

# NCTI Field Tech V to VI 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

- 1. Which subnet mask will Paula use to divide her 192.168.100.0 network into two smaller networks?**
  - A. 255.255.255.0**
  - B. 255.255.255.128**
  - C. 255.255.255.192**
  - D. 255.255.255.240**
- 2. What is a good practice to use when installing an AP in a hospital room or dormitory where people sleep?**
  - A. Enable maximum power for better coverage**
  - B. Disable the LEDs on the AP and only temporarily enable them when troubleshooting**
  - C. Place the AP near the bed for stronger signal**
  - D. Use open channels to avoid interference**
- 3. Which strategy is most effective when determining the functionality of installed equipment?**
  - A. Testing each device sequentially**
  - B. Consulting the installation manual**
  - C. Disabling all other equipment**
  - D. Gathering input from various involved parties**
- 4. What is the best way to gather information for a clear problem statement?**
  - A. Consult online forums for similar issues**
  - B. Leverage multiple sources like staff, maintenance, and affected individuals**
  - C. Check the user manuals for the equipment**
  - D. Rely solely on the customer's explanation**
- 5. What is a network protocol?**
  - A. A device that connects users to the internet**
  - B. An operation capacity of servers**
  - C. A set of rules defining data transmission and reception**
  - D. A type of network hardware**

- 6. Which characteristic is associated with a connectionless protocol like UDP?**
- A. Reliable data transfer with delivery confirmation**
  - B. Establishment of a connection before data transmission**
  - C. Faster data transfer with no guarantees of delivery**
  - D. More secure data transmission**
- 7. What is 'load balancing' used for in networking?**
- A. To manage data encryption protocols**
  - B. To distribute user sessions evenly across servers**
  - C. To monitor network security**
  - D. To increase network latency**
- 8. What does 'data encapsulation' mean in networking?**
- A. The method of securing data from unauthorized access**
  - B. The process of wrapping data with protocol information at each layer of the OSI model**
  - C. The technique of compressing data to reduce bandwidth usage**
  - D. The approach of storing data in a cloud system**
- 9. What is the result of 5 GHz wavelengths being shorter than 2.4 GHz wavelengths?**
- A. 5 GHz waves penetrate walls better**
  - B. 5 GHz waves have a lower indoor range than 2.4 GHz waves**
  - C. 5 GHz waves are more stable over long distances**
  - D. 5 GHz waves provide faster speeds indoors**
- 10. What is a VPN primarily used for?**
- A. To enhance network speed**
  - B. To provide a secure connection over the internet to protect user privacy**
  - C. To connect multiple networks**
  - D. To improve hardware performance**



## **Answers**

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

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## **Explanations**

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**1. Which subnet mask will Paula use to divide her 192.168.100.0 network into two smaller networks?**

- A. 255.255.255.0
- B. 255.255.255.128**
- C. 255.255.255.192
- D. 255.255.255.240

To divide the 192.168.100.0 network into two smaller networks, a subnet mask that allows for the creation of at least two subnets is required. In this case, the choice of 255.255.255.128 is the correct subnet mask because it effectively halves the available address space. When examining the default subnet mask for a Class C network, which is 255.255.255.0, this mask provides one network with 256 IP addresses (0-255). By using 255.255.255.128, the subnet mask is modified to provide two subnets, each offering 128 addresses (0-127 for the first subnet and 128-255 for the second subnet). This means that Paula can create two smaller networks within the original network address. Using the subnet mask of 255.255.255.128 results in a change from the fourth octet where the last bit is used to differentiate between the two subnets. This is a common practice in subnetting, allowing for efficient use of IP address space while meeting the needs of different network segments. Choosing a mask like 255.255.255.192 or 255.255.255.240 would provide more subnetting

**2. What is a good practice to use when installing an AP in a hospital room or dormitory where people sleep?**

- A. Enable maximum power for better coverage
- B. Disable the LEDs on the AP and only temporarily enable them when troubleshooting**
- C. Place the AP near the bed for stronger signal
- D. Use open channels to avoid interference

Disabling the LEDs on the access point (AP) and only temporarily enabling them when troubleshooting is a good practice in sleep environments such as hospital rooms or dormitories. The reason this is considered a best practice is primarily due to the impact of light on human comfort and sleep quality. In spaces designed for rest, bright or flashing lights can be disruptive to individuals trying to sleep, potentially leading to discomfort or disturbances in their rest. By turning off the LEDs, the AP minimizes light pollution, creating a more conducive atmosphere for relaxation and sleep. This approach allows for a balance between maintaining connectivity and ensuring that individuals in those environments are not disturbed by unnecessary light emissions. While maximizing power for coverage can seem beneficial, it could lead to interference with other devices, adding noise in a sensitive environment. Placing an AP too close to a bed may cause excessive signal strength and can also interfere with sleep quality due to possible electromagnetic exposure concerns. Lastly, using open channels to avoid interference is technically sound but does not specifically address the sensitivity of people in sleep settings where light sources are more relevant.

**3. Which strategy is most effective when determining the functionality of installed equipment?**

- A. Testing each device sequentially**
- B. Consulting the installation manual**
- C. Disabling all other equipment**
- D. Gathering input from various involved parties**

The most effective strategy for determining the functionality of installed equipment is to gather input from various involved parties. This approach leverages the knowledge and expertise of multiple stakeholders, such as technicians, operators, and end-users, which can provide a comprehensive understanding of how the equipment is expected to function in real-world scenarios. Different perspectives can reveal issues that may not be immediately apparent when relying solely on individual testing or documentation. By engaging those who regularly interact with the equipment, you can obtain valuable insights into its performance, potential problems, and any nuances in its operation. This collaborative effort can lead to a more thorough evaluation of functionality and may help identify solutions or adjustments that improve overall performance. In contrast, other strategies, like testing each device sequentially, may not capture the interdependencies and complexities of the entire system, while consulting installation manuals can provide guidelines but lacks practical input. Disabling all other equipment is also not a practical method, as it can disrupt normal operations and may not reveal issues related to the equipment's integration into a larger ecosystem.

**4. What is the best way to gather information for a clear problem statement?**

- A. Consult online forums for similar issues**
- B. Leverage multiple sources like staff, maintenance, and affected individuals**
- C. Check the user manuals for the equipment**
- D. Rely solely on the customer's explanation**

Gathering information for a clear problem statement is crucial in accurately diagnosing and resolving issues. Leveraging multiple sources—including staff, maintenance personnel, and affected individuals—provides a well-rounded view of the situation. Each source can offer unique insights and perspectives. Staff may have historical knowledge about recurring issues, maintenance teams can provide technical information, and individuals affected by the problem can share their firsthand experiences and symptoms. This multi-faceted approach helps uncover details that may not be apparent from a single viewpoint, leading to a more comprehensive understanding of the problem. By collecting diverse insights, you can validate facts, clarify ambiguous points, and avoid potential biases that could arise from relying on just one source, such as the customer's explanation alone. Relying solely on what one individual says may overlook critical context or underlying issues, resulting in an incomplete or inaccurate problem statement. In summary, utilizing a variety of sources ensures that the problem statement is grounded in a broader context, facilitating more effective troubleshooting and resolution.

## 5. What is a network protocol?

- A. A device that connects users to the internet
- B. An operation capacity of servers
- C. A set of rules defining data transmission and reception**
- D. A type of network hardware

A network protocol refers to a set of rules and conventions that determine how data is transmitted and received over a network. This includes the format of the messages, the timing of data transmissions, error handling, and the process of establishing connections between devices. By adhering to these established guidelines, devices can communicate effectively, ensuring that data sent from one device can be properly understood and processed by another. Understanding network protocols is crucial for effective network communication because they enable interoperability between different hardware and software systems. Protocols are foundational for operations in various network scenarios, including local area networks (LANs), wide area networks (WANs), and the internet itself. The clarity and order provided by network protocols are what enable different devices and applications to function cohesively within diverse network environments.

## 6. Which characteristic is associated with a connectionless protocol like UDP?

- A. Reliable data transfer with delivery confirmation
- B. Establishment of a connection before data transmission
- C. Faster data transfer with no guarantees of delivery**
- D. More secure data transmission

A connectionless protocol, such as UDP (User Datagram Protocol), is characterized by its approach to data transmission, which does not involve the overhead of establishing a connection before sending data. This means that UDP allows for faster data transfer since it bypasses the connection establishment phase seen in connection-oriented protocols like TCP (Transmission Control Protocol). One of the key features of UDP is that it sends data packets as independent units called datagrams, without ensuring that they reach their destination. There is no delivery confirmation or error correction, which is why it is considered a "connectionless" protocol. This approach is particularly beneficial in scenarios where speed is critical and occasional data loss is acceptable, such as in live audio or video streaming. In contrast to the other options, reliable data transfer with delivery confirmation is a characteristic of connection-oriented protocols, while connections established before data transmission are also specific to these types of protocols. With regard to security, UDP does not inherently provide more security than other protocols; the security features depend on additional layers rather than the protocol itself. Therefore, the significant takeaway is that the nature of UDP allows for rapid transmission of data without guarantees, making option C the correct choice.

## 7. What is 'load balancing' used for in networking?

- A. To manage data encryption protocols
- B. To distribute user sessions evenly across servers**
- C. To monitor network security
- D. To increase network latency

Load balancing is used in networking to distribute user sessions evenly across servers. This process ensures that no single server becomes overwhelmed with too much traffic, which can lead to poor performance, downtime, or service interruptions. By effectively managing the distribution of incoming network traffic, load balancing enhances the efficiency and reliability of applications and services, allowing for better resource utilization and improved response times. Additionally, it helps to ensure high availability; if one server fails, the load balancer can redirect traffic to other servers that are operational, thus maintaining service continuity for users. The correct choice highlights how load balancing plays a crucial role in optimizing server performance and maintaining user experience in any system reliant on multiple servers.

## 8. What does 'data encapsulation' mean in networking?

- A. The method of securing data from unauthorized access
- B. The process of wrapping data with protocol information at each layer of the OSI model**
- C. The technique of compressing data to reduce bandwidth usage
- D. The approach of storing data in a cloud system

Data encapsulation in networking refers to the process of wrapping data with protocol information at each layer of the OSI model. This is a fundamental concept in network communication as it allows data to be properly formatted and addressed for transmission across various network protocols. When data is prepared for transmission, it is passed down through the layers of the OSI model, starting from the application layer down to the physical layer. At each layer, additional headers (and sometimes trailers) are added to the original data. These headers contain important information needed for the data to reach its destination, such as addressing, error checking, and sequencing. This method of encapsulation ensures that the data is not only sent correctly but also that it can be understood by the receiving device, which de-encapsulates the data by stripping away the headers as the information moves up through the layers in reverse order. This concept is central to the functioning of network protocols, as it allows different networks and devices to communicate seamlessly, even if they use different internal methods of data handling. Hence, the correct understanding of data encapsulation is essential for anyone working in networking and telecommunications.

**9. What is the result of 5 GHz wavelengths being shorter than 2.4 GHz wavelengths?**

- A. 5 GHz waves penetrate walls better**
- B. 5 GHz waves have a lower indoor range than 2.4 GHz waves**
- C. 5 GHz waves are more stable over long distances**
- D. 5 GHz waves provide faster speeds indoors**

The choice that highlights the result of 5 GHz wavelengths being shorter than 2.4 GHz wavelengths reflects the fundamental properties of radio wave propagation. In general, shorter wavelengths, such as those used by the 5 GHz frequency, tend to result in less penetration through obstacles like walls and other barriers compared to longer wavelengths, such as 2.4 GHz. As a consequence, 5 GHz waves typically have a lower indoor range due to increased attenuation as they encounter obstacles. This lower indoor range manifests in scenarios where devices connected over the 5 GHz band might experience reduced connectivity in comparison to those operating on the 2.4 GHz band, especially in environments with numerous walls or structural barriers. Lower penetration capability directly impacts the effective range indoors, making it more challenging for 5 GHz signals to maintain a strong connection relative to 2.4 GHz signals. Understanding this relationship is crucial for optimal network planning and deployment in environments where signal strength and indoor coverage are essential factors.

**10. What is a VPN primarily used for?**

- A. To enhance network speed**
- B. To provide a secure connection over the internet to protect user privacy**
- C. To connect multiple networks**
- D. To improve hardware performance**

A VPN, or Virtual Private Network, is primarily used to provide a secure connection over the internet, which plays a crucial role in protecting user privacy. When users connect to the internet through a VPN, their data is encrypted, creating a secure tunnel that safeguards against eavesdropping, hacking, and data breaches. This is particularly important when using public Wi-Fi networks, where personal information can be vulnerable to interception. Moreover, VPNs can mask the user's IP address, making their online activities more anonymous. This added layer of security helps users maintain their privacy and protects sensitive information from potential cyber threats. The other options, while they touch on relevant aspects of networking, do not accurately capture the primary function of a VPN. Enhancing network speed, for instance, may occur as a byproduct in some scenarios, yet that is not the primary purpose of a VPN. Similarly, while VPNs can connect multiple networks, their main function is about securing a user's data during transmission rather than merely establishing network connections. Improving hardware performance is not something that a VPN addresses at all, as it focuses on software-level security rather than affecting hardware capabilities.



## 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://nctifieldtech5to6.examzify.com>**

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