

SQA HIGHER COMPUTING SCIENCE PRACTICE EXAM (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

VISIT US ONLINE FOR
THE FULL VERSION STUDY GUIDE

<https://sqahighercomputingscience.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.

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

SAMPLE

- 1. What programming concept allows a subclass to inherit traits from a superclass?**
 - A. Encapsulation
 - B. Polymorphism
 - C. Inheritance
 - D. Abstraction
- 2. What does it mean for a keyword to be highlighted in a programming environment?**
 - A. It indicates a variable name
 - B. It signifies a reserved word
 - C. It marks an error in code
 - D. It is an alternative for comments
- 3. What does VHS stand for in video technology?**
 - A. Video Home System
 - B. Video High Standard
 - C. Visual Home System
 - D. Variable High Speed
- 4. What is a key characteristic of a database-driven website compared to a static website?**
 - A. Content changes dynamically
 - B. It requires more storage
 - C. It has limited functionality
 - D. Content is pre-defined
- 5. Which type of value can only be true or false?**
 - A. Integer
 - B. String
 - C. Boolean
 - D. Float

- 6. What phase of software testing is also known as end-user testing?**
- A. Alpha testing
 - B. Integration testing
 - C. Beta testing
 - D. System testing
- 7. What term refers to the high level code of an application before it is translated into machine code?**
- A. Executable code
 - B. Source code
 - C. Compiled code
 - D. Bytecode
- 8. Which of the following best describes lossless compression?**
- A. Removes some data to reduce size
 - B. Retains all original data
 - C. Focuses solely on text files
 - D. Is only used in audio files
- 9. What structure in programming determines the flow of execution through the code?**
- A. Data structure
 - B. Control structures
 - C. Syntax
 - D. Variable
- 10. Which of the following is an example of a Denial of Service (DoS) attack?**
- A. Traffic analysis
 - B. SQL injection
 - C. Excessive requests to a server
 - D. Stealing credentials

Answers

SAMPLE

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

SAMPLE

Explanations

SAMPLE

1. What programming concept allows a subclass to inherit traits from a superclass?

- A. Encapsulation
- B. Polymorphism
- C. Inheritance**
- D. Abstraction

The concept that allows a subclass to inherit traits from a superclass is inheritance. In object-oriented programming, inheritance is a fundamental principle that enables one class (the subclass) to acquire properties and behaviors (attributes and methods) from another class (the superclass). This leads to enhanced code reusability and the creation of hierarchical relationships between classes. When a subclass inherits from a superclass, it can use the characteristics defined in the superclass without having to redefine them, while also being able to add its own specific traits or override existing ones. This creates a structured organization of code that can scale more effectively and simplifies maintenance. The other concepts mentioned—encapsulation, polymorphism, and abstraction—have their distinct roles. Encapsulation refers to bundling data and methods that operate on that data within a single unit or class, protecting the internal state from external interference. Polymorphism allows for methods to do different things based on the object that it is acting upon, enabling a single method to provide different implementations. Abstraction focuses on hiding complex implementation details and showing only the necessary features of an object, thus simplifying interaction with it. While these concepts are essential in object-oriented programming, they do not pertain to the specific mechanism of a subclass inheriting traits from a

2. What does it mean for a keyword to be highlighted in a programming environment?

- A. It indicates a variable name
- B. It signifies a reserved word**
- C. It marks an error in code
- D. It is an alternative for comments

Highlighting a keyword in a programming environment signifies a reserved word. Reserved words, or keywords, are predefined words that have special meaning in a programming language, and they cannot be used for any other purpose, such as naming variables or functions. When developers write code, keywords like "if," "else," "while," and "class" play crucial roles in dictating the structure and flow of the program. Their highlighting helps programmers quickly identify the core elements of the language's syntax, making the code more readable and helping prevent errors in code structure or logic. The highlighting serves as a visual aid that distinguishes these reserved words from identifiers like variable or function names, which have different purposes and rules for naming. This distinction is vital for maintaining clarity and understanding within the programming code.

3. What does VHS stand for in video technology?

- A. Video Home System
- B. Video High Standard
- C. Visual Home System
- D. Variable High Speed

VHS stands for Video Home System, which refers to the standard for consumer-level analog video recording on tape. This format was developed in the 1970s and became popular for recording and playing back video content in homes. The term "home system" signifies its primary use for home entertainment, allowing users to record television programs and play pre-recorded movies. This format played a significant role in the home video revolution, providing a more accessible way for consumers to watch movies and create personal recordings compared to previous technologies. Its widespread adoption and compatibility with consumer electronics made it a household name until more advanced digital formats emerged. The correct answer captures the essence of what VHS represents in the context of video technology.

4. What is a key characteristic of a database-driven website compared to a static website?

- A. Content changes dynamically
- B. It requires more storage
- C. It has limited functionality
- D. Content is pre-defined

A key characteristic of a database-driven website is that content changes dynamically. This means that the information displayed on the website can be updated in real-time based on user interactions or changes in the underlying database. For instance, if a user submits a comment or if there is new content added to the database, the website can reflect those updates immediately without needing to manually change the HTML files as one would with a static website. In contrast, a static website consists of fixed content that does not change unless the developer modifies the HTML files directly. This makes static websites less flexible in responding to user actions and current information needs. The dynamic nature of a database-driven website allows for richer, more interactive user experiences, making it suitable for applications such as blogs, e-commerce sites, or any platform that requires frequent updates and user engagement. Dynamic content enables a broader range of functionality, making it possible to implement features like user accounts, search capabilities, and personalized experiences tailored to individual users.

5. Which type of value can only be true or false?

- A. Integer
- B. String
- C. Boolean
- D. Float

The type of value that can only be true or false is a Boolean. In programming and computer science, Boolean values represent the binary state of logic: true or false. This binary nature is fundamental in conditions, decision-making, and logical operations within algorithms and code. On the other hand, integer, string, and float types can represent a wide range of values that go beyond just true or false. Integers are whole numbers (e.g., -1, 0, 1, 2), strings represent sequences of characters (e.g., "hello", "123"), and floats are decimal numbers (e.g., 3.14, -0.001). Each of these types holds a different kind of information, making them unsuitable for solely representing truth values. Thus, the Boolean type is uniquely defined to provide a straightforward representation of binary logic.

6. What phase of software testing is also known as end-user testing?

- A. Alpha testing
- B. Integration testing
- C. Beta testing**
- D. System testing

The phase of software testing known as end-user testing is beta testing. This stage occurs after alpha testing and is crucial for evaluating the software from the perspective of real users. During beta testing, the product is released to a limited audience outside of the development team for further evaluation in a real-world environment. Users provide feedback on their experience, identifying any issues or bugs that may not have been detected during earlier testing phases. The goal is to ensure that the software meets user requirements and works as intended before it is released to the general public. This user-driven approach is what qualifies beta testing as end-user testing, allowing developers to make necessary adjustments based on real user experiences.

7. What term refers to the high level code of an application before it is translated into machine code?

- A. Executable code
- B. Source code**
- C. Compiled code
- D. Bytecode

The term that refers to the high-level code of an application before it is translated into machine code is known as source code. This is the original code written by a programmer in a programming language like Python, Java, or C++. It is human-readable and contains the logic and instructions that define the behavior of the application. Source code must be transformed into machine code for a computer to execute it. This transformation is typically done through a compiler or an interpreter, depending on the programming language used. By focusing on the high-level code while writing programs, developers can easily manage and refine software logic before it is converted to the lower-level machine language, which is specific to the hardware and less understandable to humans. The other terms are used in different contexts: executable code refers to the machine code that the computer can run; compiled code typically refers to source code that has already been translated into machine code through a compiler; and bytecode is an intermediate form of code that is typically generated by compilers for languages such as Java and is executed by a virtual machine rather than directly by the hardware.

8. Which of the following best describes lossless compression?

- A. Removes some data to reduce size
- B. Retains all original data**
- C. Focuses solely on text files
- D. Is only used in audio files

Lossless compression refers to a method of data compression that allows the original data to be perfectly reconstructed from the compressed data. This means that all original information is preserved during the compression process. When data is losslessly compressed, no quality is lost, and every bit of the original file can be retrieved without any alteration once decompressed. This is particularly important in scenarios where maintaining the integrity of the original data is crucial, such as in text files, images, or executable programs. In contrast, options that refer to removing some data or focusing specifically on certain file types do not accurately represent lossless compression. Lossy compression, which is not being discussed here, intentionally discards some data to achieve a smaller file size, while limiting the context to only specific types of files like text or audio is overly restrictive in the context of lossless compression. Thus, retaining all original data characterizes lossless compression comprehensively and accurately.

9. What structure in programming determines the flow of execution through the code?

- A. Data structure
- B. Control structures**
- C. Syntax
- D. Variable

Control structures are fundamental elements in programming that dictate the order in which statements and instructions are executed. They allow for the creation of complex decision-making, looping, and branching capabilities within a program. For instance, if a program receives an input and based on that input it must take a different action, control structures such as "if" statements or "switch" cases are used to determine which block of code should run. Furthermore, control structures also include loops like "for" and "while," which enable the repetition of a set of instructions until a specified condition is met. In contrast, data structures pertain to how data is organized and stored, while syntax refers to the rules governing the structure of statements in a programming language. Variables are used to hold data values, but they do not influence the execution flow by themselves. Hence, understanding control structures is essential for managing how a program processes instructions and responds to input, making them the correct choice for determining the flow of execution in code.

10. Which of the following is an example of a Denial of Service (DoS) attack?

- A. Traffic analysis
- B. SQL injection
- C. Excessive requests to a server**
- D. Stealing credentials

In the context of cybersecurity, a Denial of Service (DoS) attack is a malicious attempt to disrupt the normal functioning of a targeted server, service, or network by overwhelming it with a flood of traffic. The key characteristic of a DoS attack is that it seeks to render the targeted resources unavailable to legitimate users. Excessive requests to a server exemplify this principle, as the attacker sends an overwhelming number of requests that the server cannot handle, effectively causing it to become slow or entirely unresponsive. This impacts the availability of the service for legitimate users, which is the fundamental purpose of a DoS attack. In contrast, other options relate to different types of cyber threats. Traffic analysis involves examining network traffic to gather information rather than disrupting service. SQL injection targets a database by manipulating queries to access or alter data, but it does not specifically aim to deny service. Stealing credentials is focused on gaining unauthorized access to accounts rather than affecting availability.

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://sqahighercomputingscience.examzify.com>

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

SAMPLE