INTERNET PROTOCOL VERSION 4 (IPV4) 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 formats can be used to depict an IPv4 address?

A. Dotted decimal only

B. Binary only

C. Hexadecimal only

D. Dotted decimal, binary, or hexadecimal

2. Which address range is reserved for private Class C networks?

A. 192.0.0.0–192.0.0.255

B. 192.168.0.0–192.168.255.255

C. 192.168.1.0–192.168.1.255

D. 192.168.0.0–192.168.0.255

3. Which statement correctly lists the three IPv4 address classes traditionally and their default masks?

A. Class A: 0.0.0.0–127.255.255.255 with default 255.0.0.0; Class B: 128.0.0.0–191.255.255.255 with 255.255.0.0; Class C: 192.0.0.0–223.255.255.255 with 255.255.255.0

B. Class A: 0.0.0.0–127.255.255.255 with 255.0.0.0; Class B: 128.0.0.0–191.255.255.255 with 255.0.0.0; Class C: 192.0.0.0–223.255.255.255 with 255.0.0.0

C. Class A: 0.0.0.0–127.255.255.255 with 255.0.0.0; Class B: 128.0.0.0–191.255.255.255 with 255.255.0.0; Class C: 192.0.0.0–223.255.255.255 with 255.255.0.0

D. Class A: 0.0.0.0–127.255.255.255 with 255.0.0.0; Class B: 128.0.0.0–191.255.255.255 with 255.255.0.0; Class C: 192.0.0.0–223.255.255.255 with 255.255.255.0

4. What does the network address in an IP address identify?

A. A host device

B. A network

C. The DNS server

D. The application layer service

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5. Name the private IPv4 address ranges for Class A, Class B, and Class C networks.

A. Class A private: 10.0.0.0–10.255.255.255; Class B private: 172.16.0.0–172.31.255.255; Class C private: 192.168.0.0–192.168.255.255.

B. Class A private: 10.0.0.0–10.0.0.255; Class B private: 172.16.0.0–172.31.255.255; Class C private: 192.0.0.0–192.0.0.255.

C. Class A private: 10.0.0.0–10.255.0.0; Class B private: 172.0.0.0–172.15.255.255; Class C private: 192.168.0.0–192.168.255.255.

D. Class A private: 10.0.0.0–10.255.255.255; Class B private: 172.16.0.0–172.31.255.255; Class C private: 192.0.0.0–192.0.0.0.

6. Which protocol resolves an IPv4 address to a MAC address on the local network?

A. ARP

B. DNS

C. ICMP

D. SNMP

7. Given 172.16.0.0/14, what is the network address and the broadcast address?

A. Network: 172.16.0.0; Broadcast: 172.16.0.0

B. Network: 172.19.0.0; Broadcast: 172.19.255.255

C. Network: 172.16.0.0; Broadcast: 172.16.255.255

D. Network: 172.16.0.0; Broadcast: 172.19.255.255.

8. What is the binary representation of an IP address?

A. A method of depicting an IP address using binary numbers (0s and 1s)

B. A decimal representation with dots

C. A hex representation

D. An octal representation

9. What is the difference between network addresses and host addresses?

A. Network addresses identify the network; host addresses identify individual machines.

B. Network addresses identify hosts; host addresses identify the network.

C. Both identify the same concept; no difference.

D. Network addresses identify routers only.

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10. What is the network address for a Class C network?

A. 192.168.0.0

B. 192.168.0.1

C. 192.168.100.0

D. 192.168.1.0

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Answers

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

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Explanations

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1. Which formats can be used to depict an IPv4 address?

A. Dotted decimal only

B. Binary only

C. Hexadecimal only

D. Dotted decimal, binary, or hexadecimal

IPv4 addresses are 32-bit values, so they can be shown in several numeral systems. The familiar dotted decimal format breaks the address into four octets and writes each in decimal, like 192.0.2.1. But that same 32-bit value can be displayed in binary as four groups of eight bits (11000000 00000000 00000010 00000001) or in hexadecimal as eight hex digits (C0 00 02 01). Each representation conveys the same address; they're just different ways to display the same underlying value. So the best answer is that IPv4 addresses can be depicted in dotted decimal, binary, or hexadecimal—any of these notations can represent the address depending on context.

2. Which address range is reserved for private Class C networks?

A. 192.0.0.0–192.0.0.255

B. 192.168.0.0–192.168.255.255

C. 192.168.1.0–192.168.1.255

D. 192.168.0.0–192.168.0.255

Private IPv4 addresses are set aside for internal networks and are not routable on the public Internet. For networks that use what used to be called Class C addressing, the private space is the block from 192.168.0.0 up to 192.168.255.255, which is the 192.168.0.0/16 range. This large block is what you typically see in home networks, with addresses like 192.168.0.x or 192.168.1.x. The other options represent smaller slices or different, non-private blocks. A single /24 within that private space (for example, 192.168.0.0–192.168.0.255 or 192.168.1.0–192.168.1.255) does not cover the entire private Class C range, and 192.0.0.0–192.0.0.255 is not part of the private ranges at all. Therefore, the range that is reserved for private Class C networks is 192.168.0.0–192.168.255.255.

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3. Which statement correctly lists the three IPv4 address classes traditionally and their default masks?

A. Class A: 0.0.0.0–127.255.255.255 with default 255.0.0.0; Class B: 128.0.0.0–191.255.255.255 with 255.255.0.0; Class C: 192.0.0.0–223.255.255.255 with 255.255.255.0

B. Class A: 0.0.0.0–127.255.255.255 with 255.0.0.0; Class B: 128.0.0.0–191.255.255.255 with 255.0.0.0; Class C: 192.0.0.0–223.255.255.255 with 255.0.0.0

C. Class A: 0.0.0.0–127.255.255.255 with 255.0.0.0; Class B: 128.0.0.0–191.255.255.255 with 255.255.0.0; Class C: 192.0.0.0–223.255.255.255 with 255.255.0.0

D. Class A: 0.0.0.0–127.255.255.255 with 255.0.0.0; Class B: 128.0.0.0–191.255.255.255 with 255.255.0.0; Class C: 192.0.0.0–223.255.255.255 with 255.255.255.0

In classful IPv4 addressing, the first octet determines the class and sets the default subnet mask, which defines how much of the address is used for the network versus hosts. Class A uses first octet 0–127 and a default mask of 255.0.0.0, meaning the first octet identifies the network and the remaining 24 bits identify hosts. Class B uses first octet 128–191 with a default mask of 255.255.0.0, giving 16 bits for the host portion. Class C uses first octet 192–223 with a default mask of 255.255.255.0, giving 24 bits for hosts. The statement listed aligns with these definitions: Class A range 0.0.0.0–127.255.255.255 with 255.0.0.0; Class B range 128.0.0.0–191.255.255.255 with 255.255.0.0; Class C range 192.0.0.0–223.255.255.255 with 255.255.255.0. It reflects the traditional boundaries and default masks used before CIDR. (Note: some addresses like 0.0.0.0 and 127.x.x.x have special meanings in practice, but they still fall within these classful ranges.) Other options mix the ranges and masks incorrectly, such as applying the wrong default mask to Class C or using a mask inappropriate for the class.

4. What does the network address in an IP address identify?

A. A host device

B. A network

C. The DNS server

D. The application layer service

In IPv4, an address is split into a network portion and a host portion based on the subnet mask. The network address identifies the network segment, not a single device. Routers use the network part to decide where to send a packet next, steering it toward the correct destination network. All devices on the same local network share that network address, while the host portion distinguishes each specific device on that network. The DNS server and application-layer service aren't identified by the network address itself—the DNS server has its own IP, and the service is identified by ports and protocols—not by the network prefix. Therefore, the network address identifies the network.

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5. Name the private IPv4 address ranges for Class A, Class B, and Class C networks.

A. Class A private: 10.0.0.0–10.255.255.255; Class B private: 172.16.0.0–172.31.255.255; Class C private: 192.168.0.0–192.168.255.255.

B. Class A private: 10.0.0.0–10.0.0.255; Class B private: 172.16.0.0–172.31.255.255; Class C private: 192.0.0.0–192.0.0.255.

C. Class A private: 10.0.0.0–10.255.0.0; Class B private: 172.0.0.0–172.15.255.255; Class C private: 192.168.0.0–192.168.255.255.

D. Class A private: 10.0.0.0–10.255.255.255; Class B private: 172.16.0.0–172.31.255.255; Class C private: 192.0.0.0–192.0.0.0.

Private IPv4 address ranges are set aside for use inside local networks and are not routable on the public Internet. They come from RFC 1918 to let organizations address internal devices without wasting public addresses, with Network Address Translation (NAT) used to reach the Internet. The correct private ranges are: - Class A private: 10.0.0.0 through 10.255.255.255 (the entire 10.0.0.0/8 block) - Class B private: 172.16.0.0 through 172.31.255.255 (the 172.16.0.0/12 block) - Class C private: 192.168.0.0 through 192.168.255.255 (the 192.168.0.0/16 block) These blocks are chosen to support networks of different sizes: a large 10.x network, a medium 172.16–172.31 range, and smaller 192.168 networks commonly used in home and small office setups. Other options mix incorrect boundaries or include non-private ranges (for example, ranges that don't cover the full /8, /12, or /16 blocks, or use 192.0.0.0, which is not private).

6. Which protocol resolves an IPv4 address to a MAC address on the local network?

A. ARP

B. DNS

C. ICMP

D. SNMP

Local address resolution is handled by ARP. When a device on a LAN needs to send an IPv4 packet to another host on the same network, it must know the destination's MAC address to place in the Ethernet frame. ARP fills this gap by broadcasting a request asking who has the specific IPv4 address, and the device that owns that IP replies with its MAC address. The requester stores this mapping in an ARP cache for quick reuse, so future packets can be sent without repeating the discovery. If the destination is outside the local network, ARP is still used, but only to reach the gateway's MAC address on the local segment—the router then takes over to forward the packet onward. DNS, ICMP, and SNMP don't resolve MAC addresses: DNS maps domain names to IPs, ICMP handles error messages and diagnostic traffic, and SNMP is for network management.

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7. Given 172.16.0.0/14, what is the network address and the broadcast address?

A. Network: 172.16.0.0; Broadcast: 172.16.0.0

B. Network: 172.19.0.0; Broadcast: 172.19.255.255

C. Network: 172.16.0.0; Broadcast: 172.16.255.255

D. Network: 172.16.0.0; Broadcast: 172.19.255.255.

When a CIDR of /14 is used, the subnet mask is 255.252.0.0. The network address comes from OR/AND operations that keep only the network bits: 172.16.0.0 AND 255.252.0.0 equals 172.16.0.0. The broadcast address uses the remaining host bits set to 1, which means OR-ing the network with the inverted mask (0.3.255.255). Doing that gives 172.16.0.0 OR 0.3.255.255 = 172.19.255.255. In this /14 block, the range spans from 172.16.0.0 to 172.19.255.255, so the network is 172.16.0.0 and the broadcast is 172.19.255.255.

8. What is the binary representation of an IP address?

A. A method of depicting an IP address using binary numbers (0s and 1s)

B. A decimal representation with dots

C. A hex representation

D. An octal representation

An IP address is stored as a 32-bit value, so its binary representation is the 0s and 1s that make up those bits. Each of the four octets is eight bits long, so you can write the address as a sequence of 32 bits. For example, 192.168.0.1 in binary is 11000000.10101000.00000000.00000001, or as a continuous 32-bit string: 11000000101010000000000000000001. The dotted-decimal form is just a human-friendly way to read those bits, while hex or octal are not standard representations for IPv4 addresses.

9. What is the difference between network addresses and host addresses?

A. Network addresses identify the network; host addresses identify individual machines.

B. Network addresses identify hosts; host addresses identify the network.

C. Both identify the same concept; no difference.

D. Network addresses identify routers only.

Think of an IPv4 address as having two parts: the network part and the host part. The boundary between them is set by the subnet mask. The network portion identifies which network the address belongs to, while the host portion identifies a specific device within that network. So, a network address is the identifier for the entire network itself. It's what routers look at to decide where to send packets heading to that network. A host address identifies an individual machine on that network, allowing packets to reach a particular device. For example, on a 192.168.1.0/24 network, the network address is 192.168.1.0, which labels the whole 192.168.1.0 to 192.168.1.255 range. The hosts within that network have addresses like 192.168.1.1 through 192.168.1.254. The 192.168.1.255 address is used for broadcast within that network. The other options don't fit because they mischaracterize what the two parts identify: one identifies the network versus a specific device, or claim there's no difference, or incorrectly says network addresses only identify routers.

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10. What is the network address for a Class C network?

A. 192.168.0.0

B. 192.168.0.1

C. 192.168.100.0

D. 192.168.1.0

In a Class C network, the network portion is the first three octets and the last octet is used for hosts. With the default subnet mask of 255.255.255.0, the network address is the one where the host part is all zeros—meaning the last octet is 0. So 192.168.100.0 is a valid network address for the 192.168.100.0/24 network because it follows that rule exactly: the first three octets identify the network, and the final octet is 0. The other options either have a nonzero host part (like 192.168.0.1) or would be the network address for different /24 networks (such as 192.168.0.0 or 192.168.1.0 for their respective networks).

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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://ipv4.examzify.com

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

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