

ALBERTA WELDING AIT FIRST YEAR PRACTICE EXAM (SAMPLE)

STUDY GUIDE



**SAMPLE STUDY GUIDE
WITH LIMITED QUESTIONS**

**VISIT US ONLINE FOR
THE FULL VERSION STUDY GUIDE**

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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 is the outcome of improper parameters during the welding process?

- A. Enhanced weld durability
- B. Greater energy efficiency
- C. Increased risk of weld defects
- D. Improved workability of the metal

2. What is the primary concern when lifting a load with a sling?

- A. Color of the sling
- B. Type of lifting equipment
- C. Weight distribution of the load
- D. Angle of the sling

3. What is the purpose of conducting a welding procedure specification (WPS)?

- A. To outline the specific parameters and processes to be used for a particular welding operation
- B. To catalog all welding equipment used in a project
- C. To evaluate the performance of welders
- D. To set the cost estimates for welding jobs

4. What is the critical pressure of C₂H₂?

- A. 10 psi
- B. 20 psi
- C. 28 psi
- D. 35 psi

5. Which of the following is a common effect of welding on base metals?

- A. Increased brittleness
- B. Decreased thermal expansion
- C. Enhanced ductility
- D. Improved electrical conductivity

- 6. What happens to the available output amperage when a change is made to the slope adjustment?**
- A. The available output amperage remains the same
 - B. The available output amperage decreases
 - C. The available output amperage increases
 - D. The available output amperage changes
- 7. How much electrode stickout is recommended when using gas shielded FCAW with 1.2 mm (0.045") wire?**
- A. 5 mm to 10 mm (1/4" to 3/8")
 - B. 10 mm to 19 mm (3/8" to 3/4")
 - C. 20 mm to 30 mm (3/4" to 1 1/4")
 - D. 1 mm to 5 mm (1/16" to 1/4")
- 8. Which of the following is a safety measure in welding?**
- A. Wearing loose clothing
 - B. Working without ventilation
 - C. Using personal protective equipment
 - D. Welding in poorly lit areas
- 9. What aspect primarily determines the strength of a fillet weld?**
- A. Length of the weld
 - B. Weight of the material
 - C. Effective throat dimension
 - D. Type of welding filler used
- 10. What is the function of a shielding gas in welding?**
- A. To create a stable arc
 - B. To cool the weld quickly
 - C. To protect the weld pool from contamination
 - D. To enhance the welding speed

Answers

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

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Explanations

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1. What is the outcome of improper parameters during the welding process?

- A. Enhanced weld durability
- B. Greater energy efficiency
- C. Increased risk of weld defects**
- D. Improved workability of the metal

Improper parameters during the welding process can lead to an increased risk of weld defects. Factors such as incorrect voltage, amperage, travel speed, and shielding gas can adversely affect the quality of the weld. These incorrect settings can cause issues like incomplete fusion, porosity, cracking, or a lack of penetration, ultimately compromising the strength and integrity of the welded joint. When welding parameters are not properly controlled, the physical and chemical characteristics of the weld can be severely impacted, which makes it vulnerable to failure under load or during service. Understanding the importance of correct parameters is crucial for ensuring high-quality welds and preventing defects that could lead to costly repairs or safety hazards in welded structures. The other choices represent outcomes that would ideally result from proper parameters, not improper ones, highlighting the critical relationship between technique and weld quality.

2. What is the primary concern when lifting a load with a sling?

- A. Color of the sling
- B. Type of lifting equipment
- C. Weight distribution of the load
- D. Angle of the sling**

The primary concern when lifting a load with a sling is the angle of the sling. The angle at which the sling is positioned affects how the load is distributed and the overall stability of the lift. An incorrect angle can lead to increased tension on the sling, potentially resulting in slippage, dropping the load, or even failure of the sling itself. When slings are used at too steep of an angle, they can create excessive strain on the sling, whereas wider angles can help distribute the weight more evenly and reduce stress. Therefore, maintaining the correct angle ensures safety and effectiveness during the lifting process. Understanding the importance of sling angles is crucial to prevent accidents and ensure that the load is lifted in a controlled manner. While other factors, such as the weight distribution of the load and the type of lifting equipment, are important, they do not have the same immediate impact on the risk of failure during the actual lift as the angle of the sling does. Additionally, the color of the sling, while it may indicate certain aspects such as usage or inspection, is not a primary concern compared to the functional characteristics of the lift itself.

3. What is the purpose of conducting a welding procedure specification (WPS)?

- A. To outline the specific parameters and processes to be used for a particular welding operation
- B. To catalog all welding equipment used in a project
- C. To evaluate the performance of welders
- D. To set the cost estimates for welding jobs

The purpose of conducting a welding procedure specification (WPS) is to outline the specific parameters and processes to be used for a particular welding operation. A WPS serves as a guiding document detailing critical aspects such as the type of welding process, base materials, filler materials, joint design, and the necessary welding techniques. This specification ensures consistency and quality in the welding work performed, allowing welders to work to the same standards and promoting safety and efficiency. A WPS is vital for compliance with industry standards and codes, as it provides the framework within which a welder can operate to produce sound and reliable welds. This level of detail helps ensure that the welding meets the necessary mechanical and structural requirements for the intended application. The other options do not accurately represent the primary function of a WPS. While listing equipment, evaluating welder performance, and estimating costs are important aspects of a welding project, they fall outside the scope of the WPS's purpose, which is focused explicitly on the welding processes and parameters themselves.

4. What is the critical pressure of C₂H₂?

- A. 10 psi
- B. 20 psi
- C. 28 psi
- D. 35 psi

The critical pressure of a substance is the pressure above which a substance cannot exist in the liquid state, regardless of temperature. For acetylene (C₂H₂), the critical pressure is approximately 29.8 psi, often rounded to 28 psi. It is essential for users working with acetylene to understand this property, especially in welding applications, as it defines the limits within which acetylene can be effectively stored and utilized. When operating at pressures lower than the critical pressure, acetylene can exist as a liquid. Understanding the critical pressure is important for safety, storage, and efficient utilization of welding gases. Other values presented, such as 10 psi, 20 psi, and 35 psi, do not represent the critical pressure for acetylene and would not provide the necessary operational criteria for safe practices in welding environments.

5. Which of the following is a common effect of welding on base metals?

- A. Increased brittleness**
- B. Decreased thermal expansion
- C. Enhanced ductility
- D. Improved electrical conductivity

In welding, one common effect on base metals is increased brittleness. This phenomenon often occurs due to the rapid cooling and heating processes involved in welding, which can lead to the formation of hard and brittle microstructures, especially in certain types of steel and alloys. The heat affected zone (HAZ) adjacent to the weld can undergo changes that result in a reduction of toughness, making the metal more susceptible to cracking under stress or impact. Understanding the thermal cycles that occur during welding is essential; these can lead to phase transformations in the metal's structure. If the cooling rate is too fast or the chemical composition of the base metal is not balanced for welding, the resulting microstructure might not provide the ductile qualities that are usually required for structural integrity. This increased brittleness can pose significant risks, particularly in applications where the base metal is expected to endure dynamic loads or harsh environments. The other options represent effects that are generally not observed in welding. For example, decreased thermal expansion and enhanced ductility are not typical outcomes of welding, as the processes usually compromise the thermal and structural properties of the material. Improved electrical conductivity is also unlikely, as welded areas often develop non-conductive oxides or inclusions that can interrupt electrical paths in a material

6. What happens to the available output amperage when a change is made to the slope adjustment?

- A. The available output amperage remains the same
- B. The available output amperage decreases
- C. The available output amperage increases
- D. The available output amperage changes**

When the slope adjustment is modified, it directly influences how the current output behaves over time during the welding process. The slope adjustment essentially controls the rate of increase or decrease of the amperage, affecting how quickly the input power ramps up to its maximum or ramps down. Therefore, when you make a change to the slope adjustment, it alters the manner in which the available output amperage functions, indicating that it does indeed change. This could mean an increase or decrease in output amperage at specific times during the weld, depending on whether the slope is set to rise or fall faster or slower. Understanding this interaction is crucial for a welder to achieve the desired penetration and heat input for different welding applications. The other options do not accurately capture this dynamic: stating that the available output amperage remains the same, decreases, or increases overlooks the fact that the adjustment of slope specifically changes how amperage is delivered. Thus, the correct response highlights that any change in slope directly modifies the available output amperage.

7. How much electrode stickout is recommended when using gas shielded FCAW with 1.2 mm (0.045") wire?

- A. 5 mm to 10 mm (1/4" to 3/8")
- B. 10 mm to 19 mm (3/8" to 3/4")**
- C. 20 mm to 30 mm (3/4" to 1 1/4")
- D. 1 mm to 5 mm (1/16" to 1/4")

The recommended electrode stickout for gas shielded flux-cored arc welding (FCAW) with 1.2 mm (0.045") wire typically falls within the range of 10 mm to 19 mm (3/8" to 3/4"). This range is ideal for maintaining a stable arc and good penetration while avoiding excessive spatter or insufficient fusion in the weld. Proper stickout helps ensure that the welding arc has sufficient length to effectively melt the electrode and the base material. An optimal stickout allows the shielding gas to effectively protect the weld pool from contamination, which is crucial for producing high-quality welds. Additionally, having the right amount of stickout can influence the heat input and arc stability, therefore impacting the overall soundness of the weld joint. Other ranges of stickout like those listed, either too short or too long, may lead to issues such as decreased control over the welding process, poor penetration, and increased spatter, which can result in a less effective weld. Understanding how stickout relates to the specific wire diameter and welding conditions is key to achieving the desired welding outcomes in FCAW.

8. Which of the following is a safety measure in welding?

- A. Wearing loose clothing
- B. Working without ventilation
- C. Using personal protective equipment**
- D. Welding in poorly lit areas

Using personal protective equipment (PPE) is a fundamental safety measure in welding. PPE includes items such as welding helmets with appropriate filters to protect the eyes and face from intense light and sparks, gloves to protect the hands from heat and burns, and protective clothing made from flame-resistant materials to shield the body from sparks and molten metal. Additionally, steel-toed boots and respirators may be part of the PPE, depending on the specific welding task and environment. The importance of PPE cannot be overstated, as it significantly reduces the risk of injuries and health issues associated with welding. Proper equipment not only protects against physical injuries but also helps prevent long-term health complications that can arise from exposure to hazardous fumes and UV radiation generated during the welding process. In contrast, wearing loose clothing poses a risk, as it can easily catch fire. Working without ventilation can lead to inhalation of harmful fumes, and welding in poorly lit areas increases the likelihood of accidents and mistakes, making it essential to ensure proper lighting and air flow in the work environment. Therefore, using personal protective equipment is a critical practice that enhances safety in welding operations.

9. What aspect primarily determines the strength of a fillet weld?

- A. Length of the weld
- B. Weight of the material
- C. Effective throat dimension**
- D. Type of welding filler used

The strength of a fillet weld is primarily determined by the effective throat dimension. This measurement refers to the shortest distance from the root of the weld to the face of the weld, which directly influences the load-carrying capacity of the weld. A larger effective throat dimension means that more material is present to absorb and distribute stress, thereby enhancing the weld's overall strength. While the length of the weld can impact the total amount of material in the weld, it does not directly correlate to the strength in the same way that the effective throat dimension does. The weight of the material involved in the welding process can also have relevance in certain contexts, but it is not a direct factor in determining weld strength. Similarly, while the type of welding filler used can influence the weld's overall characteristics and performance in specific applications, the effective throat dimension remains the key factor in the fundamental strength of a fillet weld.

10. What is the function of a shielding gas in welding?

- A. To create a stable arc
- B. To cool the weld quickly
- C. To protect the weld pool from contamination**
- D. To enhance the welding speed

The function of a shielding gas in welding is primarily to protect the weld pool from contamination. When welding, the molten metal is exposed to the surrounding atmosphere, which may contain oxygen, nitrogen, moisture, and other contaminants that can negatively affect the quality and integrity of the weld. Shielding gases, such as argon, carbon dioxide, or a mixture of gases, create an inert or semi-inert environment around the weld pool. This protective atmosphere prevents oxidation and the formation of imperfections, allowing for a stronger, cleaner weld. While creating a stable arc and potentially contributing to welding speed can occur as secondary effects of using shielding gases, these are not their primary functions. Cooling the weld quickly is also not a role of the shielding gas; that is typically managed by other factors such as cooling methods or techniques used in the welding process. The critical role of shielding gas in maintaining the purity of the weld pool makes it an essential aspect of welding quality and performance.

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:

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

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