GMAW WELDING LEVEL 2 PRACTICE TEST (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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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.

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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!

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Questions

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1. What is the typical arc length for a stable GMAW arc on mild steel?

A. About 1/8 inch to 3/16 inch (3–5 mm)

B. About 1/4 inch to 3/8 inch

C. About 1/16 inch to 1/8 inch

D. About 1/2 inch

2. What is the recommended sequence for a typical GMAW weld on a plate: root, fill, cap?

A. Cap pass first, then root pass, then fill passes.

B. Root pass for penetration, then fill passes to reach final thickness, finish with cap pass for shape.

C. Fill passes only.

D. Root and cap only.

3. Which option describes a correct order of passes for a full-penetration groove weld from root to cap?

A. Prepare joint and bevel, clean, tack parts to maintain alignment; deposit a root pass; add fill passes; finish with a cap pass.

B. Finish with a cap pass, then root pass, then fill passes.

C. Only use a single deep pass.

D. Preheat and then cap pass only.

4. Greater penetration is obtained using which technique?

A. Pushing

B. Pulling

C. Rotating

D. Dipping

5. What are crater cracks in GMAW and how can they be prevented?

A. Crater cracks are cracks in filler wire; prevent by using larger wire.

B. Crater cracks occur at weld root during cooling; prevent by increasing travel speed.

C. Crater cracks occur in shielding gas; prevent by increasing gas flow.

D. Crater cracks occur at the end of a weld due to thermal contraction; prevent by filling the crater with additional bead or short weave before ending and by controlling cooling.

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6. What is the recommended gas flow rate range for MIG welding on mild steel with 75/25 gas?

A. About 60 to 70 CFH.

B. About 20 to 25 CFH.

C. About 5 to 10 CFH.

D. About 100 to 120 CFH.

7. What effect does a short arc length have on weld quality in GMAW?

A. Increases spatter and causes porosity

B. Reduces spatter and improves bead appearance, but too short can cause poor fusion and cold welds

C. Has no effect on weld quality

D. Eliminates the need for shielding gas

8. What happens if CTWD is too short in GMAW?

A. It reduces heat input but improves deposition.

B. It increases shielding gas flow but does not affect weld.

C. It concentrates heat, increasing heat input and penetration but can cause arc instability or tip arcing.

D. It has no effect on the weld.

9. In aluminum GMAW, which transfer modes are commonly used, and what determines the mode?

A. Spray transfer only; gas composition does not matter.

B. Short-circuit transfer only; mode is fixed for all thickness.

C. Spray or short-circuit transfer; thickness determines the mode.

D. Pulsed transfer only; wire diameter determines mode.

10. What is interpass temperature and why is it important in multi-pass welds?

A. Interpass temperature is the maximum allowed temperature between passes; controlling it prevents hydrogen cracking and distortion and ensures good bonding between passes.

B. Interpass temperature is the temperature of the shielding gas.

C. Interpass temperature is not a concern in GMAW.

D. Interpass temperature is the temperature of the filler metal before welding.

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Answers

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

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Explanations

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1. What is the typical arc length for a stable GMAW arc on mild steel?

A. About 1/8 inch to 3/16 inch (3–5 mm)

B. About 1/4 inch to 3/8 inch

C. About 1/16 inch to 1/8 inch

D. About 1/2 inch

Arc length is the distance between the electrode tip and the workpiece. For a stable GMAW arc on mild steel, aim for about 1/8 inch to 3/16 inch (3–5 mm). This range provides enough arc voltage to sustain a steady metal transfer and a consistent bead, while minimizing spatter and bead irregularities. If the arc is too short, you can stub the electrode and experience an unstable arc; if it's too long, the arc becomes unstable, more spatter occurs, and control over heat and penetration is reduced.

2. What is the recommended sequence for a typical GMAW weld on a plate: root, fill, cap?

A. Cap pass first, then root pass, then fill passes.

B. Root pass for penetration, then fill passes to reach final thickness, finish with cap pass for shape.

C. Fill passes only.

D. Root and cap only.

When welding a plate with GMAW, you build the weld from the inside out: establish a solid root to ensure penetration, then add material with fill passes to reach the final thickness, and finish with a cap pass to shape and seal the weld. The root pass is crucial because it creates fusion right at the joint's root, giving the weld its strength and preventing lack of penetration. If you skip the root or try to cap first, you won't have a solid base for proper fusion at the bottom of the joint, and the top finish won't fix that deficiency. Filling up the joint with additional passes adds material gradually and controls heat input to avoid burn-through or excessive distortion. The final cap pass provides the surface contour, a clean finish, and protection of the weld crown, ensuring the weld is complete and ready for service.

3. Which option describes a correct order of passes for a full-penetration groove weld from root to cap?

A. Prepare joint and bevel, clean, tack parts to maintain alignment; deposit a root pass; add fill passes; finish with a cap pass.

B. Finish with a cap pass, then root pass, then fill passes.

C. Only use a single deep pass.

D. Preheat and then cap pass only.

In a full-penetration groove weld, you build the weld from the root to the cap. Start with careful joint preparation: bevel the groove so the root can fuse properly, clean the parts to remove contaminants, and tack them to maintain alignment. Then deposit a root pass to establish fusion at the root and start the penetration through the joint. After the root is solid, add fill passes to build up the weld thickness along the weld contour while controlling heat input and distortion. Finish with a cap pass to produce the final surface finish and ensure the top layer is fused and shaped correctly. This sequence ensures complete penetration, good fusion along the root, proper weld contour, and a sound cap. The other options don't fit because they disrupt the required order or omit essential steps. Finishing with a cap before the root and fills prevents proper penetration and fusion. Relying on a single deep pass cannot reliably achieve full penetration and control. Preheating and capping only neglect the necessary root and fill passes needed for a true full-penetration weld.

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4. Greater penetration is obtained using which technique?

A. Pushing

B. Pulling

C. Rotating

D. Dipping

In MIG welding, how you move the gun changes how heat is delivered to the joint. Pulling the torch toward you concentrates the arc into the joint, directing more heat into the base metal. That higher heat input at the root promotes deeper fusion, so you get greater penetration. The bead you get while pulling is typically narrower and taller, reflecting that increased depth. Pushing the gun forward tends to spread heat over a wider surface, producing a flatter, wider bead with less penetration. The other techniques aren't aimed at increasing root penetration in the same way, so they don't produce as deep a weld.

5. What are crater cracks in GMAW and how can they be prevented?

A. Crater cracks are cracks in filler wire; prevent by using larger wire.

B. Crater cracks occur at weld root during cooling; prevent by increasing travel speed.

C. Crater cracks occur in shielding gas; prevent by increasing gas flow.

D. Crater cracks occur at the end of a weld due to thermal contraction; prevent by filling the crater with additional bead or short weave before ending and by controlling cooling.

Crater cracks form at the end of a GMAW weld as the last deposited metal cools and contracts, creating tensile stresses in that area. If the crater is left open, this stress concentration can initiate a crack that propagates into the weld. The best way to prevent this is to finish the crater properly by adding material with a short final bead or a light weave to close the crater before stopping. This smooths the transition as it solidifies and reduces the stress concentration that leads to cracking. Controlling cooling is also important—keep a steady heat input, avoid an abrupt stop, and consider adjustments to technique or preheating if needed to prevent rapid cooling that can exacerbate contraction cracks. In short, avoid ending the weld with an open crater and manage how quickly the metal cools.

6. What is the recommended gas flow rate range for MIG welding on mild steel with 75/25 gas?

A. About 60 to 70 CFH.

B. About 20 to 25 CFH.

C. About 5 to 10 CFH.

D. About 100 to 120 CFH.

Gas flow rate in MIG welding must create a stable shielding envelope around the weld pool. For mild steel using a 75/25 (argon-CO2) shielding gas, the typical range kept by most setups is about 20 to 25 CFH. This level provides enough gas to protect the molten weld from the atmosphere without generating excessive turbulence or wasting gas. If the flow is too low, shielding won't fully cover the weld, increasing the risk of porosity and contamination. If it's too high, the gas can blow around the joint, cause turbulence, push away the shielding, and waste gas. Among common options, 20–25 CFH sits in the optimal range, while the others are either too high or too low for reliable shielding.

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7. What effect does a short arc length have on weld quality in GMAW?

A. Increases spatter and causes porosity

B. Reduces spatter and improves bead appearance, but too short can cause poor fusion and cold welds

C. Has no effect on weld quality

D. Eliminates the need for shielding gas

In GMAW, arc length directly influences heat input, shielding effectiveness, and how the weld pool behaves. A shorter arc length keeps the arc closer to the work, which stabilizes the arc and makes shielding gas coverage more consistent. This tends to reduce spatter and gives a cleaner bead with nicer appearance because the molten metal wets the surface more evenly and the gas protects the weld zone more effectively. But if the arc length is too short, the heat input can become insufficient for proper fusion. The weld pool may cool too quickly and fail to fuse the base metal and filler metal adequately, leading to poor fusion and potentially cold welds. So, a short arc helps with spatter and bead quality up to a point, but going too short compromises fusion.

8. What happens if CTWD is too short in GMAW?

A. It reduces heat input but improves deposition.

B. It increases shielding gas flow but does not affect weld.

C. It concentrates heat, increasing heat input and penetration but can cause arc instability or tip arcing.

D. It has no effect on the weld.

When the distance from the contact tip to the workpiece is too short, the arc length becomes very small. That concentrates energy into a smaller area, so the heat input to the weld zone increases and the penetration deepens. But this close spacing also makes the arc less stable and more prone to disturbances; tiny moves or irregularities can cause fluctuations, and the electrode tip can arc to the nozzle or weld pool, leading to arc instability or tip arcing. This is the trade-off: more heat and penetration, with a higher risk of unstable arc and related issues.

9. In aluminum GMAW, which transfer modes are commonly used, and what determines the mode?

A. Spray transfer only; gas composition does not matter.

B. Short-circuit transfer only; mode is fixed for all thickness.

C. Spray or short-circuit transfer; thickness determines the mode.

D. Pulsed transfer only; wire diameter determines mode.

In aluminum GMAW, the metal transfer mode describes how the filler wire feeds into the weld pool. The two commonly used modes are spray transfer and short-circuit transfer. Spray transfer pushes a continuous stream of fine molten droplets across the arc, giving high heat input, smooth deposition, and good penetration, and it works well with higher current and argon-rich shielding. Short-circuit transfer involves the droplet touching and fusing to the workpiece at the puddle edge, which provides excellent control, lower heat input, and is especially favorable for thin sections and complex joints. The key factor determining which mode you use is the thickness of the aluminum being welded: thinner parts are better with short-circuit transfer to avoid burning through, while thicker parts can take advantage of spray transfer for faster deposition and deeper penetration. Gas and wire size influence stability and droplet behavior but do not override the effect of thickness on mode selection.

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10. What is interpass temperature and why is it important in multi-pass welds?

A. Interpass temperature is the maximum allowed temperature between passes; controlling it prevents hydrogen cracking and distortion and ensures good bonding between passes.

B. Interpass temperature is the temperature of the shielding gas.

C. Interpass temperature is not a concern in GMAW.

D. Interpass temperature is the temperature of the filler metal before welding.

Interpass temperature is the temperature of the weld area between successive passes, kept within a specified range (often with a maximum limit). Controlling this temperature in multi pass welds is important because it affects hydrogen diffusion and residual stresses, reducing the risk of hydrogen cracking and distortion, and ensuring proper bonding between passes. It's not about the shielding gas temperature or the filler metal temperature, and it is indeed a concern in GMAW when welding in multiple passes.

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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://gmawweldinglvl2.examzify.com

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

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