

Welding Theory 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. Which electrode end digits indicate low hydrogen?**
 - A. 5, 6, 8**
 - B. 1, 2, 3**
 - C. 7, 9, 0**
 - D. 4, 5, 6**

- 2. Which finish symbol represents Grinding?**
 - A. Grinding**
 - B. Chipping**
 - C. Machining**
 - D. Polishing**

- 3. If a technician mentions adjusting CV to stabilize output, what property is being stabilized?**
 - A. Voltage**
 - B. Current**
 - C. Power**
 - D. Frequency**

- 4. In relation to motor control, which acronym would describe the maximum rate of linear travel per minute?**
 - A. IPM**
 - B. RPM**
 - C. RCM**
 - D. FPM**

- 5. The 2G position on plate indicates which groove?**
 - A. Horizontal groove**
 - B. Flat-groove**
 - C. Vertical groove**
 - D. Overhead groove**

- 6. In the E71T-1 electrode designation, the position code 0 corresponds to which welding positions?**
- A. Flat and horizontal fillet**
 - B. All-position welding**
 - C. Vertical**
 - D. Overhead**
- 7. The symbol Fe corresponds to which element?**
- A. Iron**
 - B. Copper**
 - C. Nickel**
 - D. Silicon**
- 8. In a device specification, which setting would be described as maintaining a steady voltage rather than a steady current?**
- A. Constant voltage**
 - B. Constant current**
 - C. Constant resistance**
 - D. Constant power**
- 9. The weld _____ is the outer surface of the weld bead on the side the weld was made. What is this surface called?**
- A. Bead surface**
 - B. Face**
 - C. Crown**
 - D. Root**
- 10. The -B9 suffix indicates which composition?**
- A. 9% chrome, 1% Moly/vanadium**
 - B. 9% chrome, 1% molly**
 - C. 9% chrome, 2% molly**
 - D. 9% molly, 1% vanadium**

Answers

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

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Explanations

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1. Which electrode end digits indicate low hydrogen?

- A. 5, 6, 8**
- B. 1, 2, 3
- C. 7, 9, 0
- D. 4, 5, 6

In welding, the hydrogen content of the electrode coating is a key factor in weld quality. The markings or end codes on an electrode indicate how much hydrogen the coating will release into the weld. Low-hydrogen electrodes are chosen when hydrogen cracking could be a concern, especially on high-strength steels, because they minimize the hydrogen available to diffuse into the weld metal. That's why those end markings are used to identify low-hydrogen types. These marks also cue you into handling requirements—low-hydrogen electrodes often need careful drying or baking and proper storage to keep hydrogen exposure low. Other end markings point to different coating types or higher hydrogen content, which are not as effective at preventing hydrogen-related cracking. So, when the goal is to minimize hydrogen in the weld, you look for the end-code that signifies low hydrogen.

2. Which finish symbol represents Grinding?

- A. Grinding**
- B. Chipping
- C. Machining
- D. Polishing

Finish marks in welding diagrams tell you what post-weld work to perform. Grinding as a finish means removing excess weld material and smoothing the surface with an abrasive wheel to achieve a flat, even finish. This is chosen when the goal is a clean, uniform surface without removing a lot of material. The other options describe different post-weld or surface treatments: chipping is slag removal, machining is material removal with machine tools to precise dimensions, and polishing is creating a high-gloss, cosmetic surface. So the symbol indicating the grinding finish is the one that directs the weld finish to be ground.

3. If a technician mentions adjusting CV to stabilize output, what property is being stabilized?

- A. Voltage**
- B. Current
- C. Power
- D. Frequency

In constant voltage mode, the power supply holds the output voltage at a fixed value. In welding, that means the arc voltage stays roughly the same even if the arc length or load changes. The current will automatically vary to keep that voltage steady, which stabilizes the arc length and the welding process overall. So the property being stabilized is voltage. Current isn't held constant in this mode; it changes with the load. Power can fluctuate because it depends on both voltage and current, and frequency isn't the target of CV in DC welding.

4. In relation to motor control, which acronym would describe the maximum rate of linear travel per minute?

- A. IPM
- B. RPM
- C. RCM
- D. FPM

Linear feed rate describes how fast a tool or head moves along a straight line, measured as distance per unit time. When we talk about how many inches the mechanism can travel in one minute, the natural unit is inches per minute. That's why IPM is the best match here—it directly communicates linear progression along the path, with the unit being small enough to describe precise, controlled motion typical in motor control and welding contexts. Rotational speed, expressed as RPM, measures how many revolutions occur each minute, which isn't a measure of straight-line travel. Feet per minute could also describe linear motion, but inches-per-minute is the standard unit in many motor-control and fabrication settings because it aligns with common table and torch travel scales and provides finer granularity.

5. The 2G position on plate indicates which groove?

- A. Horizontal groove
- B. Flat-groove
- C. Vertical groove
- D. Overhead groove

The main idea is how welding positions are defined by the orientation of the joint and the weld path. In plate welding, the "G" stands for a groove weld, and the number indicates the orientation of the weld relative to gravity and the plate. The 2G position refers to a groove weld made in a horizontal orientation on a plate. That means the groove and the weld bead run horizontally across the joint as the plate is positioned to present a horizontal plane for welding. This orientation matters because gravity and access influence how you control the weld pool and the slag. A horizontal groove is chosen to optimize pool control and slag removal for that joint geometry. Other positions describe different orientations (flat, vertical, overhead), which change how the molten metal behaves and how you manipulate the electrode.

6. In the E71T-1 electrode designation, the position code 0 corresponds to which welding positions?

- A. Flat and horizontal fillet
- B. All-position welding
- C. Vertical
- D. Overhead

Welding position codes on electrode designations tell you which positions the electrode can weld reliably. For the E71T-1 tubular flux-cored electrode, the code 0 means it's intended for flat welding and horizontal fillet welds only. This reflects a limited-position capability, meaning it isn't specified for vertical or overhead welding with this code. If you needed all-position capability, you'd use an electrode designated with a different code indicating that broader use. So the correct choice corresponds to flat and horizontal fillet positions.

7. The symbol Fe corresponds to which element?

- A. Iron**
- B. Copper**
- C. Nickel**
- D. Silicon**

Chemical symbols are unique abbreviations for elements, and Fe specifically identifies iron. The symbol Fe comes from the Latin name ferrum, which is why iron uses Fe as its shorthand. Copper, nickel, and silicon each have their own symbols—Cu, Ni, and Si—so they don't match Fe. Knowing these symbols helps you recognize elements quickly in welding and metallurgy contexts, where iron and its alloys are fundamental.

8. In a device specification, which setting would be described as maintaining a steady voltage rather than a steady current?

- A. Constant voltage**
- B. Constant current**
- C. Constant resistance**
- D. Constant power**

The main idea here is how a welding power source regulates its output: whether it locks the voltage or locks the current. Maintaining a steady voltage means the device is in a constant-voltage mode, where the output voltage is kept essentially fixed while the current varies as the load changes. This keeps the arc voltage stable, which helps maintain a consistent arc length and bead profile even as the welding conditions shift. In contrast, a constant-current setting would hold the current fixed and let the voltage float up or down with the load, which isn't described here. The other options—constant resistance keeps the voltage-to-current ratio fixed, and constant power keeps the product of voltage and current fixed—don't describe a steady output voltage. So the setting described as maintaining a steady voltage is constant voltage.

9. The weld ____ is the outer surface of the weld bead on the side the weld was made. What is this surface called?

- A. Bead surface**
- B. Face**
- C. Crown**
- D. Root**

The surface name you're looking for is the face. In welding terminology, the face is the outward surface of the weld bead on the side where the welding was done. It's the visible exterior of the bead on the welded side, as opposed to the root, which is the deepest part at the joint, or the crown, which is the top, usually convex part of the bead. The term bead surface isn't a standard label, and the other options describe different parts of the bead. So the outer surface on the welded side is called the face.

10. The -B9 suffix indicates which composition?

A. 9% chrome, 1% Molly/vanadium

B. 9% chrome, 1% molly

C. 9% chrome, 2% molly

D. 9% molly, 1% vanadium

The suffix communicates the filler metal's alloying makeup: it signals about 9% chromium, with roughly 1% of a secondary alloying element such as molybdenum or vanadium. The chromium content is what gives stainless-type fillers their corrosion resistance, while the small amount of molybdenum or vanadium adds strength or pitting resistance. So the option that matches this pattern is the one listing 9% chromium and 1% molybdenum or vanadium. The other choices would place the second element at a different percentage or swap the primary element, which doesn't align with how this suffix is defined.

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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://weldingtheory.examzify.com>

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

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