

# Oxford, Cambridge and RSA (OCR) GCSE Computer Science Practice Exam (Sample)

## Study Guide



**Everything you need from our exam experts!**

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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

- 1. What is the primary method used to send data over a network by dividing it into smaller packets?**
  - A. Data Packet Transfer**
  - B. Packet Switching**
  - C. Stream Transfer Protocol**
  - D. Segmented Sending**
- 2. Which test is primarily concerned with the functionalities of an application?**
  - A. Usability test**
  - B. Load test**
  - C. Functionality test**
  - D. Security test**
- 3. What step of the instruction cycle involves breaking down and interpreting the instruction for the computer to understand?**
  - A. Store**
  - B. Execute**
  - C. Decode**
  - D. Fetch**
- 4. What is the goal of a Denial of Service Attack?**
  - A. To steal sensitive data**
  - B. To prevent users from accessing network resources**
  - C. To install spyware on user devices**
  - D. To replicate across devices**
- 5. Which type of test evaluates how user-friendly the interface and features are?**
  - A. Usability test**
  - B. Load test**
  - C. Performance test**
  - D. Security test**

- 6. What is the term for a statement that allows a program to repeat a series of instructions?**
- A. Selection statement**
  - B. Iteration statement**
  - C. Condition statement**
  - D. Loop statement**
- 7. What does clock speed refer to in a computer system?**
- A. Rate of data transfer**
  - B. Amount of storage**
  - C. How fast the FDE cycle is done**
  - D. Efficiency of the processor**
- 8. What is the primary focus of a performance test?**
- A. Evaluating feature completeness**
  - B. Assessing speed and resource impact**
  - C. Verifying user experience**
  - D. Identifying code vulnerabilities**
- 9. What component performs arithmetic operations such as addition and subtraction in the CPU?**
- A. Control Unit**
  - B. Arithmetic Logic Unit**
  - C. Memory Address Register**
  - D. Accumulator**
- 10. What is the first step in the instruction cycle, where the next instruction is retrieved from main memory?**
- A. Decode**
  - B. Execute**
  - C. Fetch**
  - D. Store**



## **Answers**

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

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## **Explanations**

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**1. What is the primary method used to send data over a network by dividing it into smaller packets?**

**A. Data Packet Transfer**

**B. Packet Switching**

**C. Stream Transfer Protocol**

**D. Segmented Sending**

The correct choice is based on the fundamental principle of how most networks manage the transmission of data. Packet switching is a method of data transmission used by networks that involves breaking down messages into smaller, manageable units called packets. Each packet contains part of the data along with necessary information such as the destination address and sequencing details. This allows packets to travel independently across the network and be routed through various paths to their final destination. At the destination, the packets are then reassembled into the original message. This method is efficient and resilient, as it enables the network to utilize available bandwidth effectively and handle potential issues such as lost packets or varied network paths. Other methods mentioned, such as data packet transfer, stream transfer protocol, and segmented sending, do not capture this core concept. While they may relate to data transmission in some way, they do not specifically refer to the technology of breaking down and routing data packets like packet switching does. This makes packet switching the primary and most recognized method for sending data over networks.

**2. Which test is primarily concerned with the functionalities of an application?**

**A. Usability test**

**B. Load test**

**C. Functionality test**

**D. Security test**

The correct choice focuses specifically on assessing the functionalities of an application to ensure that it operates according to specified requirements and behaves as expected in various scenarios. A functionality test verifies that each function of the software application operates in conformance with the required specification, covering features like user interactions, data handling, and processing capabilities. Functionality testing goes beyond just checking if the software can be used; it emphasizes whether the software does what it is supposed to do. This includes testing features like input/output, business logic, and interface components to confirm that they all function correctly. Such tests ensure that the application is reliable and fulfills user expectations in terms of its functional requirements. In contrast, usability tests focus on how user-friendly the application is, which means they evaluate user experience rather than the technical correctness of the application's functionalities. Load tests examine how well an application performs under heavy loads, ensuring it can handle a specific number of users or transactions without degradation of performance. Security tests are concerned with identifying vulnerabilities and ensuring that the application is protected against threats or attacks. Each of these alternatives addresses different aspects of application testing, but functionality testing is specifically tailored to validate the core operational capabilities of the software.

**3. What step of the instruction cycle involves breaking down and interpreting the instruction for the computer to understand?**

- A. Store**
- B. Execute**
- C. Decode**
- D. Fetch**

The step of the instruction cycle that involves breaking down and interpreting the instruction for the computer to understand is the decode phase. During this phase, the control unit takes the instruction fetched from memory and translates it into a form that the CPU can process. This often includes determining the operation to be performed and identifying the operands involved. In this context, decoding is crucial because it transforms the raw binary code of the instruction into a specific command or action that the CPU can execute. Without this step, the computer would not be able to understand what the instruction is asking it to do. In contrast, the fetch stage is responsible for retrieving the instruction from memory, while the execute phase involves carrying out the decoded instruction. The store step typically involves writing data back into memory after it has been processed. Each of these stages plays a distinct role in the overall instruction cycle, but decode is specifically focused on interpretation and understanding, making it the correct answer.

**4. What is the goal of a Denial of Service Attack?**

- A. To steal sensitive data**
- B. To prevent users from accessing network resources**
- C. To install spyware on user devices**
- D. To replicate across devices**

The goal of a Denial of Service (DoS) attack is to prevent users from accessing network resources. This is achieved by overwhelming the target system or network with traffic, causing it to slow down or become completely unresponsive to legitimate requests. In a successful DoS attack, users are denied service as the system becomes unable to process legitimate traffic, effectively disrupting the availability of services. This type of attack focuses solely on rendering services inaccessible rather than compromising data security or manipulating devices, which aligns with the characteristics and intent of DoS attacks. Other types of cyber threats, such as data theft or malware installation, serve different purposes and do not align with the primary objective of a DoS attack.

**5. Which type of test evaluates how user-friendly the interface and features are?**

**A. Usability test**

**B. Load test**

**C. Performance test**

**D. Security test**

A usability test is designed specifically to assess how user-friendly an interface and its features are. During such tests, actual users interact with the system or product to perform specific tasks, allowing evaluators to gather insights into how intuitive and easy the application is to use. This type of testing focuses on aspects such as overall user experience, ease of navigation, and the effectiveness of the interface in supporting users in achieving their goals. In contrast, a load test measures how well a system performs under a specific load, such as the number of users accessing it simultaneously, without focusing on user interaction or ease of use. A performance test evaluates the speed and responsiveness of an application, often under varying conditions, but does not provide information regarding the user-friendliness of the interface. Lastly, a security test is aimed at identifying vulnerabilities and assessing the robustness of the system against potential threats, which is unrelated to usability. Therefore, it is clear that the usability test is the appropriate choice when examining user-friendliness.

**6. What is the term for a statement that allows a program to repeat a series of instructions?**

**A. Selection statement**

**B. Iteration statement**

**C. Condition statement**

**D. Loop statement**

The term for a statement that allows a program to repeat a series of instructions is known as an iteration statement. In programming, iteration refers to the process of executing a set of instructions repeatedly, typically until a certain condition is met or a specified number of repetitions occur. This is often implemented using structures such as for-loops, while-loops, or do-while loops, which enable developers to write more efficient and concise code. Selection statements, on the other hand, are used to make decisions within a program, allowing it to choose different paths of execution based on certain conditions. Condition statements are typically involved in evaluating true or false scenarios that may influence selection statements but do not themselves facilitate repetition. Loop statements is a term that can also describe constructs that repeat actions, but it's less commonly defined separately compared to iteration. The most precise term for the concept of repeating instructions in programming is indeed "iteration statement."

## 7. What does clock speed refer to in a computer system?

- A. Rate of data transfer
- B. Amount of storage
- C. How fast the FDE cycle is done**
- D. Efficiency of the processor

Clock speed in a computer system refers to how fast the fetch-decode-execute (FDE) cycle is completed. It indicates the number of cycles a CPU can perform in one second and is typically measured in Hertz (Hz), with common units being megahertz (MHz) or gigahertz (GHz). A higher clock speed means the CPU can process instructions more quickly, which generally leads to better performance for tasks that require a lot of computation. This concept is crucial because the speed of the FDE cycle directly impacts the overall speed and efficiency of the processor when executing programs. Thus, clock speed is a critical factor in determining a computer's performance, particularly in terms of its ability to handle multiple operations or complex algorithms efficiently.

## 8. What is the primary focus of a performance test?

- A. Evaluating feature completeness
- B. Assessing speed and resource impact**
- C. Verifying user experience
- D. Identifying code vulnerabilities

The primary focus of a performance test is to assess speed and resource impact. This type of testing is crucial because it examines how a system behaves under various conditions, including different loads and stress levels. Performance testing measures key metrics such as response time, throughput, and resource utilization (like CPU and memory usage) when the application is under operation. By evaluating how well the application performs in terms of speed and efficiency, developers and testers can identify performance bottlenecks and ensure that the application meets expected performance standards before it goes live. This ultimately helps in creating a smooth and responsive user experience, as well as ensuring that resources are utilized effectively for optimal performance.

**9. What component performs arithmetic operations such as addition and subtraction in the CPU?**

**A. Control Unit**

**B. Arithmetic Logic Unit**

**C. Memory Address Register**

**D. Accumulator**

The component responsible for performing arithmetic operations such as addition and subtraction within the CPU is known as the Arithmetic Logic Unit (ALU). The ALU is a critical part of the CPU that executes all arithmetic calculations and logical operations required during processing. This includes not only basic operations like addition and subtraction but also complex tasks such as multiplication, division, and logical comparisons. The ALU works in conjunction with other components of the CPU. For example, it receives data from registers and processes this data based on instructions provided by the control unit. The results of these operations can then be stored back in registers or sent to memory, depending on the specific operations being executed. Overall, the ALU is fundamental to the processing capabilities of the CPU, allowing it to perform the calculations necessary for executing programs and handling tasks in computing environments.

**10. What is the first step in the instruction cycle, where the next instruction is retrieved from main memory?**

**A. Decode**

**B. Execute**

**C. Fetch**

**D. Store**

The first step in the instruction cycle is the retrieval of the next instruction from main memory, which is referred to as the "Fetch" phase. During this phase, the CPU uses the program counter to identify the memory address of the instruction that needs to be processed next. It then reads the instruction from that memory address and brings it into the CPU for processing. This step is crucial as it initiates the workflow of executing the program, establishing the foundation for the subsequent steps, which include decoding the instruction and executing it. The other choices represent different phases in the instruction cycle that occur after the fetching of the instruction. Decoding involves interpreting the fetched instruction so the CPU can understand what actions to perform. Executing refers to the actual carrying out of the decoded instruction. Storing typically involves saving results back into memory after execution. Therefore, Fetch is clearly identified as the essential first step in this process.



## 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](mailto:hello@examzify.com).**

**Or visit your dedicated course page for more study tools and resources:**

**<https://ocr-gcse-computerscience.examzify.com>**

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