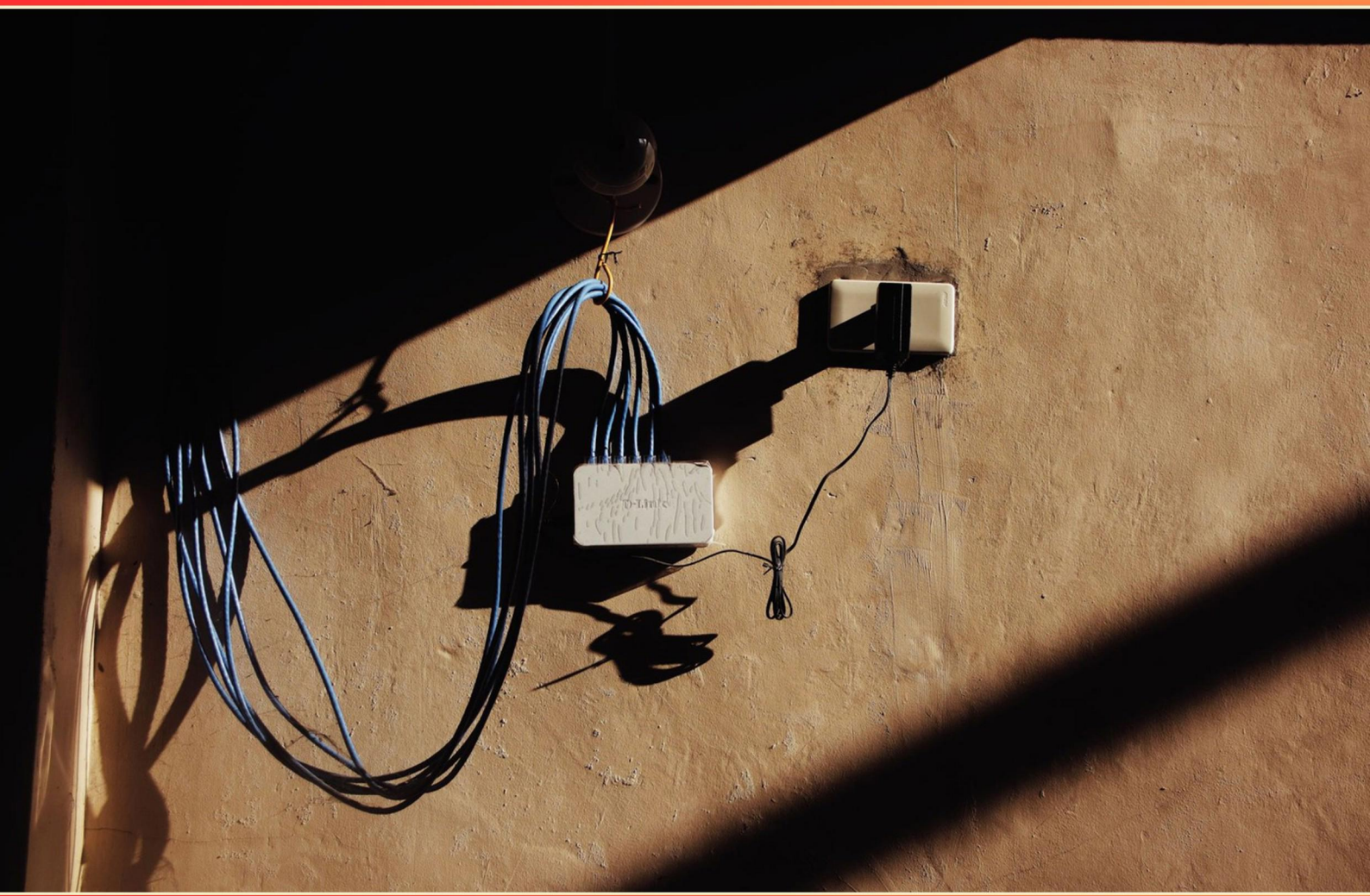
WESTERN GOVERNORS UNIVERSITY (WGU) ITEC2112 D315 NETWORK AND SECURITY - FOUNDATIONS PRE-ASSESSMENT PRACTICE EXAM (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

VISIT US ONLINE FOR THE FULL VERSION STUDY GUIDE

https://wgu-itec2112-d315-preassessment.examzify.com

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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. What is the role of a proxy server?

A. A server that uses a packet filtering type of firewall.

B. A server that uses packet inspection to prevent attacks.

C. A server that authenticates and makes requests on behalf of another system on the network.

D. A server that manages mobile devices when connected to the network.

2. Which term refers to a method of increasing privileges for unauthorized access?

A. Brute force attack

B. Privilege escalation

C. Denial of service

D. Social engineering

3. Which command should be used to manually enter the default gateway for a computer?

A. route

B. ipconfig

C. arp

D. netstat

4. Which scenario best exemplifies a Wide Area Network (WAN)?

A. A small office with a Switch and Router.

B. A company that has a network deployed in 9 countries on 3 continents.

C. A house equipped with a home router.

D. A University Campus that uses a VPN to connect the new research building.

5. What protocol is the best choice for encrypting communication between a website and its users?

A. TLS

B. AES

C. 3DES

D. TKIP

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6. A company provides access to employees' tax and personal information via a public-facing web portal. What should the company implement to encrypt employees' web access to this information?

A. Transport layer security (TLS)

B. Network intrusion detection system (NIDS)

C. Advanced encryption standard (AES)

D. Two-factor authentication (2FA)

7. What is the purpose of cybersecurity training for employees?

A. To increase productivity

B. To ensure compliance with regulations

C. To reduce the risk of security breaches

D. To familiarize them with software

8. What type of information does the ipconfig command provide?

A. Network settings

B. User account information

C. Hardware specifications

D. Software versions

9. Which two layers of the OSI model correspond to the first layer of the TCP/IP model?

A. Data Link

B. Session

C. Presentation

D. Physical

10. What does BYOD stand for in a security context?

A. Bring Your Own Device

B. Bring Your Own Data

C. Bring Your Own Domain

D. Bring Your Own Development

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Answers

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

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Explanations

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1. What is the role of a proxy server?

A. A server that uses a packet filtering type of firewall.

B. A server that uses packet inspection to prevent attacks.

C. A server that authenticates and makes requests on behalf of another system on the network.

D. A server that manages mobile devices when connected to the network.

A proxy server acts as an intermediary between a client and the destination server, playing a critical role in how requests and data are handled across a network. When a client makes a request for information, the proxy server receives that request and can perform several functions before forwarding it to the appropriate server. In the context of this question, the correct answer highlights that a proxy server authenticates and makes requests on behalf of the client. This setup provides multiple benefits, including enhanced security, as the proxy can hide the client's actual IP address from the destination server, protecting user privacy. Additionally, proxy servers can cache frequently accessed content, which speeds up response times and reduces bandwidth usage. They may also filter requests based on policies set by network administrators to block access to certain websites or content. The other options describe different types of server functionalities that do not align with the primary operations of a proxy server. For instance, using packet filtering or packet inspection pertains more to firewall functions rather than the specific role of a proxy. Managing mobile devices or authenticating in the context of direct user validation also deviates from a proxy's primary function. Thus, the unique responsibility of a proxy server in facilitating requests on behalf of clients encapsulates its essential role in network architecture and security.

2. Which term refers to a method of increasing privileges for unauthorized access?

A. Brute force attack

B. Privilege escalation

C. Denial of service

D. Social engineering

The term that describes the method of increasing privileges for unauthorized access is privilege escalation. This concept is vital in the context of cybersecurity, as it involves taking advantage of system vulnerabilities or flaws to gain higher access levels than originally granted. An attacker may initially gain limited access to a system, but through privilege escalation techniques, they can execute commands or access data as if they were an authorized administrator or user with elevated permissions. Privilege escalation can occur through various means, such as exploiting software bugs, misconfigurations, or other weaknesses within a system. Understanding this process is crucial for network and security professionals as it highlights the importance of securing systems against unauthorized access and implementing stringent access controls. In contrast, brute force attacks involve systematically trying every possible combination of passwords to gain access, but do not inherently involve elevating privileges. Denial of service refers to overwhelming a service or network to make it unavailable, without involving unauthorized access. Social engineering, while it can trick individuals into revealing sensitive information, does not specifically focus on increasing privileges once inside a system. Thus, the correct association for this method of unauthorized access is indeed privilege escalation.

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3. Which command should be used to manually enter the default gateway for a computer?

A. route

B. ipconfig

C. arp

D. netstat

The command that is used to manually enter the default gateway for a computer is the route command. This command interacts with the IP routing tables in a computer's operating system. By using route, you can add, delete, or modify the routes that dictate how packets find their way to the specified destination, including the default gateway. Setting the default gateway is crucial for enabling a computer to communicate outside its local network. The default gateway serves as a routing device that forwards packets from the local network to other networks. While ipconfig can display the current configuration of the default gateway and other network settings, it does not allow for manual entry or modification of those settings. The arp command is used for managing the Address Resolution Protocol cache, which maps IP addresses to MAC addresses, but it does not deal with routing. Netstat is primarily used for displaying network connections and statistics, which also does not involve setting the default gateway.

4. Which scenario best exemplifies a Wide Area Network (WAN)?

A. A small office with a Switch and Router.

B. A company that has a network deployed in 9 countries on 3 continents.

C. A house equipped with a home router.

D. A University Campus that uses a VPN to connect the new research building.

The scenario that best exemplifies a Wide Area Network (WAN) is one in which a company has a network deployed in multiple countries across various continents. A WAN is characterized by its ability to connect devices and locations that are physically distant from each other, often spanning large geographical areas. In this case, the company's deployment in nine countries on three continents demonstrates a wide geographical coverage, which is a fundamental aspect of WANs. WANs typically utilize various communication technologies, such as leased lines, satellite links, or cellular networks, to connect different local area networks (LANs) or individual devices across extensive distances. This capability is essential for multinational organizations that require consistent and reliable communication and data transfer between their offices situated in different parts of the world. The complexity and scale involved in managing such a network further underline its classification as a WAN. In contrast, the other scenarios describe much smaller and localized networks. A small office network with a switch and router operates within a limited space and does not extend beyond its immediate environment, while a home network with a router connects devices within a residence. Similarly, a university campus network, even though it might utilize VPN technology, remains confined to a specific geographic location. Therefore, these examples do not represent the characteristics of a WAN

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5. What protocol is the best choice for encrypting communication between a website and its users?

A. TLS

B. AES

C. 3DES

D. TKIP

The best choice for encrypting communication between a website and its users is TLS (Transport Layer Security). TLS is a cryptographic protocol designed to provide secure communication over a computer network. It is widely used to secure web traffic, ensuring that data transmitted between a web server and a browser remains confidential and integral. TLS encrypts the data sent over the internet, protecting it from eavesdropping, tampering, and forgery. One of the key features of TLS is its ability to establish a secure connection, which involves the negotiation of cryptographic keys and mechanism to ensure that both parties are authenticated and can communicate securely. This is crucial for protecting sensitive user information, such as personal details and financial data, during online transactions. While AES (Advanced Encryption Standard) is an encryption algorithm used for encrypting data, it operates at a lower level than TLS. AES can be utilized within the TLS protocol to encrypt the data being transmitted, but by itself, it does not provide the full suite of features, including secure sessions, authentication, and integrity checks that TLS offers. 3DES (Triple Data Encryption Standard) is another encryption method but is considered outdated and less secure compared to modern standards like AES and TLS. TKIP (Temporal Key Integrity Protocol) is

6. A company provides access to employees' tax and personal information via a public-facing web portal. What should the company implement to encrypt employees' web access to this information?

A. Transport layer security (TLS)

B. Network intrusion detection system (NIDS)

C. Advanced encryption standard (AES)

D. Two-factor authentication (2FA)

Implementing Transport Layer Security (TLS) is essential for encrypting web access to sensitive information, such as employees' tax and personal data, accessible through a public-facing web portal. TLS is a cryptographic protocol that ensures secure communication over a computer network. It provides confidentiality, integrity, and authenticity of data during transmission by encrypting the data between the user's browser and the web server. This encryption protects sensitive information from eavesdroppers and man-in-the-middle attacks, making it crucial for safeguarding private data during online transactions. While the other options contribute to security in different ways, they do not address the encryption of web access specifically. A Network Intrusion Detection System (NIDS) focuses on monitoring network traffic for suspicious activity but does not encrypt data. The Advanced Encryption Standard (AES) is a strong encryption algorithm that is often used for encrypting data at rest or for securing communications, but it is not a protocol for web communication like TLS. Lastly, Two-factor authentication (2FA) enhances access security by requiring two forms of verification, but it does not provide encryption for data transmitted over the network. Thus, utilizing TLS is the ideal solution for encrypting web access to sensitive employee information.

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7. What is the purpose of cybersecurity training for employees?

A. To increase productivity

B. To ensure compliance with regulations

C. To reduce the risk of security breaches

D. To familiarize them with software

The purpose of cybersecurity training for employees is fundamentally aimed at reducing the risk of security breaches within an organization. By educating employees about potential threats such as phishing attacks, malware, and social engineering tactics, organizations can empower their staff to recognize and appropriately respond to security threats. This training equips employees with the knowledge to understand their role in maintaining security protocols, encourages them to follow best practices in data handling, and fosters a culture of security awareness. When employees are aware of the potential risks and understand the importance of cybersecurity measures, the likelihood of human error—or falling victim to attacks—decreases significantly, thereby enhancing the overall security posture of the organization. While cybersecurity training can also contribute to compliance with regulations and, to a lesser extent, productivity, its primary goal remains the mitigation of risks associated with security breaches. Familiarizing employees with software may be part of a broader training program but does not specifically address the critical need for security awareness and the proactive measures required to protect sensitive data and systems.

8. What type of information does the ipconfig command provide?

A. Network settings

B. User account information

C. Hardware specifications

D. Software versions

The ipconfig command is a powerful utility used in Windows operating systems that provides detailed information about network settings. When executed, it displays various configuration settings related to network interfaces, including the IP address, subnet mask, default gateway, and other network-related parameters for all network adapters on the device. This command is essential for troubleshooting network connectivity issues, as it allows users to quickly assess their current network configuration and determine whether any changes are needed. Additionally, the output can help in diagnosing problems such as IP address conflicts and DNS resolution issues. The other choices refer to different types of information that are not associated with the ipconfig command. User account information would relate to user profiles and permissions on the system, hardware specifications pertain to the physical components of the computer like CPU and RAM, and software versions would involve details about installed applications and their versions. Thus, only the option related to network settings accurately describes the information provided by the ipconfig command.

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9. Which two layers of the OSI model correspond to the first layer of the TCP/IP model?

A. Data Link

B. Session

C. Presentation

D. Physical

The correct choice reflects the fundamental aspects of the OSI and TCP/IP models, particularly in how they relate to network communications. The first layer of the TCP/IP model is the network interface layer, which is responsible for the physical transmission of data over the medium. This layer encompasses the functionality of both the Physical layer and the Data Link layer in the OSI model. The Physical layer is specifically focused on the actual transmission of raw data bits over a physical medium, such as electrical signals over cables or light signals in fiber optics. It outlines the hardware requirements for networking, including the types of cables and connectors used, as well as the signaling methods (like voltage levels). Essentially, the Physical layer defines the electro-mechanical aspects of data transmission. In contrast, the other options pertain to higher layers of the OSI model, which deal with more abstract functions, such as session management and data formatting, rather than the physical means of data transfer. Thus, these layers do not correspond to the first layer of the TCP/IP model, which is more concerned with the physical aspects of networking, confirming that the Physical layer is indeed the correct identification in relation to the TCP/IP model's network interface layer.

10. What does BYOD stand for in a security context?

A. Bring Your Own Device

B. Bring Your Own Data

C. Bring Your Own Domain

D. Bring Your Own Development

In the context of security, BYOD stands for "Bring Your Own Device." This concept refers to the practice where employees are allowed to use their personal devices, such as smartphones, tablets, or laptops, for work purposes. The significance of BYOD arises from the evolving workplace environment where flexibility and mobility are increasingly important. Allowing personal devices can enhance productivity and employee satisfaction; however, it also introduces various security challenges. Organizations need to implement policies and technologies to manage the potential risks associated with BYOD, including protecting sensitive company data on devices not fully controlled by the IT department. This includes ensuring that devices are secure, data is encrypted, and that employees understand the security protocols they must follow when using their personal devices for work-related activities. The other options, while plausible in different contexts, do not align with the established meaning of BYOD in security and workplace settings. For instance, "Bring Your Own Data" might imply a context involving data management, but it doesn't accurately capture the essence of device-related policies. Similarly, "Bring Your Own Domain" and "Bring Your Own Development" refer to distinct concepts within IT and software development but are not relevant to the BYOD framework in security discussions.

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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:

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

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