

Programmable Logic Controller (PLC) Practice Test (Sample)

Study Guide



Everything you need from our exam experts!

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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 16

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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. What value is stored in the memory location when there is no voltage at the terminal?**
 - A. 1**
 - B. 0**
 - C. 2**
 - D. -1**

- 2. The Run mode is used to execute the user program. Which option best describes this function?**
 - A. Run**
 - B. Stop**
 - C. Program**
 - D. Test**

- 3. The output interface module connects to load devices such as lamps or solenoids**
 - A. True**
 - B. False**
 - C. Not sure**
 - D. Sometimes**

- 4. The OTE instruction is functionally described as which component?**
 - A. A reset coil**
 - B. A relay coil**
 - C. A timer**
 - D. A counter**

- 5. In a PLC system, what is a primary role of the input interface module?**
 - A. To convert field device signals to processor-ready signals**
 - B. To generate control signals for actuators**
 - C. To manage memory and data storage**
 - D. To perform arithmetic operations**

- 6. Which step helps ensure data integrity when programming a PLC?**
- A. Confirm the program version matches the target hardware before loading**
 - B. Load any random program**
 - C. Change I/O wiring after loading**
 - D. Remove the PLC from the system**
- 7. In a ladder logic rung, where is the output located relative to the input conditions?**
- A. Left side**
 - B. Center**
 - C. Far Right**
 - D. Top**
- 8. What is the main advantage of using a voltage sensing device over a current sensing device for analog inputs?**
- A. Higher precision.**
 - B. Faster response time.**
 - C. Lower cost.**
 - D. Easier wiring.**
- 9. PLCs were originally designed as replacements for**
- A. Relay Control Panels**
 - B. Computer Workstations**
 - C. Pneumatic Switches**
 - D. Manual Switchboards**
- 10. What is an important security consideration when using a programming device?**
- A. Restrict access to authorized personnel**
 - B. Allow anyone to modify programs**
 - C. Disable all audit trails**
 - D. Disable safety interlocks**

Answers

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

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Explanations

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1. What value is stored in the memory location when there is no voltage at the terminal?

- A. 1
- B. 0**
- C. 2
- D. -1

In digital inputs and PLC memory, a voltage present at the terminal is read as a logical high (1), while no voltage is read as a logical low (0). The memory location simply stores the current input condition, so with no voltage there, it stores 0. This 0 represents the “off” or “false” state in binary logic. Values like 2 or -1 aren’t part of the standard binary input encoding used for this kind of memory.

2. The Run mode is used to execute the user program. Which option best describes this function?

- A. Run**
- B. Stop
- C. Program
- D. Test

Run mode is the operating state where the PLC actually executes the user program. In this mode the controller continuously performs a scan cycle: it reads the current inputs, processes the program logic, and updates the outputs accordingly. This is when the control system actively responds to sensor changes and drives actuators, turning the programmed instructions into real-world actions. Stopping halts execution, so outputs aren’t driven by the program. Programming mode is for editing or downloading a new program without running it. Test mode is for debugging or simulation, allowing you to monitor or force signals without affecting the actual process. Because Run mode is the state that physically runs the user program and drives outputs, it best describes this function.

3. The output interface module connects to load devices such as lamps or solenoids

- A. True**
- B. False
- C. Not sure
- D. Sometimes

The main idea is that the output interface module is what drives external devices. It provides the electrical path and switching capability that energizes loads like lamps and solenoids when the PLC outputs a signal. In a typical PLC, output modules use relay contacts or transistor outputs to switch current to the connected loads, turning them on or off according to the control program. This means the statement is true: the output interface connects to and controls load devices. Options suggesting uncertainty, variability, or that it doesn’t connect to loads don’t fit the actual function, since driving loads is exactly what the output interface is designed to do.

4. The OTE instruction is functionally described as which component?

- A. A reset coil**
- B. A relay coil**
- C. A timer**
- D. A counter**

The concept being tested is how an OTE instruction functions in ladder logic. An Output Energize (OTE) coil is used to drive an output device; when the rung is true, the OTE energizes the connected output, similar to energizing a relay coil in a hard-wired control. This is why it's described as a relay coil—the coil represents the actuator that gets powered to activate the load (like a lamp, a motor starter, or a transistor output). It's not a reset coil, since that role belongs to a reset instruction that unlatch an output. It's also not a timer or a counter, which are separate function blocks used for delaying actions or counting events rather than directly energizing an output.

5. In a PLC system, what is a primary role of the input interface module?

- A. To convert field device signals to processor-ready signals**
- B. To generate control signals for actuators**
- C. To manage memory and data storage**
- D. To perform arithmetic operations**

In a PLC, the input interface module's job is to take signals from field devices and convert them into processor-ready signals. This means conditioning the signals so the CPU can read them reliably during its scan—digital inputs are translated to valid logic levels, while analog inputs are converted (and scaled) to digital representations the PLC can process. The module may also provide isolation and protection to keep the CPU safe from faults and noise. This isn't about controlling anything or storing or crunching data. Generating control signals for actuators belongs to the output side, memory management and data storage are handled by the CPU and its memory system, and arithmetic operations are performed by the PLC program running on the CPU.

6. Which step helps ensure data integrity when programming a PLC?

- A. Confirm the program version matches the target hardware before loading**
- B. Load any random program**
- C. Change I/O wiring after loading**
- D. Remove the PLC from the system**

Ensuring data integrity involves making sure the program you load is meant for that specific PLC hardware. Before loading, confirming the program version matches the target hardware helps guarantee that the code, addressing, and configuration data align with the device's firmware and I/O map. If the versions or hardware IDs don't match, loading could overwrite data in a way the hardware can't interpret, leading to corruption or unsafe behavior. This pre-load check acts as a safeguard to keep the PLC's data and configuration consistent with what it expects. Loading a random program would bypass this safeguard and could corrupt data or cause incorrect operation. Changing I/O wiring after loading doesn't address data integrity and can lead to misreads or hardware damage. Removing the PLC from the system stops operation but doesn't protect the integrity of the programmed data during loading.

7. In a ladder logic rung, where is the output located relative to the input conditions?

- A. Left side**
- B. Center**
- C. Far Right**
- D. Top**

In ladder logic, you read a rung as a left-to-right path: power or the control signal enters from the left, passes through the input devices (contacts) on the left, and, if the path is complete, reaches the actuator on the right. The output coil or function block is placed at the far right of the rung, so it's energized only when the input conditions on the left are satisfied. That visual arrangement mirrors the flow of logic: inputs on the left, output on the far right. The center or top locations aren't where outputs are drawn, and the left side is where the inputs reside.

8. What is the main advantage of using a voltage sensing device over a current sensing device for analog inputs?

- A. Higher precision.**
- B. Faster response time.**
- C. Lower cost.**
- D. Easier wiring.**

The main idea is that how quickly a signal is captured depends on the path it takes to reach the ADC. A voltage input lets the field signal be read directly by the analog-to-digital converter, usually with fewer delay-causing elements, so changes in the signal appear in the measurement faster. A current loop, on the other hand, requires a transmitter to drive current through a loop and then through a shunt in the input, adding extra circuit dynamics, capacitance, and a settling time that can slow the response to quick changes. Because of these extra steps and the loop's inherent dynamics, voltage sensing typically offers a faster response time than current sensing. While precision, cost, or wiring can vary with the setup, the standout advantage for fast updates is the quicker response of voltage inputs.

9. PLCs were originally designed as replacements for

- A. Relay Control Panels**
- B. Computer Workstations**
- C. Pneumatic Switches**
- D. Manual Switchboards**

Programmable logic controllers were created to replace relay control panels, where machinery logic was built with hard-wired relays and interconnecting wiring. A PLC lets you implement that same logic in software, so changes to how a machine operates can be made quickly by editing a program rather than rewiring circuits. This brought easier updates, faster troubleshooting, and the ability to handle more complex control schemes as automation evolved. While computers and other devices later joined automation workflows, the original purpose of a PLC was to simplify and consolidate the relay-based control logic found in control panels. Pneumatic switches and manual switchboards belong to earlier or different parts of the control system, but the core shift PLCs represent is replacing electrical relay logic in control panels with programmable logic.

10. What is an important security consideration when using a programming device?

- A. Restrict access to authorized personnel**
- B. Allow anyone to modify programs**
- C. Disable all audit trails**
- D. Disable safety interlocks**

Restricting access to authorized personnel is essential when using a programming device because it limits who can view and modify the PLC logic. This helps prevent unintended changes, tampering, or malware from altering how the system operates. With proper access control—such as unique credentials, role-based permissions, and solid physical security—you gain accountability and the ability to track who made each change, which supports safe and reliable operation. Allowing anyone to modify programs removes that control and massively increases risk of mistakes or deliberate damage. Disabling audit trails erases the records that show who changed what and when, making investigations and accountability impossible. Disabling safety interlocks eliminates a built-in safety mechanism that helps prevent dangerous or unsafe conditions. So, restricting access to authorized personnel is the clear, best approach.

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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.

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

<https://programmablelogiccontroller.examzify.com>

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

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