

# Praxis Computer Sciences (5652) Practice Test (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

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- 1. How many sections does an IPv4 address contain?**
  - A. 4 sections**
  - B. 8 sections**
  - C. 16 sections**
  - D. 2 sections**
  
- 2. Which term describes software that is able to be modified?**
  - A. Reusability**
  - B. Syntax error**
  - C. Modifiability**
  - D. Quadratic**
  
- 3. In the CPU instruction cycle, which stage translates the fetched instruction into signals that control the rest of the CPU?**
  - A. Fetch**
  - B. Decode**
  - C. Execute**
  - D. Store**
  
- 4. Which statement defines object code?**
  - A. The high-level code written by the programmer.**
  - B. The set of instructions for the interpreter.**
  - C. The optimized source code.**
  - D. The output of the compiler after translating the program.**
  
- 5. Which term is used to describe a mechanism that prevents a sender from later denying sending a message?**
  - A. Authentication**
  - B. Confidentiality**
  - C. Nonrepudiation**
  - D. Integrity**

- 6. Which statement describes IPv4?**
- A. IPv4 is a 64-bit protocol with hexadecimal addresses.**
  - B. The Internet Protocol version 4 is the dominant protocol for routing traffic on the Internet, using dotted decimal addresses like 122.45.255.0.**
  - C. IPv4 addresses are always written in binary, not decimal.**
  - D. IPv4 is used only for internal networks.**
- 7. How many sections does an IPv6 address contain?**
- A. 8 sections**
  - B. 4 sections**
  - C. 16 sections**
  - D. 2 sections**
- 8. Which statement correctly lists the two principal functions of an IP address?**
- A. Encrypt data in transit**
  - B. Resolve domain names to IPs**
  - C. Identify the host or network interface and provide location addressing**
  - D. Authenticate users**
- 9. Which development model flows in sequence with phases from conception to maintenance?**
- A. Interpreted Code**
  - B. Waterfall software development**
  - C. Assembly Language**
  - D. Internet Server**
- 10. Which term describes a problem-solving approach that uses rules of thumb to arrive at a quick solution, possibly sacrificing exactness?**
- A. Randomization**
  - B. Heuristic solution**
  - C. Pseudocode**
  - D. Binary Search**

## Answers

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

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## **Explanations**

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**1. How many sections does an IPv4 address contain?**

- A. 4 sections**
- B. 8 sections**
- C. 16 sections**
- D. 2 sections**

IPv4 addresses are 32 bits long and are divided into four sections called octets. Each octet is 8 bits and is written as a decimal value from 0 to 255, with the four octets separated by dots (for example, 192.168.0.1). This four-part structure is what allows IPv4 to represent about 4.3 billion unique addresses. The other options would imply more or fewer sections: eight sections would be 64 bits (a layout like IPv6 uses eight groups of hexadecimal digits), sixteen sections would be 128 bits, and two sections would be only 16 bits—far too small for practical addressing. So the four-section format is the standard for IPv4.

**2. Which term describes software that is able to be modified?**

- A. Reusability**
- B. Syntax error**
- C. Modifiability**
- D. Quadratic**

Modifiability is the ability to make changes to a software product after it's built, whether to fix faults, add new features, or adapt to new environments. A design that supports modifiability uses clean, stable interfaces, clear code organization, and components that can be updated independently without ripple effects. When code is modular, well-documented, and has low coupling with high cohesion, developers can modify one part without touching unrelated areas, making evolution cheaper and less error-prone. For example, adding a new reporting option by adding a new module that communicates through a stable API keeps changes localized rather than requiring widespread rewrites. Reusability focuses on using components in multiple places or projects, which is related but not the same as how easy it is to modify code later. Syntax error describes invalid code that prevents compilation or execution, which is a failure, not a property of how modifiable the software is. Quadratic refers to a mathematical growth pattern and has no bearing on software modify-ability.

**3. In the CPU instruction cycle, which stage translates the fetched instruction into signals that control the rest of the CPU?**

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

Decoding is the stage that turns the fetched instruction into the control signals that drive the rest of the processor. After an instruction is fetched, the decode logic examines the opcode and any operand fields to determine what operation is being requested and which data paths and registers are involved. It then generates the precise control signals that steer the datapath: which registers to read, which ALU operation to perform, memory read/write actions, and how to sequence the subsequent steps. For example, if the instruction requests adding two registers, the decode stage sets up the signals to read those registers, activates the addition in the ALU, and prepares where the result should be written. The Execute stage then carries out the operation, and later stages handle writing results back or accessing memory as needed.

**4. Which statement defines object code?**

- A. The high-level code written by the programmer.**
- B. The set of instructions for the interpreter.**
- C. The optimized source code.**
- D. The output of the compiler after translating the program.**

Object code is the machine-readable version of a program produced by a compiler after it translates the high-level source code. This output, usually in binary or assembly form, is what the computer's processor can actually execute (often after linking into an executable). It's typically not human-friendly because it corresponds directly to processor instructions and memory operations. The idea of code for an interpreter describes something different—often bytecode or source-like instructions run by the interpreter, not the compiled machine code. Optimized source code isn't what the compiler hands off; the run-ready form that results from translation is object code, the actual output of the compiler.

5. Which term is used to describe a mechanism that prevents a sender from later denying sending a message?

- A. Authentication
- B. Confidentiality
- C. Nonrepudiation**
- D. Integrity

Nonrepudiation is the assurance that a sender cannot later deny having sent a message. It's achieved by binding the sender's identity to the message through mechanisms like digital signatures, timestamps, and auditable logs. In practice, a digital signature is the common way to realize nonrepudiation: the sender signs the message with their private key, and anyone with the corresponding public key can verify the signature and the message's content. Because producing a valid signature requires the private key, which only the true sender should possess, the sender cannot plausibly deny authorship later. This idea is distinct from authentication, which is about confirming who is at the other end of a communication; confidentiality keeps the message secret from unauthorized parties; and integrity ensures the message hasn't been altered, but by itself it doesn't prove who sent it or prevent denial of sending. Nonrepudiation adds that verifiable tie between the sender and the message, often supported by trusted certificates, secure key management, and proper logging.

6. Which statement describes IPv4?

- A. IPv4 is a 64-bit protocol with hexadecimal addresses.
- B. The Internet Protocol version 4 is the dominant protocol for routing traffic on the Internet, using dotted decimal addresses like 122.45.255.0.**
- C. IPv4 addresses are always written in binary, not decimal.
- D. IPv4 is used only for internal networks.

Understanding IPv4 involves knowing that it uses 32-bit addresses and is typically represented in dotted decimal form, four decimal numbers separated by dots (for example, 122.45.255.0). This version of the Internet Protocol has long been the main protocol for routing traffic on the Internet, so it remains the dominant protocol in practical use. The statement captures both the widespread role of IPv4 and the common human-readable format of its addresses. Addresses are not written in binary for everyday use, and IPv4 is not a 64-bit protocol nor restricted to internal networks; those descriptions don't match how IPv4 actually works.

7. How many sections does an IPv6 address contain?

- A. 8 sections**
- B. 4 sections
- C. 16 sections
- D. 2 sections

IPv6 addresses are 128 bits long and are shown as eight groups of 16 bits each, written as four hexadecimal digits separated by colons. Since each group is 16 bits, eight groups total 128 bits, so there are eight sections. You can shorten notation by omitting leading zeros within a group or using :: to compress consecutive zero groups, but the expanded address still has eight groups.

**8. Which statement correctly lists the two principal functions of an IP address?**

- A. Encrypt data in transit**
- B. Resolve domain names to IPs**
- C. Identify the host or network interface and provide location addressing**
- D. Authenticate users**

IPs have two main jobs at the network level. First, they identify a device on a network—the unique address of a host or its network interface so that data has a specific destination. Second, they provide location addressing that guides routing: the address lets routers determine where to send packets across networks toward the right network and ultimately to the target device. This dual role makes IP addresses essential for both delivering data to the correct device and getting it to the right network path. Think of a typical address like 192.168.1.42: the network portion (192.168.1) helps routers know which local network to reach, while the host portion (42) specifies the exact device on that network. DNS is a separate process that translates domain names to IPs, and encryption or user authentication are handled by other technologies and protocols, not by the IP address itself.

**9. Which development model flows in sequence with phases from conception to maintenance?**

- A. Interpreted Code**
- B. Waterfall software development**
- C. Assembly Language**
- D. Internet Server**

Understanding this question means recognizing a software development life cycle model that moves work through distinct, fixed phases in a set order from initial idea to ongoing upkeep. The Waterfall approach embodies this idea: you start with gathering and agreeing on requirements, then move to system design, followed by implementation, then verification through testing, deployment, and finally maintenance. Each stage has specific deliverables and gates, and you typically don't revisit earlier stages once you've moved forward, which creates a clear, linear progression from conception to maintenance. The other items aren't about a development process: interpreting code refers to how programs run, assembly language is a low-level programming language, and an Internet server is a hosting platform, not a lifecycle model. So the sequential, phase-driven flow from conception to maintenance is characteristic of the Waterfall software development model.

**10. Which term describes a problem-solving approach that uses rules of thumb to arrive at a quick solution, possibly sacrificing exactness?**

**A. Randomization**

**B. Heuristic solution**

**C. Pseudocode**

**D. Binary Search**

Relying on practical shortcuts to get a quick answer, even if it isn't perfectly exact, is what a heuristic approach is all about. Heuristics are rule-of-thumb strategies used to simplify and speed up problem solving when time, information, or cognitive effort are limited. They aim for a good-enough solution fast, rather than an exact, guaranteed one. That's why this term fits best. Randomization involves chance and doesn't imply a consistent shortcut for speed or accuracy; pseudocode is just a human-readable way to describe an algorithm, not a quick-and-dirty solving method; binary search is a precise algorithm that narrows the search space with exact results, not an approximate shortcut.

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## 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://praxis5652.examzify.com>**

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

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