FUNDAMENTALS OF COMPUTING PRACTICE TEST (SAMPLE)

STUDY GUIDE

SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

VISIT US ONLINE FOR THE FULL VERSION STUDY GUIDE

https://fundamentalsofcomputing.examzify.com

Copyright © 2026 by Examzify - A Kaluba Technologies Inc. product.

ALL RIGHTS RESERVED.

No part of this book may be reproduced or transferred in any form or by any means, graphic, electronic, or mechanical, including photocopying, recording, web distribution, taping, or by any information storage retrieval system, without the written permission of the author.

Notice: Examzify makes every reasonable effort to obtain accurate, complete, and timely information about this product from reliable sources.

SAMPLE

Table of Contents

SAMPLE

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.

SAMPLE

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!

SAMPLE

Questions

SAMPLE

1. How is data organized in a relational database?

A. Tables with rows and columns.

B. Graphs with nodes and edges.

C. Documents in a collection.

D. Key-value pairs.

2. Secret information is best described as which of the following?

A. Info that needs to be kept private

B. Info that authorized people can access

C. Info that is widely public

D. Info that is stored on disk

3. What format do conditional statements follow?

A. If this specific thing happens, then this will occur

B. While this is true, do this

C. For each item, do something

D. Do this once at the start

4. What is a key difference among the IaaS, PaaS, and SaaS cloud service models?

A. IaaS provides virtualized hardware; PaaS provides a platform for deploying apps; SaaS delivers software over the Internet.

B. IaaS provides software; PaaS provides hardware; SaaS provides networking.

C. IaaS handles end-user applications; PaaS handles storage; SaaS handles security.

D. IaaS manages the operating system; PaaS manages the user interface; SaaS manages the database.

5. Big-O notation is used to express what?

A. Lower bound on resource usage.

B. Exact running time for a specific input size.

C. Upper bound on growth of running time or space with input size.

D. Average-case resource usage.

SAMPLE

6. What does algorithm correctness mean?

A. The algorithm is the fastest.

B. The algorithm produces the correct result for all valid inputs.

C. The algorithm uses the least memory.

D. The algorithm uses recursion.

7. In programming, which data type is commonly used for true/false logic?

A. Boolean

B. Integer

C. String

D. Floating point

8. What describes a Wide Area Network (WAN)?

A. Nearby computers are on the same network

B. Computers on the same network are long distances from each other

C. Computers communicate through a wired connection

D. Info that authorized people can access

9. Which statement correctly distinguishes a process from a thread, and how concurrency relates to parallelism?

A. A PROCESS has a separate address space; a THREAD shares memory within a process; CONCURRENCY is overlapping execution; PARALLELISM is simultaneous execution.

B. A PROCESS shares memory; a THREAD has a separate address space; CONCURRENCY is overlapping execution; PARALLELISM is sequential execution.

C. A PROCESS is always a single thread; a THREAD runs an entire program; CONCURRENCY is irrelevant to PARALLELISM.

D. A PROCESS has a separate address space; a THREAD shares memory; CONCURRENCY refers to hardware speed; PARALLELISM refers to software threading.

10. How do self-driving cars detect the presence of nearby objects?

A. Radar detection

B. Lidar detection

C. Visual sensing only

D. GPS-based detection

SAMPLE

Answers

SAMPLE

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

SAMPLE

Explanations

SAMPLE

1. How is data organized in a relational database?

A. Tables with rows and columns.

B. Graphs with nodes and edges.

C. Documents in a collection.

D. Key-value pairs.

In a relational database, data is organized into tables of rows and columns. Each table represents a set of records that share the same structure: each row is a single record, and each column holds a specific attribute with a defined data type. The power of this arrangement comes from the ability to relate data across tables using keys—a primary key uniquely identifies a row in its table, and foreign keys link to those primary keys in other tables to establish relationships. This tabular layout supports powerful querying (via SQL), data integrity, and normalization to reduce redundancy. Other data models use different structures: graphs store data as nodes and edges to emphasize relationships; document stores keep semi-structured documents in collections; key-value stores map keys directly to values. The described tables-with-rows-and-columns layout is the distinctive setup of the relational model.

2. Secret information is best described as which of the following?

A. Info that needs to be kept private

B. Info that authorized people can access

C. Info that is widely public

D. Info that is stored on disk

Secret information is about keeping data private so that only those who should know it can see it. The best description is information that needs to be kept private, because secrecy focuses on restricting access to protect sensitive details like passwords or personal records. Information that authorized people can access describes who is allowed to see it, not whether it should be private at all. Widely public data is the opposite of secret, and storage medium (info stored on disk) says nothing about whether the information is private.

3. What format do conditional statements follow?

A. If this specific thing happens, then this will occur

B. While this is true, do this

C. For each item, do something

D. Do this once at the start

Conditional statements follow an if-then structure: a condition is checked, and if it occurs, a specific action follows. This matches the format described as "If this specific thing happens, then this will occur." The other phrases describe loops or one-time setup rather than a direct conditional trigger: doing something while a condition is true is a loop, iterating over items is also a loop, and doing something once at the start is initialization. So the best description is the if-then pattern.

SAMPLE

4. What is a key difference among the IaaS, PaaS, and SaaS cloud service models?

A. IaaS provides virtualized hardware; PaaS provides a platform for deploying apps; SaaS delivers software over the Internet.

B. IaaS provides software; PaaS provides hardware; SaaS provides networking.

C. IaaS handles end-user applications; PaaS handles storage; SaaS handles security.

D. IaaS manages the operating system; PaaS manages the user interface; SaaS manages the database.

The main idea here is how responsibility and what's being provided change across the three cloud service models. In IaaS you're renting virtualized hardware—compute, storage, and networking. The provider handles the physical infrastructure and the virtualization layer, while you install and manage the operating system, runtimes, and applications. In PaaS you're given a platform with built-in runtime and development tools; the provider takes care of the OS, middleware, and underlying infrastructure, and you focus on building and deploying your apps. In SaaS you're using ready-made software delivered over the Internet; the provider handles everything from infrastructure to the application itself, and you simply use the software. That's why the best description is: IaaS provides virtualized hardware, PaaS provides a platform for deploying apps, and SaaS delivers software over the Internet. The other options mix up what each model provides or who manages which parts, so they don't fit the standard division of responsibilities.

5. Big-O notation is used to express what?

A. Lower bound on resource usage.

B. Exact running time for a specific input size.

C. Upper bound on growth of running time or space with input size.

D. Average-case resource usage.

Big-O notation describes how the resources an algorithm uses grow as the input size increases. It provides an upper bound on time or space in the worst case, focusing on the dominant growth rate and ignoring constants and less significant terms. This means it answers: as n gets large, how bad can the resource usage be at most, up to a constant factor? Why that makes sense: it's about scaling, not exact measurements for a particular input. It's not a lower bound (that would be Omega) and not an average-case figure (which depends on input distribution and gives expected behavior). It's also not a precise running time for a specific input, but a way to compare how different algorithms grow as inputs get bigger. So the best description is that Big-O expresses an upper bound on the growth of running time or space with input size.

SAMPLE

6. What does algorithm correctness mean?

A. The algorithm is the fastest.

B. The algorithm produces the correct result for all valid inputs.

C. The algorithm uses the least memory.

D. The algorithm uses recursion.

Correctness in algorithms means that for every valid input, the algorithm returns the result it's supposed to produce. In other words, the output matches the specification of the problem for all cases within the intended domain. This is about the accuracy of the result, not how fast the algorithm runs or how much memory it uses. Often we talk about total correctness: the algorithm terminates on all valid inputs and the output is correct; sometimes we also discuss partial correctness, where if the algorithm terminates, the result is correct, but termination isn't guaranteed. You justify correctness by formal proofs or rigorous reasoning (like invariants and postconditions) or by thorough testing against the specification. The other choices mix in performance or implementation details—fastest, least memory, or using a particular technique like recursion—which don't determine whether the algorithm's output is correct.

7. In programming, which data type is commonly used for true/false logic?

A. Boolean

B. Integer

C. String

D. Floating point

Truth values are represented by the boolean type. A boolean variable is designed to hold either true or false, and these values are what decision-making constructs rely on—if statements, loops, and logical operators work directly with booleans to control flow and evaluate conditions. Using a boolean makes code clear and correct because the value's purpose is explicitly a truth value, not numeric data or text. Other data types encode different kinds of information: integers are whole numbers, strings are sequences of characters, and floating point numbers have fractional parts. While some languages use truthiness rules where nonzero numbers or non-empty strings evaluate as true, those are language-specific conventions, not the explicit, typed representation of a logical value. So the standard data type for true/false logic is boolean, since it cleanly models truth values and integrates naturally with conditionals and boolean operations.

8. What describes a Wide Area Network (WAN)?

A. Nearby computers are on the same network

B. Computers on the same network are long distances from each other

C. Computers communicate through a wired connection

D. Info that authorized people can access

A Wide Area Network describes networks that cover large geographic areas, connecting multiple local networks so computers can communicate across cities, countries, or continents. This broad reach is what sets WANs apart from smaller networks, like a LAN that stays within a building or campus. Since WANs can be wired or wireless and rely on various transmission links (including the Internet), the key idea is the distance and scope of the network, not the specific media used or who is allowed to access data. Therefore, the description that emphasizes computers being far apart best matches a WAN. The other descriptions refer to proximity within a single network, the medium being wired, or access control, none of which define WANs.

SAMPLE

9. Which statement correctly distinguishes a process from a thread, and how concurrency relates to parallelism?

A. A PROCESS has a separate address space; a THREAD shares memory within a process; CONCURRENCY is overlapping execution; PARALLELISM is simultaneous execution.

B. A PROCESS shares memory; a THREAD has a separate address space; CONCURRENCY is overlapping execution; PARALLELISM is sequential execution.

C. A PROCESS is always a single thread; a THREAD runs an entire program; CONCURRENCY is irrelevant to PARALLELISM.

D. A PROCESS has a separate address space; a THREAD shares memory; CONCURRENCY refers to hardware speed; PARALLELISM refers to software threading.

Understanding how processes and threads differ and how concurrency relates to parallelism starts with memory boundaries and execution timing. A process has its own separate address space, which isolates its memory from other processes. Within that process, multiple threads share the same address space, allowing them to access the same data easily and communicate efficiently. Concurrency is about overlapping or interleaved progress of tasks in time, which can happen on a single core through time-slicing or across multiple cores. Parallelism, on the other hand, means actual simultaneous execution of tasks, typically when multiple cores or processors are involved. So the best statement describes a process with a separate address space, a thread that shares memory within that process, concurrency as overlapping execution, and parallelism as simultaneous execution. Some descriptions mix up who shares memory or equate concurrency with hardware speed, which doesn't fit how these concepts actually work.

10. How do self-driving cars detect the presence of nearby objects?

A. Radar detection

B. Lidar detection

C. Visual sensing only

D. GPS-based detection

Radar detection uses radio waves to sense nearby objects. The system emits radio signals and listens for their reflections, measuring how long the signal takes to return to estimate distance, and using Doppler shift to gauge the object's relative speed. This enables real-time obstacle detection and motion tracking, which is crucial for safe braking and steering decisions. Radar remains reliable in challenging conditions like rain, fog, or darkness, where other sensors may struggle. In practice, self-driving cars often fuse radar data with lidar (which provides fine-grained shape and distance information) and cameras (which offer rich visual detail) to get a robust understanding of the surroundings. Relying on GPS alone won't detect nearby obstacles, since it's about positioning rather than sensing immediate objects.

SAMPLE

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://fundamentalsofcomputing.examzify.com

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

SAMPLE