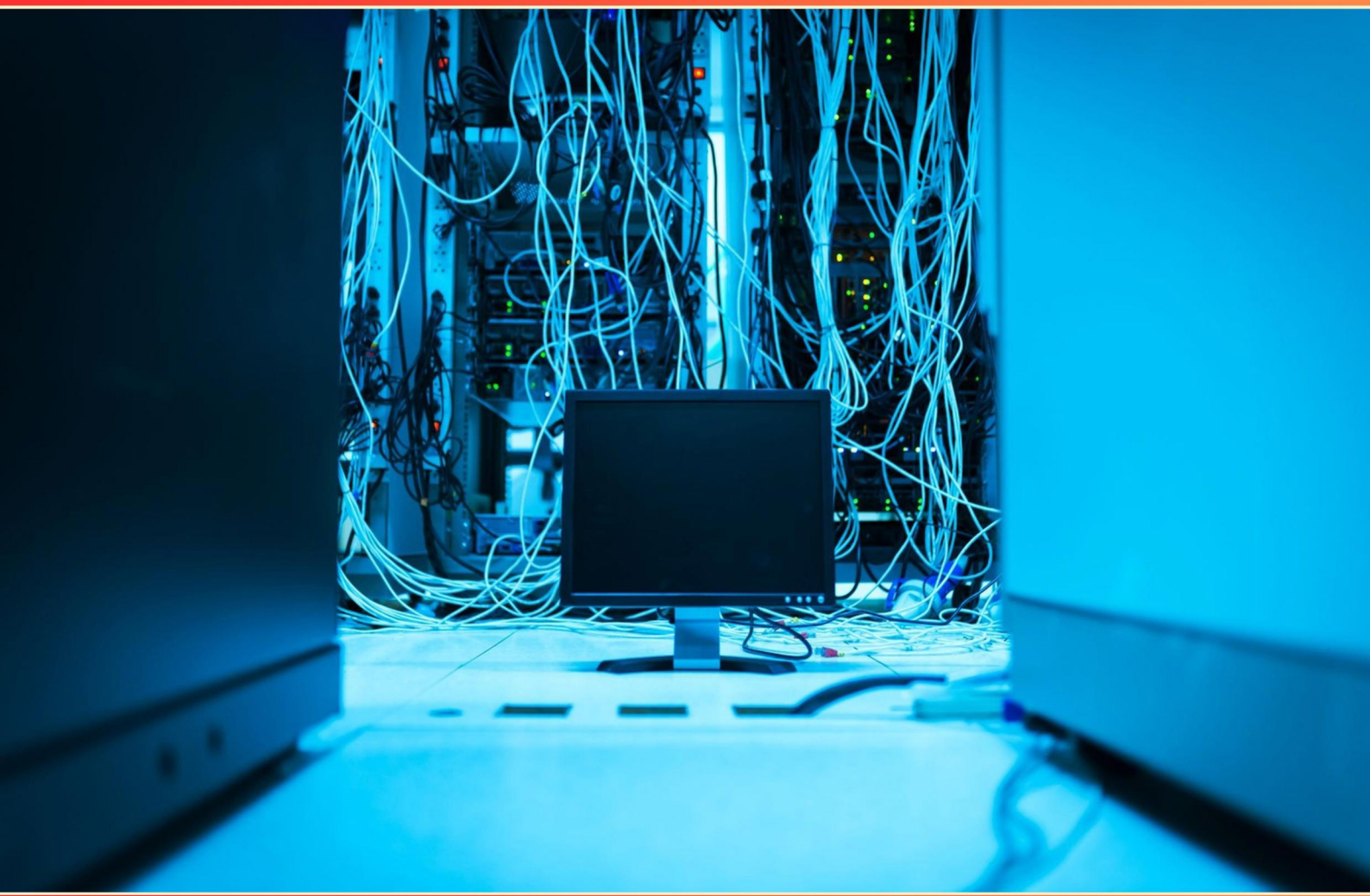
NETWORK SYSTEMS EXAM 1 PRACTICE TEST (SAMPLE)

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. A computer cannot connect to the Internet even though IP address and subnet mask are correct. What could be the issue?

A. Incorrect default gateway IP address

B. DNS issues

C. Cable unplugged

D. Firewall blocking all traffic

2. What is the default subnet mask for a Class C network?

A. 255.0.0.0

B. 255.255.0.0

C. 255.255.255.0

D. 255.255.255.255

3. As a wave travels into and through a different transmission medium, the wave's direction, speed, and wavelength are altered. What is this phenomenon called?

A. Reflection

B. Refraction

C. Diffraction

D. Scattering

4. In air-handling plenum spaces, which type of cable is specified to minimize smoke production?

A. Plenum Cabling

B. PVC-Coated Cable

C. Shielded Twisted Pair

D. Coaxial Cable

5. A workstation boots with an error indicating the IP address is already in use. What is a likely cause?

A. Two workstations have the same static IP address.

B. One IP address was not reserved by DHCP.

C. The DHCP server is down.

D. ARP poisoning is active.

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6. What type of address is used only at the network layer for routing purposes?

A. MAC address

B. IP address

C. Port number

D. URL

7. What is the defined range of IP addresses that a router assigns to clients for DHCP called?

A. DHCP pool

B. IP address range

C. DHCP lease

D. DHCP scope

8. 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

9. Which switch will they use with ipconfig to check the status of all network adapters?

A. /all

B. /renew

C. /release

D. /flushdns

10. Which OSI layer handles IP addresses for routing?

A. Network Layer

B. Data Link Layer

C. Transport Layer

D. Application Layer

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Answers

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

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Explanations

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1. A computer cannot connect to the Internet even though IP address and subnet mask are correct. What could be the issue?

A. Incorrect default gateway IP address

B. DNS issues

C. Cable unplugged

D. Firewall blocking all traffic

Routing out of the local subnet relies on the default gateway. Even with a correct IP address and subnet mask, you still need a valid default gateway so traffic destined for networks outside your local LAN can be forwarded to the router and then to the Internet. If the gateway address is incorrect or the gateway itself is unreachable, packets won't have a proper next hop, so Internet access fails despite the host's own addressing looking fine. DNS issues would affect resolving domain names, but you could still reach hosts by their IP address if the path out is working. A cable unplugged typically shows no link at all rather than just Internet access failing, and a firewall blocking all traffic could cause broader symptoms than just Internet access, though it's possible. The most likely cause given the scenario is an incorrect default gateway.

2. What is the default subnet mask for a Class C network?

A. 255.0.0.0

B. 255.255.0.0

C. 255.255.255.0

D. 255.255.255.255

Classful IPv4 addressing uses a default subnet mask based on the address class. For Class C, the network portion is contained in the first three octets, leaving the last octet for hosts. That means 24 bits for the network, so the default subnet mask is 255.255.255.0. This mask supports up to 254 usable host addresses per subnet. The other masks correspond to different classes or special cases: 255.0.0.0 is Class A, 255.255.0.0 is Class B, and 255.255.255.255 is a broadcast address, not a default subnet mask.

3. As a wave travels into and through a different transmission medium, the wave's direction, speed, and wavelength are altered. What is this phenomenon called?

A. Reflection

B. Refraction

C. Diffraction

D. Scattering

Refraction is the change in direction, speed, and wavelength a wave experiences as it crosses into a different medium. When the wave enters the new material, its speed changes due to the medium's properties. Since the frequency stays the same across the boundary, the wavelength must adjust to match the new speed. Parts of the wavefront that hit the boundary at different angles will travel at different speeds in the new medium, causing the wave to bend. This bending follows Snell's law, relating the incidence and refraction angles to the speeds (or refractive indices) of the two media. For example, light slows down and bends toward the normal when entering a denser medium like water from air. The other terms describe different phenomena: reflection is bouncing off the boundary, diffraction is bending around obstacles or through openings, and scattering involves redirection by particles in a medium.

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4. In air-handling plenum spaces, which type of cable is specified to minimize smoke production?

A. Plenum Cabling

B. PVC-Coated Cable

C. Shielded Twisted Pair

D. Coaxial Cable

In air-handling spaces you want cables that keep smoke and toxic fumes to a minimum in case of a fire, because the air moves through these areas and would quickly spread any smoke. Plenum-rated cabling is designed for exactly this environment — it uses materials and construction that limit flame spread and reduce smoke production, meeting stricter safety requirements for spaces used to circulate air. That's why this option is the best choice: it explicitly denotes a cable type approved for use in plenum spaces, aligning with building and electrical codes to keep the ventilation pathways from becoming high-smoke, high-toxicity hazards. The other options describe cables that may be fine for general use but don't inherently meet the plenum-specific smoke and flame requirements; PVC-coated, shielded twisted pair, or coaxial cables can burn with more smoke and toxic gases and aren't guaranteed to be suitable for air-handling plenums.

5. A workstation boots with an error indicating the IP address is already in use. What is a likely cause?

A. Two workstations have the same static IP address.

B. One IP address was not reserved by DHCP.

C. The DHCP server is down.

D. ARP poisoning is active.

The main idea is an IP address conflict on the local network. When two devices try to use the same IPv4 address, the network stack detects that another device is already responding for that address, so the system flags that the IP is "in use" and stops configuring the NIC properly at boot. The scenario described matches the common case of two workstations configured with the same static IP. With static addresses, there's no automatic check by a server to prevent duplicates, so both machines can claim the same address until ARP probes reveal the conflict, triggering the error message. Why the other options don't fit as neatly: if the DHCP server were simply down, devices would typically fail to obtain an address or fall back to a link-local address rather than explicitly reporting that an address is already in use. If an IP isn't reserved by DHCP, that doesn't by itself create a collision unless another device is statically using that same IP. ARP poisoning could cause various misdirection issues, but the straightforward boot-time message about the address being in use is most directly explained by a duplicate static address on two devices. To fix it, assign unique IPs to each device (or rely on DHCP with proper address management and reservations), ensuring static addresses don't clash with DHCP scopes.

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6. What type of address is used only at the network layer for routing purposes?

A. MAC address

B. IP address

C. Port number

D. URL

Routing across networks relies on addresses at the network layer to direct packets toward their destination. That means IP addresses are used by routers to determine how to forward a packet from one network to another, with routers reading the destination IP to pick the next hop and the best path. The MAC address operates at the data link layer and is used to deliver frames within a single local network segment; it isn't used for routing between networks (frames are re-encapsulated with new link-layer addresses as they cross hops). Port numbers identify processes on a host at the transport layer, helping multiplex multiple applications but not guiding routing decisions across networks. URLs are application-layer identifiers that get resolved to IP addresses (via DNS, for example) but aren't themselves the addresses routers use to route traffic. So the address used specifically for routing purposes at the network layer is the IP address.

7. What is the defined range of IP addresses that a router assigns to clients for DHCP called?

A. DHCP pool

B. IP address range

C. DHCP lease

D. DHCP scope

The key idea is that a DHCP scope defines the pool of IP addresses a DHCP server can assign to clients on a network. This scope specifies the range of addresses available for leasing, along with the associated network settings (subnet mask, default gateway, DNS servers, and lease duration). The term DHCP lease refers to the actual address a client holds for a period of time, not the pool itself, and while some devices call the pool a "pool," the standard and most precise term is DHCP scope.

8. 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.

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9. Which switch will they use with ipconfig to check the status of all network adapters?

A. /all

B. /renew

C. /release

D. /flushdns

To see the status of all network adapters, use the full detail option: ipconfig /all. This switch prints a complete listing for every adapter, including IP address, subnet mask, default gateway, DNS servers, DHCP settings, lease information, and the physical (MAC) address. It gives you a full snapshot of each adapter's current configuration and state, which is exactly what you need to assess status across all adapters. The other switches have different tasks: /renew requests a new DHCP lease, /release releases the current DHCP lease, and /flushdns clears the DNS resolver cache. None of those provide the comprehensive per-adapter configuration view that /all does.

10. Which OSI layer handles IP addresses for routing?

A. Network Layer

B. Data Link Layer

C. Transport Layer

D. Application Layer

Routing across multiple networks relies on the Network Layer, which provides logical addressing and path determination. IP addresses serve as the logical identifiers that routers use to decide where to send packets next, guiding data from source to destination across many hops. Routers operate at this layer, making decisions based on the destination IP to forward traffic toward its endpoint. The Data Link Layer handles local, within-subnet delivery using MAC addresses and doesn't route between networks. The Transport Layer focuses on end-to-end delivery between processes, using ports and reliability features rather than network-wide addressing. The Application Layer deals with userServices and protocols rather than routing or addressing. So, IP addresses for routing are handled by the Network Layer.

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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://networksys1.examzify.com

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

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