NCTI FIELD TECH IV PROGRESSION PRACTICE EXAM (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 choices are TCP features?

A. Flow control

B. Packet error recovery

C. Demultiplexing multiple applications

D. All of the above

2. At which point in a one-way, multiple hop, end-to-end IP communications session will a frame have to be built?

A. At the sending host's LAN port

B. At the receiving host's LAN port

C. At the sender's gateway

D. At each hop's router outbound port

3. What process allows network administrators to create smaller network addresses from a single network address?

A. Routing

B. Subnetworking

C. Subnetting

D. Segmenting

4. Which ISDN feature allows for multiple calls to be transferred to another line?

A. Call forwarding

B. Call transfer

C. Call waiting

D. Caller ID

5. What device allows multiple telephone extensions to access a group of single telephone lines?

A. Key system

B. Hub

C. Router

D. Switchboard

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6. At what point does end-to-end delay in a voice conversation generally become unacceptable?

A. 200 ms

B. 300 ms

C. 400 ms

D. 500 ms

7. What is an advantage of using an intranet?

A. It is accessible to the general public

B. It provides a controlled environment for information sharing

C. It limits data sharing to only external entities

D. It eliminates all network security issues

8. Which command is used to request the network address from a DHCP server?

A. DHCPREQUEST

B. DHCPDISCOVER

C. ARP

D. Netstat

9. Which technology typically minimizes end-to-end delay in voice communication?

A. Packet Switching

B. Circuit Switching

C. Data Compression

D. A/V Synchronization

10. How much bandwidth in a T1 circuit is dedicated to control information?

A. 32 Kbps

B. 64 Kbps

C. 128 Kbps

D. 256 Kbps

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Answers

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

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Explanations

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1. Which choices are TCP features?

A. Flow control

B. Packet error recovery

C. Demultiplexing multiple applications

D. All of the above

TCP, or Transmission Control Protocol, is a fundamental protocol used in the Internet Protocol Suite that provides several key features to ensure reliable communication across networks. Understanding these features is essential for managing data transmission effectively. Flow control is a mechanism that ensures a sender does not overwhelm a receiver with data. By managing the rate of data transmission, TCP can maintain the performance of the communication link and adapt to varying network conditions. Packet error recovery is another critical function of TCP. It employs acknowledgment (ACK) messages to confirm the receipt of data packets. If packets are lost or corrupted during transmission, TCP can identify the missing data through sequence numbers and retransmit them, ensuring that the data stream remains intact and consistent. Demultiplexing multiple applications refers to TCP's ability to support multiple connections simultaneously. It does this through the use of port numbers, allowing different applications to send and receive data over the same network connection without interfering with one another. This way, TCP can direct incoming data to the correct application based on the specified port number. Given these comprehensive features—flow control, packet error recovery, and demultiplexing multiple applications—it is clear that the complete set of important TCP characteristics is covered, making the choice that includes all of these features the correct answer.

2. At which point in a one-way, multiple hop, end-to-end IP communications session will a frame have to be built?

A. At the sending host's LAN port

B. At the receiving host's LAN port

C. At the sender's gateway

D. At each hop's router outbound port

In a one-way, multiple hop, end-to-end IP communications session, a frame needs to be constructed at the outbound port of each hop's router. This is because, at each hop, the data packet must be encapsulated into a frame suitable for the specific link layer technology that connects the router to the next network segment. When data is transmitted across networks, it is sent in packets at the network layer (IP layer), but to move those packets over physical mediums, they must be framed. Each router examines the incoming packet, processes it (which can include routing decisions), and then builds a new frame to send it out on the respective outbound link, which may involve adjusting for things like the frame format, address encapsulation, and error checking. Considering the options provided: while the sending host's LAN port is responsible for building the initial frame for transmission, this question specifically focuses on the scenario involving multiple hops. The receiving host won't build a frame until it's processing the final arrival, but that doesn't apply to the hops in between. The sender's gateway performs routing but does not need to build a new frame unless it is the first router in the path. Thus, the crucial framing activity occurs at each hop's router as they pass the

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3. What process allows network administrators to create smaller network addresses from a single network address?

A. Routing

B. Subnetworking

C. Subnetting

D. Segmenting

The process that allows network administrators to create smaller network addresses from a single network address is known as subnetting. Subnetting divides a larger network into smaller, more manageable sub-networks or subnets. This is useful for several reasons, including improved network performance, better organization, and enhanced security. By using subnetting, an organization can effectively allocate its IP address space, allowing for more efficient utilization of addresses and minimizing waste. Each subnet can operate independently while still being part of the larger overall network, which can facilitate easier management and troubleshooting. In practice, subnetting involves using a subnet mask to identify the network and host portions of an IP address. This allows the network to support multiple smaller networks, each with its own range of addresses. This greater control over network traffic and organization can help improve security and performance within the network infrastructure.

4. Which ISDN feature allows for multiple calls to be transferred to another line?

A. Call forwarding

B. Call transfer

C. Call waiting

D. Caller ID

The feature that allows for multiple calls to be transferred to another line is called call transfer. This function enables a user to divert an active call to another line, facilitating the continuation of the conversation without disrupting the communication flow. In the context of ISDN, it is particularly useful as it allows for the efficient handling of multiple incoming calls. Call transfer can be essential in situations where a user needs to pass a call to a colleague or an available line, ensuring that calls are not missed and can be addressed by the appropriate party. This capability enhances the management of communication within organizations. While the other features are related to call handling, they serve different purposes. Call forwarding directs calls to another number but does not involve transferring an active call; call waiting alerts the user about an incoming call while they are already on a call, allowing them to switch between calls without transferring; caller ID simply displays the number of the incoming caller but does not manage call flow. Each of these features plays a role in call management, but call transfer is specifically designed for the purpose described in the question.

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5. What device allows multiple telephone extensions to access a group of single telephone lines?

A. Key system

B. Hub

C. Router

D. Switchboard

The device that allows multiple telephone extensions to access a group of single telephone lines is a key system. A key system is designed to support several telephone lines and allows users to manage the lines and their extensions efficiently. This system typically features buttons that users can press to connect calls, transfer calls, or place calls on hold, facilitating effective communication within a business or organization. In contrast, a hub is a basic networking device used for connecting multiple computers within a local area network (LAN) but does not relate to telephone systems. A router is a device that connects different networks and directs data packets between them, primarily used for internet connectivity rather than directly managing telephone lines. A switchboard, while historically used for handling telephone calls, does not specifically refer to a device that accurately represents modern multi-line systems like a key system does. Therefore, the key system is the most appropriate answer for managing multiple extensions to a set of incoming lines.

6. At what point does end-to-end delay in a voice conversation generally become unacceptable?

A. 200 ms

B. 300 ms

C. 400 ms

D. 500 ms

In a voice conversation, end-to-end delay refers to the total time taken for a voice packet to travel from the sender to the receiver and for the receiver's response to be sent back. Generally, for a conversation to feel natural and fluid, there are thresholds for what constitutes an acceptable delay. The acceptable end-to-end delay for voice conversations is widely considered to be around 150 ms to 250 ms. Delays beyond this threshold can start to cause issues such as increased talk-over and interruptions between speakers, as well as affecting the overall experience of the conversation. When delay reaches approximately 400 ms, it becomes increasingly noticeable, leading to problems such as awkward pauses in conversation where neither participant knows when the other has finished speaking. At 500 ms, the delay is typically deemed unacceptable for real-time communication, resulting in significant negative impacts on the quality of interaction, making it difficult for participants to maintain a natural conversation flow. Thus, the threshold of 500 ms is widely recognized as unacceptable for voice communication, as it introduces significant latency that disrupts the conversational dynamics.

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7. What is an advantage of using an intranet?

A. It is accessible to the general public

B. It provides a controlled environment for information sharing

C. It limits data sharing to only external entities

D. It eliminates all network security issues

Using an intranet provides a controlled environment for information sharing, which is one of its primary advantages. This internal network is designed for a specific organization or group, ensuring that only authorized users have access to sensitive or proprietary information. In this secure setting, information can be easily shared and communicated among employees, enhancing collaboration and efficiency without the risks associated with public access. The control over who accesses the intranet allows for better governance of the information being shared. Organizations can implement security protocols, manage user permissions, and monitor network activity, thereby safeguarding against data breaches and unauthorized access. This advantage is particularly important for businesses that handle confidential data and require a reliable communication platform for their operations.

8. Which command is used to request the network address from a DHCP server?

A. DHCPREQUEST

B. DHCPDISCOVER

C. ARP

D. Netstat

The command used to request the network address from a DHCP server is DHCPREQUEST. This command is part of the DHCP (Dynamic Host Configuration Protocol) process which enables a client device to obtain IP configuration settings from a server automatically. During the DHCP process, the client first sends a DHCPDISCOVER message to locate available DHCP servers on the network. Once the client receives offers from the servers (in the form of DHCP Offer messages), it chooses one and responds with a DHCPREQUEST message. This message specifically indicates the server that the client is accepting an offer from and also formally requests the IP address assignment. The importance of the DHCPREQUEST command lies in its role in completing the process of IP address allocation, allowing the client to finalize its configuration with the selected server. The other options do not pertain to the specific action of requesting an IP address from a DHCP server. For instance, ARP (Address Resolution Protocol) is used for mapping IP addresses to MAC addresses, and netstat is a utility for network statistics, neither of which are involved in DHCP communication.

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9. Which technology typically minimizes end-to-end delay in voice communication?

A. Packet Switching

B. Circuit Switching

C. Data Compression

D. A/V Synchronization

Circuit switching is the technology that typically minimizes end-to-end delay in voice communication. This method establishes a dedicated communication path between two endpoints for the duration of the call. By creating a fixed communication route, circuit switching ensures that the data packets for the voice communication can travel consistently without encountering interruptions, which typically results in lower latency. In contrast, packet switching, which divides data into packets sent independently through the most efficient routes, can introduce varying levels of delay as packets may take different paths and arrive out of order, leading to a potential increase in overall delay during voice communications. Data compression, while helpful in reducing the bandwidth requirements, does not inherently guarantee a reduction in delay associated with transmission. A/V synchronization pertains more to aligning audio and visual media in applications rather than optimizing voice call latency. Therefore, for applications that demand low-latency communication, such as voice calls, circuit switching is the preferred technology because of its ability to maintain a steady and immediate connection throughout the conversation.

10. How much bandwidth in a T1 circuit is dedicated to control information?

A. 32 Kbps

B. 64 Kbps

C. 128 Kbps

D. 256 Kbps

A T1 circuit consists of 24 voice channels, each capable of transmitting data at a rate of 64 Kbps. This totals to a bandwidth of 1.544 Mbps (which is essentially 24 channels × 64 Kbps). However, it's important to note that a portion of this capacity is reserved for control information, specifically for signaling and managing the connection. In a T1 circuit, 64 Kbps is allocated for the control channel, which serves multiple purposes. This includes providing the necessary signaling between the endpoints and managing the various channels of voice or data traffic. The remaining bandwidth is available for the actual data or voice transmission. Understanding the allocation of bandwidth in a T1 circuit helps in comprehending how digital telecommunications operates, ensuring that both data and control information can be effectively balanced to maintain service quality and reliability. This management of bandwidth is crucial for optimizing performance in telecommunication systems.

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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://nctifieldtech4progression.examzify.com

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

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