GMAW Welding Level 2 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

1. Whiskers in a weld joint are caused by

A. Pushing a welding wire past the leading edge of the weld pool.

B. Pushing a welding wire past the trailing edge of the weld pool.

C. Using too high shielding gas flow.

D. Incorrect electrode angle.

2. DCEP polarity in GMAW generally results in which outcome compared to DCEN?

A. Lower penetration

B. Higher penetration

C. No difference

D. More spatter only

3. Subsurface porosity in a GMAW weld can result from what cause?

A. Excessive shielding gas

B. Nitrogen entering the weld pool

C. Over-tensioning

D. Using argon shielding

4. Two variables that affect droplet transfer in short circuiting transfer are

A. Slope and inductance.

B. Shielding gas composition and wire diameter.

C. Travel speed and arc length.

D. Heat input and welding position.

5. Beveling edges thicker than 1/4 inch is recommended when using GMAW.

A. True

B. Depends on material

C. Not applicable

D. False

6. Globular transfer produces a stable arc, excellent weld appearance, and little weld spatter.

A. True

B. False

C. It produces an unstable arc

D. Requires post-weld cleaning

7. Globular transfer is often used for welding metal more than 1/2 inch thick.

A. True

B. Partially true

C. False

D. Depends on material

8. A drag angle is a travel angle where the electrode wire points away from the direction of travel.

A. False

B. It is a perpendicular angle

C. It is the angle toward the direction of travel

D. True

9. Which shielding gas is appropriate for aluminum welding with GMAW?

A. 95% Argon / 5% Oxygen

B. 50% Argon / 50% Helium

C. 75% Argon / 25% CO_2

D. 100% Argon

10. Nitrogen entering the weld pool from the atmosphere can cause which issue?

A. Increased hardness

B. Subsurface porosity and reduced penetration

C. Faster weld speed

D. Better corrosion resistance

Answers

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

Explanations

1. Whiskers in a weld joint are caused by

A. Pushing a welding wire past the leading edge of the weld pool.

B. Pushing a welding wire past the trailing edge of the weld pool.

C. Using too high shielding gas flow.

D. Incorrect electrode angle.

Whiskers show up when the filler wire is fed too far ahead of the molten weld pool. In gas metal arc welding, keep the wire tip within or just at the front edge of the puddle so the molten metal from the wire fuses smoothly into the leading edge. If the wire is pushed past that leading edge, the tip continues to melt and deposit metal ahead of the pool without proper fusion, which cools into thin, hairlike projections along the bead—these are the whiskers. Maintaining proper wire stickout and keeping the arc aligned with the front of the pool helps prevent this defect. Pushing behind the pool would deposit metal behind the bead and disrupt fusion at the front, a high shielding gas flow tends to cause porosity or instability rather than whiskers, and an incorrect electrode angle changes bead shape but isn't the typical cause of whiskers.

2. DCEP polarity in GMAW generally results in which outcome compared to DCEN?

A. Lower penetration

B. Higher penetration

C. No difference

D. More spatter only

In GMAW, polarity controls where most of the arc heat goes. With DCEP, the electrode is positive and the workpiece is negative, so more heat is directed into the base metal. That extra heat increases fusion depth, giving higher penetration than with DCEN, where more heat goes into the electrode and the weld bead tends to be shallower. While other factors like wire size, shielding gas, and transfer mode affect the exact results, the key idea is that reversing polarity shifts heat toward the workpiece, boosting penetration.

3. Subsurface porosity in a GMAW weld can result from what cause?

A. Excessive shielding gas

B. Nitrogen entering the weld pool

C. Over-tensioning

D. Using argon shielding

Gas entrapment in the molten weld metal can produce porosity, and subsurface porosity specifically happens when gas bubbles form below the surface as the metal solidifies. If nitrogen gets into the weld pool, such as from air leakage into the shielding gas or from a gas mixture that contains nitrogen, it increases the gas content in the molten metal. Nitrogen doesn't stay dissolved well as the weld cools, so it tends to form gas bubbles that become trapped beneath the surface, creating subsurface porosity. Keeping a proper, clean shielding gas environment (preferably inert and appropriate for the material) helps prevent this issue. Excessive shielding gas or using argon shielding alone aren't the direct causes of subsurface porosity, and over-tensioning is a mechanical issue rather than a gas-related one.

4. Two variables that affect droplet transfer in short circuiting transfer are

A. Slope and inductance.

B. Shielding gas composition and wire diameter.

C. Travel speed and arc length.

D. Heat input and welding position.

In short-circuit transfer, the timing and stability of each droplet breaking off from the wire tip are driven by the current waveform in the circuit. The slope of the current rise—how quickly the current climbs after the short breaks and the arc re-ignites—directly affects when the next droplet is pulled across into the weld pool. The inductance of the welding circuit stores energy and shapes that current waveform, smoothing or sharpening changes in current, which in turn influences droplet size, detachment frequency, and arc stability. Together, these two factors control how cleanly and consistently droplets transfer in this mode. Other factors like shielding gas composition, wire diameter, travel speed, arc length, heat input, and welding position influence heat, penetration, or material flow in different ways, but the immediate control over droplet formation and transfer timing in short-circuit mode comes most directly from the current rise slope and the circuit inductance.

5. Beveling edges thicker than 1/4 inch is recommended when using GMAW.

A. True

B. Depends on material

C. Not applicable

D. False

When welding thicker sections with GMAW, beveling the edges helps achieve proper root penetration and a sound joint. Creating a groove on each side provides access for the weld metal to reach the root and fill the joint adequately, which is difficult to accomplish with a flat edge alone. This reduces the risk of lack of fusion, porosity, and excessive heat input in a single pass, and it often allows for a stable root pass followed by fill and cap passes. For thicknesses over about 1/4 inch, the beveled groove is a practical and common preparation to ensure full penetration and a strong weld. For thinner materials, beveling isn't usually necessary, which is why the recommendation specifically applies when the thickness exceeds 1/4 inch.

6. Globular transfer produces a stable arc, excellent weld appearance, and little weld spatter.

A. True

B. False

C. It produces an unstable arc

D. Requires post-weld cleaning

Globular transfer in GMAW uses large molten droplets that transfer to the weld pool. Those droplets detach irregularly, which makes the arc less stable and causes more weld spatter. The resulting bead is typically rough and inconsistent in appearance. So describing globular transfer as having a stable arc, excellent weld appearance, and little spatter isn't accurate. Those qualities are more characteristic of spray transfer, which uses fine droplets for a smoother bead with less spatter.

7. Globular transfer is often used for welding metal more than 1/2 inch thick.

A. True

B. Partially true

C. False

D. Depends on material

Globular transfer relies on large molten droplets that detach irregularly, making the arc unstable and producing significant spatter. When welding thicker metal, you need a stable arc with good penetration and clean welds, which is best achieved with spray or pulsed-spray transfer and often with an argon-rich shielding gas. Because globular transfer is irregular and tends to have poor control over heat input and penetration, it isn't typically used for metal thicker than about 1/2 inch. So the statement is not true; thicker sections are better welded with spray/pulsed transfer rather than globular.

8. A drag angle is a travel angle where the electrode wire points away from the direction of travel.

A. False

B. It is a perpendicular angle

C. It is the angle toward the direction of travel

D. True

A drag angle is a travel angle where the electrode wire points away from the direction of travel. In MIG welding, the travel angle describes how you tilt the gun as you move along the joint. When you're moving in a direction and the wire tip is oriented behind you—pointing opposite to the way you're moving—that's a drag angle. This is different from a push angle, where the tip points toward the direction of travel. So the statement is true.

9. Which shielding gas is appropriate for aluminum welding with GMAW?

A. 95% Argon / 5% Oxygen

B. 50% Argon / 50% Helium

C. 75% Argon / 25% CO2

D. 100% Argon

Shielding gas choice for aluminum in GMAW centers on protecting the molten aluminum from the atmosphere and maintaining a stable arc. Aluminum oxidizes easily at welding temperatures, so using an inert gas that doesn't react with the metal helps prevent oxide formation, porosity, and weak welds. Pure argon is ideal because it is inert and provides good arc stability and bead quality for aluminum with common filler wires, resulting in clean, uniform welds with minimal porosity. Gas blends that include oxygen or CO2 introduce reactive components that can form oxides or porosity in the weld, while mixes with helium change heat input and arc characteristics in ways that aren't needed for standard aluminum welding. That's why 100% argon is the best and most widely used shielding gas for aluminum GMAW.

10. Nitrogen entering the weld pool from the atmosphere can cause which issue?

A. Increased hardness

B. Subsurface porosity and reduced penetration

C. Faster weld speed

D. Better corrosion resistance

Shielding the weld from air is essential because atmospheric gases can contaminate the molten metal. If nitrogen from the atmosphere leaks into the weld pool, it tends to come out of solution as the metal cools and forms gas pockets beneath the surface, creating subsurface porosity. This gas presence also disrupts the melt pool's stability and heat flow, often reducing how deeply the weld fuses into the joint. So nitrogen contamination shows up as subsurface porosity and reduced penetration, rather than improving hardness, speed, or corrosion resistance.

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://gmawweldinglvl2.examzify.com

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