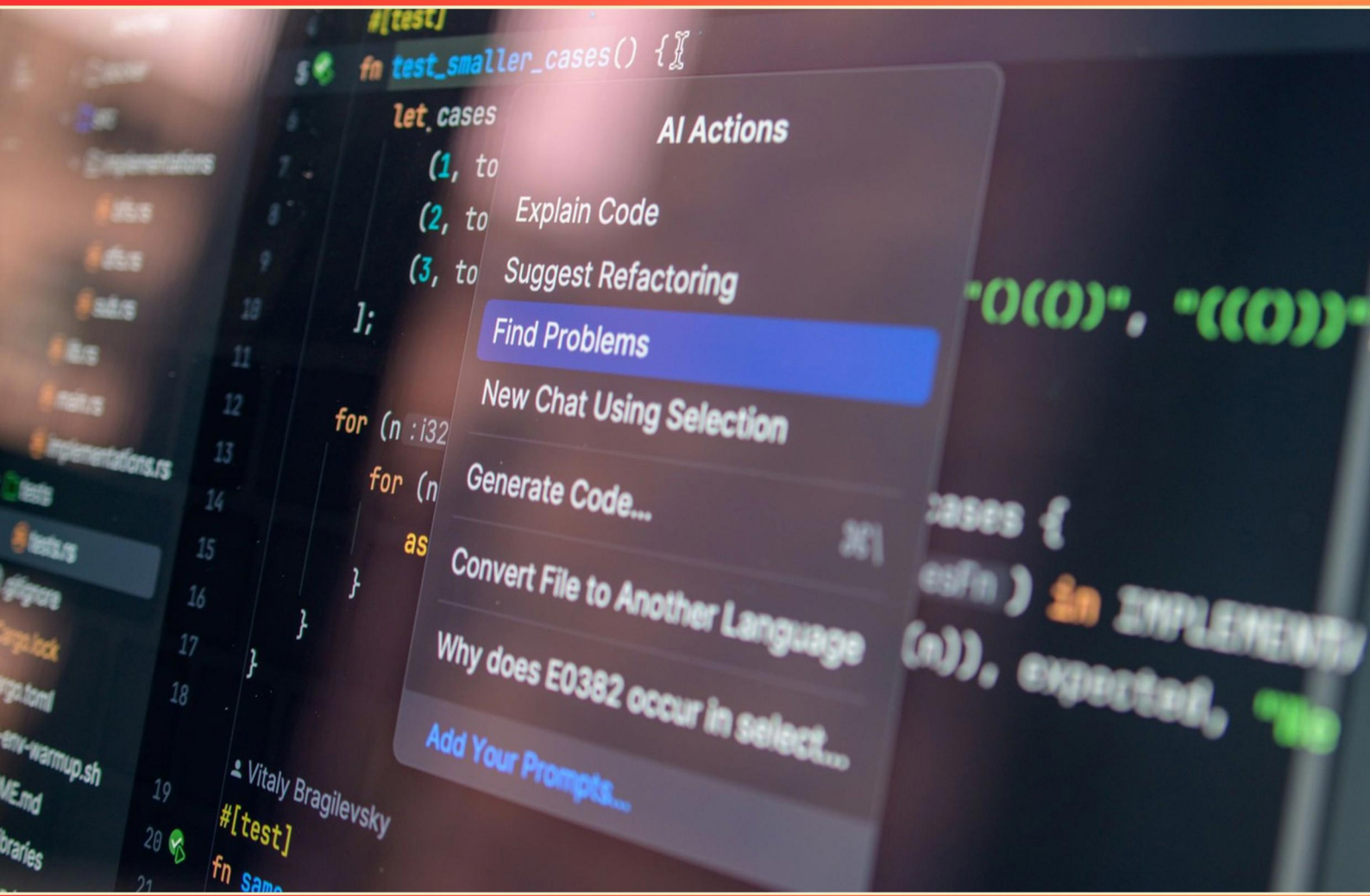
CODEHS AP COMPUTER SCIENCE PRINCIPLES (CSP) PRACTICE EXAM (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

VISIT US ONLINE FOR THE FULL VERSION STUDY GUIDE

https://codehsapcsp.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

Copyright 1

Table of Contents 2

Introduction 3

How to Use This Guide 4

Questions 5

Answers 8

Explanations 10

Next Steps 15

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. **Which concept describes the comparison of the popularity of topical queries in an online search engine over time?**

   A. Trend Analysis

   B. Search Trends

   C. Click-through Rate

   D. Popular Queries

2. **Which extension is a lossless image format widely used on the web?**

   A. .gif

   B. .jpg

   C. .png

   D. .bmp

3. **Which concept is defined as simplifying problems by focusing on general features and ignoring details?**

   A. Algorithm

   B. Abstraction

   C. Parameter

   D. For Loop

4. **Redundancy in data transmission is best described as the repetition of information to reduce errors.**

   A. A method to compress data

   B. A way to encrypt data

   C. Repetition of information to reduce errors

   D. A routing algorithm

5. **Which term describes the practice of creating concise representations to help understanding of complex phenomena?**

   A. Abstraction

   B. Iterative innovation

   C. URL

   D. IP address

SAMPLE

6. Which protocol ensures reliable, ordered delivery of a data stream between hosts?

A. TCP

B. UDP

C. IP

D. ICMP

7. Which term describes joining text strings together (e.g., "Hello" + name)?

A. Concatentate

B. Data Type

C. Variable

D. Boolean

8. Which base uses digits 0-7?

A. Decimal

B. Octal

C. Binary

D. Hexadecimal

9. When would you choose a while loop over a for loop?

A. When the number of iterations is known in advance.

B. When the number of iterations is not known in advance or depends on runtime conditions.

C. When iterating over a collection by index.

D. When you need to skip iterations.

10. When you transform numerical data into charts or images to tell a story, this is called what?

A. Encryption

B. Visualization

C. Analytics

D. Rendering

SAMPLE

Answers

SAMPLE

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

SAMPLE

Explanations

SAMPLE

1. Which concept describes the comparison of the popularity of topical queries in an online search engine over time?

A. Trend Analysis

B. Search Trends

C. Click-through Rate

D. Popular Queries

Tracking how the popularity of topical queries changes over time is about search trends. This concept focuses on observing how often people search for particular topics across weeks or months, showing which topics are rising or fading in interest. It's specifically about time-based popularity of search terms, making it the best fit. In contrast, trend analysis is a broader idea that can apply to any data series, not just search activity. Click-through rate measures how often people click on results, which is about engagement rather than topic popularity over time. Popular queries is a snapshot of commonly searched terms but doesn't inherently describe how popularity evolves across time.

2. Which extension is a lossless image format widely used on the web?

A. .gif

B. .jpg

C. .png

D. .bmp

Lossless compression means the image can be restored exactly to its original pixels, which is ideal for graphics, logos, and images with sharp edges. PNG fits this well because it uses lossless compression and also supports transparency through an alpha channel, making it great for layered web graphics and overlays. Browsers widely support PNG, and its ability to keep clean edges and exact colors for non-photo images is why it's so common on the web. GIF also uses lossless encoding but is limited to a maximum of 256 colors, which isn't suitable for detailed images. JPEG uses lossy compression, which reduces file size at the cost of some quality—fine for photos but not preserved fidelity. BMP is uncompressed and typically results in very large files, not practical for web use. So PNG stands out as the widely used lossless web format.

3. Which concept is defined as simplifying problems by focusing on general features and ignoring details?

A. Algorithm

B. Abstraction

C. Parameter

D. For Loop

Abstraction is the idea being tested here. It means simplifying problems by focusing on general features and ignoring details. In programming this lets us treat complex tasks as black boxes, exposing only what we need — inputs, outputs, and high-level behavior. This makes solutions easier to understand, reuse, and adapt. For example, when you call a function to sort a list, you don't need to know the exact steps of the sorting algorithm; you just rely on the known behavior. The other terms sit in different roles: an algorithm is the exact step-by-step procedure to solve a problem, a parameter is a value you pass into a function to customize its behavior, and a for loop is a control structure for repeating a set of instructions. The description in the question aligns with abstraction because it centers on capturing the essential features while ignoring extraneous details.

SAMPLE

4. Redundancy in data transmission is best described as the repetition of information to reduce errors.

A. A method to compress data

B. A way to encrypt data

C. Repetition of information to reduce errors

D. A routing algorithm

Redundancy in data transmission means adding extra information so the original data can be recovered even if some bits get corrupted. This extra information helps detect errors and often correct them without needing a retransmission. It's not about making data smaller (that would be compression), not about hiding content (that would be encryption), and not about choosing a path for data to travel (that's routing). By including parity bits, checksums, or even repeating data itself, systems gain reliability in the presence of noise. That's why the description—repetition of information to reduce errors—best matches redundancy.

5. Which term describes the practice of creating concise representations to help understanding of complex phenomena?

A. Abstraction

B. Iterative innovation

C. URL

D. IP address

Abstraction is the practice of creating concise representations that focus on the important aspects of something while leaving out the details. By simplifying complex phenomena into models or general concepts, you can understand, compare, and reason about how systems work without getting bogged down in every detail. In programming and computer science, abstraction lets you think at a high level—using ideas like functions, classes, or data models—without needing to manage every low-level operation all at once. For example, a map app presents you with routes and distances, not every calculation the app performs behind the scenes. The other terms don't fit this idea: iterative innovation relates to refining ideas through cycles rather than creating concise representations; a URL is a web address; an IP address identifies a device on a network. Abstraction best captures the notion of making something complex easier to grasp through simplified models.

6. Which protocol ensures reliable, ordered delivery of a data stream between hosts?

A. TCP

B. UDP

C. IP

D. ICMP

Reliable, ordered data delivery is provided by a connection-oriented transport protocol. TCP establishes a connection, uses sequence numbers for each byte, sends acknowledgments, and automatically retransmits any lost data. This combination guarantees that data arrives intact and in the order it was sent, which is essential for a continuous data stream. It also uses flow control and congestion control to regulate the rate. In contrast, UDP is a connectionless, best-effort protocol with no guarantees about delivery, ordering, or duplicate protection. IP handles routing at the network layer but doesn't guarantee delivery or ordering. ICMP is used for network diagnostics and error reporting, not for delivering application data streams. So the protocol that ensures reliable, ordered delivery is TCP.

SAMPLE

7. Which term describes joining text strings together (e.g., "Hello" + name)?

A. Concatentate

B. Data Type

C. Variable

D. Boolean

Joining text strings together is called concatenation. When you write "Hello" + name, you're creating one longer string by putting the pieces end to end. The option that matches this idea is the term for that operation, even though it's misspelled in the list. The other terms describe what kind of data you have (data type), where data is stored (variable), or a true/false value (boolean), not the action of joining strings.

8. Which base uses digits 0-7?

A. Decimal

B. Octal

C. Binary

D. Hexadecimal

Octal is the numeral base that uses digits 0 through 7. In a base-8 system, each place value represents eight times the value of the place to its right, and there are eight distinct digits available: 0, 1, 2, 3, 4, 5, 6, and 7. This is why any number written in octal uses only those digits. Why this fits here: the question asks for the base that uses exactly the digits 0 through 7, which is the defining feature of octal. In contrast, decimal uses digits 0–9, binary uses digits 0–1, and hexadecimal uses digits 0–9 plus A–F (representing 10–15), so none of them are limited to 0–7.

9. When would you choose a while loop over a for loop?

A. When the number of iterations is known in advance.

B. When the number of iterations is not known in advance or depends on runtime conditions.

C. When iterating over a collection by index.

D. When you need to skip iterations.

The choice between a while loop and a for loop hinges on how many times you need to repeat something. For loops are ideal when you know exactly how many iterations you want (or you're iterating over every item in a collection with a known size). You set up a fixed count or loop over each element. A while loop is the better fit when the number of iterations isn't known in advance or depends on runtime conditions. You keep looping as long as a condition remains true, and that condition can change based on user input, sensor data, or other dynamic factors encountered during execution. For example, you might keep asking for input until the user types a sentinel value, or keep processing data until you reach the end of a stream. Skipping iterations isn't a defining factor for choosing the loop type; you can skip within either loop using conditions and continue. So, the scenario that calls for a while loop over a for loop is when the exact number of iterations isn't known in advance or depends on conditions that only become clear while the program runs.

SAMPLE

10. When you transform numerical data into charts or images to tell a story, this is called what?

A. Encryption

B. Visualization

C. Analytics

D. Rendering

Turning numerical data into charts or images to tell a story is data visualization. It focuses on presenting information visually so patterns, trends, and relationships stand out—like a bar chart showing monthly sales or a scatter plot showing how two variables relate. Analytics is the broader process of examining data to extract insights and may include visualization as a step, while encryption hides data, and rendering is the technical creation of an image from a model. Visualization is the specific act of making data visually understandable.

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://codehsapcsp.examzify.com

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

SAMPLE