

# Cisco Certified Network Associate (CCNA) Group Practice Exam (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. Which access method is used by Ethernet networks sharing a single collision domain?**
  - A. Token Ring**
  - B. CSMA/CD**
  - C. TDMA**
  - D. CSMA/CA**
  
- 2. Which Cisco IOS access level can be protected with passwords to restrict access to privileged commands?**
  - A. VTY interface**
  - B. Console interface**
  - C. Ethernet interface**
  - D. Privileged EXEC mode**
  
- 3. Which OSI layer provides framing and MAC addressing to enable local network transmission?**
  - A. Data Link Layer**
  - B. Transport Layer**
  - C. Network Layer**
  - D. Application Layer**
  
- 4. Which action describes how a Cisco switch builds its MAC address table?**
  - A. Using the source MAC addresses of frames to build and maintain a MAC address table**
  - B. Building a routing table based on the first IP address in the frame header**
  - C. Forwarding frames with unknown destination IP addresses to the default gateway**
  - D. Utilizing the MAC address table to forward frames via the destination MAC address**
  
- 5. What term describes the effective data rate that represents usable data transferred per unit time, excluding most protocol overhead?**
  - A. throughput**
  - B. goodput**
  - C. latency**
  - D. jitter**

- 6. What term describes a technology that allows devices to connect to the LAN using an electrical outlet?**
- A. Powerline Networking**
  - B. Internet**
  - C. Intranet**
  - D. Extranet**
- 7. An employee at a branch office needs to access confidential pricing from Head Office. What type of network would they access?**
- A. Intranet**
  - B. Internet**
  - C. Extranet**
  - D. Local Area Network**
- 8. What OSI physical layer term describes the physical medium that uses the propagation of light?**
- A. fiber-optic cable**
  - B. latency**
  - C. throughput**
  - D. goodput**
- 9. Which statement describes the effect of increasing distance on attenuation?**
- A. Attenuation increases with distance**
  - B. Attenuation decreases with distance**
  - C. Attenuation is unaffected**
  - D. Attenuation fluctuates randomly**
- 10. Which key completes abbreviated commands and parameters in the Cisco IOS CLI?**
- A. tab**
  - B. space bar**
  - C. up arrow**
  - D. ?**

## Answers

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

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## **Explanations**

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**1. Which access method is used by Ethernet networks sharing a single collision domain?**

- A. Token Ring**
- B. CSMA/CD**
- C. TDMA**
- D. CSMA/CA**

CSMA/CD governs access when Ethernet devices share a single collision domain. In this setup, each node listens before transmitting (carrier sense). If the channel is free, a node starts transmitting, but others may also transmit, causing a collision that all parties detect (collision detection). When a collision is detected, all transmitting nodes stop, wait for a random backoff period, and then try again. This approach works on a shared medium like coax or a hub where every device can hear every other device's signal, creating one collision domain. Modern Ethernet tends to use switches to separate collision domains, so CSMA/CD isn't needed on each link anymore. Other options don't apply here: token passing is used by Token Ring, time-division multiple access assigns fixed time slots (TDMA), and CSMA/CA is used in wireless networks to avoid collisions rather than detect them on a wired shared medium.

**2. Which Cisco IOS access level can be protected with passwords to restrict access to privileged commands?**

- A. VTY interface**
- B. Console interface**
- C. Ethernet interface**
- D. Privileged EXEC mode**

When you want to limit who can run the more powerful, configuration-related commands, you protect Privileged EXEC mode with a password (the enable password or, preferably, an enable secret). Users start in User EXEC mode with limited commands, and to execute privileged-level commands you enter Privileged EXEC mode by typing enable and authenticating. This is the level that directly gates access to privileged commands, so securing it controls who can perform configuration and admin tasks. Line types like the console or VTY can require passwords for login, but that only controls who can access the device; after logging in, reaching the privileged commands is determined by the enable password. An Ethernet interface isn't related to access control for command privilege.

**3. Which OSI layer provides framing and MAC addressing to enable local network transmission?**

- A. Data Link Layer**
- B. Transport Layer**
- C. Network Layer**
- D. Application Layer**

Framing and MAC addressing are handled by the Data Link Layer. This layer takes data from the Network Layer and wraps it into frames, adding a header with the destination and source MAC addresses and a trailer for error detection. The MAC address is a hardware identifier used to deliver frames to the correct device on the same local network segment, enabling local transmission. It also manages access to the shared medium. Routing and logical addressing (IP) happen at the Network Layer, while end-to-end reliability and porting reside in the Transport Layer. So, the Data Link Layer is responsible for framing and MAC addressing to enable local network transmission.

**4. Which action describes how a Cisco switch builds its MAC address table?**

- A. Using the source MAC addresses of frames to build and maintain a MAC address table**
- B. Building a routing table based on the first IP address in the frame header**
- C. Forwarding frames with unknown destination IP addresses to the default gateway**
- D. Utilizing the MAC address table to forward frames via the destination MAC address**

A switch learns where devices are by listening to the source MAC addresses on frames it receives. Each time a frame arrives on a port, the switch notes the frame's source MAC address and records that MAC as reachable via that port. Over time, this builds a MAC address table that maps each device's MAC to the port where it was seen. This is how the switch knows where to forward future frames destined for that MAC. That's why the correct action is describing building and maintaining the MAC address table from source MACs. The other options describe routing decisions or IP-related behavior, which belong to Layer 3 functionality or to forwarding decisions after the MAC table is already built, not to how the MAC table itself is constructed.

**5. What term describes the effective data rate that represents usable data transferred per unit time, excluding most protocol overhead?**

**A. throughput**

**B. goodput**

**C. latency**

**D. jitter**

This question is about the usable data rate that arrives at the application, excluding protocol overhead. Goodput is the rate at which useful payload data is transferred per unit time after removing the bytes used for headers, framing, acknowledgments, and any retransmissions. In other words, goodput measures the actual data the user cares about delivered each second, not the total bits that may include overhead. Throughput accounts for all data transferred successfully, including overhead, so it can be higher than the useful data rate. Latency is the time it takes for a single packet to reach the destination, and jitter is the variation in that delay, which are about timing rather than data rate.

**6. What term describes a technology that allows devices to connect to the LAN using an electrical outlet?**

**A. Powerline Networking**

**B. Internet**

**C. Intranet**

**D. Extranet**

Powerline networking uses existing electrical wiring in a building to carry data, letting devices connect to the LAN through power outlets. A pair of adapters plugged into outlets near the router and near devices conveys Ethernet traffic over the home's electrical wiring, often with the option to connect devices via Ethernet or extend wireless coverage. This approach avoids running new cables and can help reach rooms where Wi-Fi or Ethernet is difficult. Standards like HomePlug or G.hn govern how the signals are modulated over the wires, but the main idea is using power lines as the network medium. The other terms don't fit because the Internet is the global collection of networks, an intranet is a private network inside an organization, and an extranet extends that private network to selected external partners.

**7. An employee at a branch office needs to access confidential pricing from Head Office. What type of network would they access?**

- A. Intranet**
- B. Internet**
- C. Extranet**
- D. Local Area Network**

Accessing confidential pricing from Head Office relies on a private, organization-owned network that only employees can use. This is the intranet—an internal network that connects multiple offices and provides access to internal applications and data, such as pricing, with appropriate authentication and security. It isn't the public Internet, which is open to anyone and not suitable for handling sensitive information. An extranet, by contrast, extends some internal resources to selected external partners, which isn't the scenario here. A local area network describes the network within a single site, while an intranet typically spans multiple sites via a wider-area network or VPN. So, the branch employee would access Head Office resources through the intranet.

**8. What OSI physical layer term describes the physical medium that uses the propagation of light?**

- A. fiber-optic cable**
- B. latency**
- C. throughput**
- D. goodput**

Fiber-optic cable is the physical medium that uses light to carry signals. In the physical layer, the focus is on the actual media and signaling methods, and fiber-optic cables transmit data as light pulses, delivering very high bandwidth over long distances and resisting electrical interference. The other terms describe performance, not the medium: latency is the delay in delivering a bit, throughput is the raw data rate, and goodput is the useful payload rate after overhead. So fiber-optic cable best fits the description.

**9. Which statement describes the effect of increasing distance on attenuation?**

- A. Attenuation increases with distance**
- B. Attenuation decreases with distance**
- C. Attenuation is unaffected**
- D. Attenuation fluctuates randomly**

Attenuation is the loss of signal power as it travels through a medium or channel. The longer the path, the more energy is absorbed, scattered, or spread out, so the total attenuation accumulates with distance. In wired links, this is often given as a loss per unit length and is simply multiplied by distance to find the overall loss. In wireless, the signal weakens with distance due to spreading and environmental effects, described by propagation models like free-space path loss. Because these effects accumulate as distance increases, attenuation rises as distance grows.

**10. Which key completes abbreviated commands and parameters in the Cisco IOS CLI?**

- A. tab**
- B. space bar**
- C. up arrow**
- D. ?**

The Tab key is used to complete abbreviated commands and parameters in the Cisco IOS CLI. When you type part of a command or a parameter and press Tab, the CLI fills in the rest if there's a unique match, speeding up input and reducing typos. If more than one command could match what you typed, pressing Tab twice will show you the possible options so you can pick the right one. In contrast, the space bar just moves to the next token, the up arrow recalls previous commands, and the question mark lists available options rather than auto-completing. So the Tab key is the one that completes abbreviated commands and parameters.

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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](mailto:hello@examzify.com).**

**Or visit your dedicated course page for more study tools and resources:**

**<https://ccnagroup.examzify.com>**

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

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