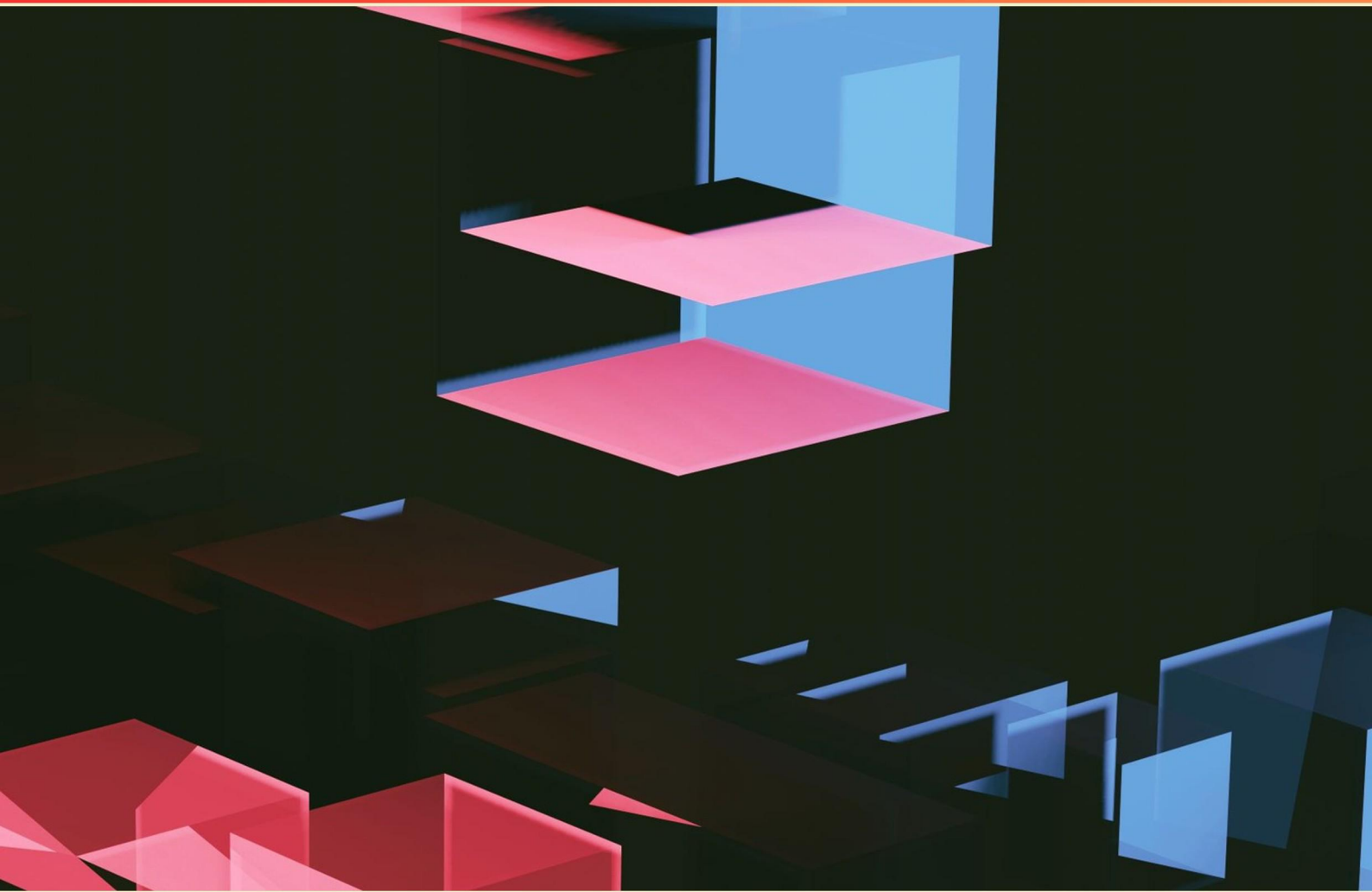


ITGSS CERTIFIED TECHNICAL ASSOCIATE: EMERGING TECH PRACTICE TEST (SAMPLE) STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

**VISIT US ONLINE FOR
THE FULL VERSION STUDY GUIDE**

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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. What is one ethical concern associated with AI technology?**
 - A. Transparency in data processing
 - B. Bias in algorithmic decision-making
 - C. Efficiency in computation
 - D. Accessibility for all users
- 2. In IoT applications, "end-to-end connectivity" refers to what?**
 - A. Communication between software applications
 - B. Seamless communication between devices and cloud systems
 - C. Secure connections between different networks
 - D. Mobile communication technologies
- 3. What is a common indication for performing a biopsy?**
 - A. Confirm malignancy in a mass
 - B. Define the amount of fluid in a mass
 - C. Define the size of drainage tube needed
 - D. Confirm whether the mass is a simple cyst
- 4. What allows multiple operating systems to be run on a single physical machine?**
 - A. Virtual Machines
 - B. Dedicated Servers
 - C. Containerization
 - D. Load Balancers
- 5. Which of the following results from Cross Beam technology?**
 - A. Enhanced border definition
 - B. Better contrast resolution
 - C. Reduction in artifacts
 - D. Increases artifacts
- 6. What is the significance of ethical hacking?**
 - A. It creates new software to outpace cyber threats
 - B. It identifies vulnerabilities before malicious hackers can exploit them
 - C. It solely focuses on monitoring employee activities
 - D. It helps in finding flaws in coding practices

- 7. What does the "A" in ALARA stand for?**
- A. As Low As Reasonably Achievable
 - B. Any Level At Radiological Access
 - C. At Least Acceptable Radiation Approval
 - D. As Low As Radiation Allowable
- 8. What is a potential use case for drones in emerging technologies?**
- A. Building infrastructure
 - B. Aerial photography, agriculture monitoring, and delivery services
 - C. Cybersecurity monitoring
 - D. Data center management
- 9. Which type of distributed ledger technology is best characterized by decentralization?**
- A. Blockchain
 - B. SQL databases
 - C. Cloud storage systems
 - D. Centralized ledgers
- 10. What primarily enhances automation and decision-making within machines?**
- A. Artificial Intelligence (AI)
 - B. Internet of Things (IoT)
 - C. Traditional Programming
 - D. Data Mining

Answers

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

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Explanations

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1. What is one ethical concern associated with AI technology?

- A. Transparency in data processing
- B. Bias in algorithmic decision-making**
- C. Efficiency in computation
- D. Accessibility for all users

Bias in algorithmic decision-making is a significant ethical concern associated with AI technology because it can lead to unfair treatment of individuals or groups. Algorithms are trained on datasets that may reflect existing societal biases, and if these biases are not recognized and addressed, the resulting AI systems can perpetuate or even exacerbate discrimination. This bias can manifest in various areas, such as hiring processes, law enforcement, lending practices, and healthcare, leading to unequal outcomes based on race, gender, socio-economic status, or other characteristics. Recognizing and mitigating bias in AI algorithms is crucial to ensure that the technology is applied fairly and ethically, reflecting a commitment to justice and equality. Stakeholders involved in AI development must actively work towards creating more balanced datasets, promoting diverse perspectives in algorithm design, and establishing frameworks for accountability and transparency in AI-driven decisions. While transparency in data processing, efficiency in computation, and accessibility for all users are important considerations, they do not directly address the moral implications of fairness and discrimination that arise from biased algorithms. Hence, bias in algorithmic decision-making stands out as a critical ethical concern in the realm of AI technology.

2. In IoT applications, "end-to-end connectivity" refers to what?

- A. Communication between software applications
- B. Seamless communication between devices and cloud systems**
- C. Secure connections between different networks
- D. Mobile communication technologies

End-to-end connectivity in IoT applications emphasizes the seamless communication that occurs between devices and cloud systems. This concept is crucial for IoT because it ensures that data collected by IoT devices can be transmitted to a central system for processing, storage, and analysis. This connectivity enables the IoT ecosystem to function effectively, allowing for real-time data access, deployment of IoT applications, and actionable insights derived from data analytics. In this context, devices may range from sensors and actuators to more complex machinery, and the cloud systems serve as the backbone for data aggregation and decision-making processes. The ability to maintain a continuous and reliable connection from the edge (the IoT device) to the cloud is essential for implementing applications such as smart cities, industrial automation, and connected health technologies. The other options, while related to technology in some capacity, do not fully encompass the concept of end-to-end connectivity in IoT. For example, communication between software applications is more focused on interoperability and integration, secure connections highlight cybersecurity aspects which are equally important but secondary to the core idea of seamless data transmission, and mobile communication technologies involve specific methods of data transfer but don't address the broad connectivity that encompasses both devices and cloud interaction.

3. What is a common indication for performing a biopsy?

- A. Confirm malignancy in a mass**
- B. Define the amount of fluid in a mass
- C. Define the size of drainage tube needed
- D. Confirm whether the mass is a simple cyst

A biopsy is primarily performed to obtain a tissue sample that can be analyzed microscopically to determine the presence of disease, particularly malignancy. In clinical practice, one of the most common reasons for conducting a biopsy is to confirm whether a mass is cancerous. By examining the cells within the mass, healthcare professionals can identify any abnormal features that suggest malignancy, aiding in the diagnosis and informing treatment options. In contrast, the other choices address different medical issues that do not typically require a biopsy for resolution. For example, while defining the amount of fluid in a mass may involve imaging studies or fluid aspiration, it does not necessitate biopsy. Similarly, determining the size of a drainage tube needed is a procedural decision that relates to managing an existing fluid collection rather than diagnosing a tissue abnormality. Lastly, confirming whether a mass is a simple cyst can often be performed through imaging techniques, such as ultrasound, which can differentiate cystic structures from solid lesions without the need for invasive tissue sampling. Thus, the primary utility of a biopsy in this context is its role in confirming malignancy, making it the most appropriate indication for the procedure.

4. What allows multiple operating systems to be run on a single physical machine?

- A. Virtual Machines**
- B. Dedicated Servers
- C. Containerization
- D. Load Balancers

Virtual machines allow multiple operating systems to run on a single physical machine by creating isolated environments, known as virtual machines (VMs), within the physical hardware. Each VM has its own operating system and runs independently of others, effectively allowing multiple OS instances to operate concurrently on the same hardware. This technology leverages a hypervisor, which sits between the hardware and the OS of each VM. The hypervisor allocates resources such as CPU, memory, and storage to each VM, ensuring they function as if they're running on separate physical machines. This capability results in efficient resource utilization, the ability to test different OS configurations, and the facilitation of diverse applications on a single machine. In contrast, dedicated servers refer to a single physical server that is reserved for one organization or application, not allowing the simultaneous operation of multiple OSes. Containerization involves packaging applications and their dependencies into containers that share the host OS kernel, but this is different from running multiple OSes. Load balancers distribute workloads across multiple servers, improving application performance and availability, but do not directly allow multiple OSes on a single machine.

5. Which of the following results from Cross Beam technology?

- A. Enhanced border definition
- B. Better contrast resolution
- C. Reduction in artifacts
- D. Increases artifacts**

Cross Beam technology is primarily used in imaging systems, particularly in ultrasound and radiography, to enhance image quality and diagnostic capabilities. Its primary advantage lies in the way it processes and utilizes the received signals. The indicated answer, which suggests an increase in artifacts, might arise from a misunderstanding of how Cross Beam technology functions. In reality, Cross Beam technology is designed to reduce artifacts rather than increase them. One of its primary goals is to enhance the clarity and quality of images by minimizing the impact of artifacts that can obscure or distort the information being captured. By employing sophisticated signal processing techniques and utilizing multiple beam paths, Cross Beam technology helps in improving the overall integrity of the image, which in turn improves diagnostic accuracy. Each of the other options—enhanced border definition, better contrast resolution, and reduction in artifacts—are positive results associated with Cross Beam technology, demonstrating its effectiveness in improving imaging quality. In summary, Cross Beam technology is intended to optimize image quality and reduce the presence of artifacts, leading to better diagnostic outcomes. Therefore, the notion that it results in an increase of artifacts does not align with its intended purpose or functionality.

6. What is the significance of ethical hacking?

- A. It creates new software to outpace cyber threats
- B. It identifies vulnerabilities before malicious hackers can exploit them**
- C. It solely focuses on monitoring employee activities
- D. It helps in finding flaws in coding practices

The significance of ethical hacking lies primarily in its ability to identify vulnerabilities before they can be exploited by malicious hackers. Ethical hackers, often known as white-hat hackers, conduct authorized tests on systems and networks to pinpoint security weaknesses. By doing so, organizations can proactively address these vulnerabilities, fortifying their defenses against potential cyber attacks. This proactive approach is crucial in today's digital landscape, where cyber threats are increasingly sophisticated and prevalent. Ethical hackers use the same tools and techniques as malicious hackers but do so with permission and for the purpose of improving security. Effective ethical hacking leads to the development of stronger security protocols, better security policies, and an overall more secure environment for data and assets. While other options may touch on related aspects of cybersecurity, they do not emphasize this proactive identification and mitigation of threats as the primary significance. Creating new software can be part of a broader cybersecurity strategy but doesn't address the immediate need to protect against existing vulnerabilities. Monitoring employee activities, while relevant to workplace security, is more about internal policies than identifying external threats. Lastly, finding flaws in coding practices is important but is just one component of a much larger process that ethical hacking encompasses.

7. What does the "A" in ALARA stand for?

- A. As Low As Reasonably Achievable
- B. Any Level At Radiological Access
- C. At Least Acceptable Radiation Approval
- D. As Low As Radiation Allowable

The phrase "As Low As Reasonably Achievable" encapsulates a fundamental principle in the field of radiation protection. It emphasizes the importance of minimizing radiation exposure to individuals and the environment, balancing safety with practical considerations. The idea is to keep radiation doses as low as possible while taking into account economic and social factors, as well as technical limits. This principle is crucial for ensuring safety in environments where radiation is present, such as medical facilities, nuclear plants, and research laboratories. The other options do not represent established principles in radiation safety. The focus of those alternatives does not align with the widely accepted practice of striving for the minimal reasonable exposure to radiation.

8. What is a potential use case for drones in emerging technologies?

- A. Building infrastructure
- B. Aerial photography, agriculture monitoring, and delivery services
- C. Cybersecurity monitoring
- D. Data center management

Drones have rapidly evolved as a versatile tool in various industries due to advancements in technology. Aerial photography, agriculture monitoring, and delivery services showcase how drones leverage their ability to quickly and efficiently gather information or carry out tasks from the sky. In aerial photography, drones can capture high-resolution images and videos from perspectives that are often difficult or impossible for traditional cameras to reach. This has significant implications in fields such as real estate, filmmaking, and event coverage, where high-quality visuals are paramount. Agriculture monitoring involves using drones equipped with specialized sensors to collect data about crop health, soil conditions, and irrigation needs. This real-time analysis allows farmers to make informed decisions, optimize yields, and manage resources more efficiently, contributing to sustainable agricultural practices. Delivery services with drones represent a new frontier in logistics. Companies are exploring the use of drones to deliver packages quickly and cost-effectively, especially in remote areas. This not only reduces delivery times but can also help decrease traffic congestion and reduce carbon emissions associated with traditional delivery vehicles. These use cases highlight the multifaceted applications of drones in emerging technologies, showcasing their capability to transform industries by improving efficiency, reducing costs, and enabling new services.

9. Which type of distributed ledger technology is best characterized by decentralization?

- A. Blockchain**
- B. SQL databases
- C. Cloud storage systems
- D. Centralized ledgers

Blockchain is best characterized by decentralization because it allows for the storage of information across a network of computers, where each participant (or node) has access to the entire database and maintains a copy of the ledger. This architecture eliminates the need for a single central authority to manage the data, thereby reducing the risk of data manipulation and increasing transparency. In a blockchain, every transaction is recorded in a block, which is then linked to the previous block, forming a secure chain and ensuring that the records are immutable once added to the chain. Decentralization is a key feature of blockchain technology that enhances security and resilience, making it difficult for any one entity to control or alter the data without the consensus of the network. This contrasts sharply with other options, such as SQL databases, which are typically operated in a centralized manner, relying on a singular database server to manage data. Cloud storage systems may offer some level of accessibility but often depend on centralized control by a single cloud service provider. Centralized ledgers, as the name suggests, inherently rely on a single authority to maintain and control the ledger, which does not align with the principles of decentralization found in blockchain.

10. What primarily enhances automation and decision-making within machines?

- A. Artificial Intelligence (AI)**
- B. Internet of Things (IoT)
- C. Traditional Programming
- D. Data Mining

Artificial Intelligence (AI) is the primary technology that enhances automation and decision-making within machines. AI enables machines to process large volumes of data, recognize patterns, learn from experience, and make decisions without human intervention. This capability allows for increased efficiency, better predictions, and improved problem-solving in various applications, ranging from manufacturing systems to autonomous vehicles and even smart assistants. The core functionality of AI involves algorithms that mimic cognitive functions such as perception, reasoning, and learning. By integrating AI into machines, these systems can adapt to changing environments, optimize their operations, and perform tasks that would typically require human intelligence. While the Internet of Things (IoT) connects devices and allows for data collection and sharing, it is the AI that interprets this data and helps in making intelligent decisions based on it. Traditional programming, though important, relies on predefined instructions and lacks the flexibility and learning capabilities that AI offers. Data mining assists in extracting valuable insights from large datasets, but it doesn't inherently provide the decision-making capabilities essential for automation in machines. Therefore, AI stands out as the key driver in enhancing automation and machine-based decision-making.

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://itgss-emergingtech.examzify.com>

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

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