

AWS WELDING INSPECTION AND TESTING CERTIFICATION PRACTICE TEST (SAMPLE)

STUDY GUIDE



Prepare with structure. Pass with confidence



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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 one common cause of arc blow in welding?**
 - A. Excessive heat input
 - B. An unbalanced magnetic field
 - C. Incorrect electrode angle
 - D. Use of wrong filler material
- 2. What is the approximate psi of a fully charged oxygen cylinder at 70 degrees?**
 - A. 150 psi
 - B. 225 psi
 - C. 300 psi
 - D. 350 psi
- 3. What leads to tungsten inclusions when using the GTAW process?**
 - A. Inadequate shielding gas
 - B. High travel speed
 - C. Improper grinding of the electrode
 - D. Poor workpiece clamping
- 4. Which method is the only acceptable way to light oxy-fuel torches?**
 - A. Match
 - B. Flint striker
 - C. Electric lighter
 - D. Striker
- 5. What is a root opening in welding?**
 - A. The joint spacing required for TIG welding
 - B. The gap between the pieces being welded at the joint's root
 - C. The area where a weld bead starts
 - D. A safety feature in welding setups

- 6. Which discontinuity is most likely to be caused during the manufacturing of steel plate?**
- A. Porosity
 - B. Lamination
 - C. Undercut
 - D. Underfill
- 7. What can cause undercut in a weld?**
- A. Slow travel speed
 - B. High travel speed
 - C. Improper filler materials
 - D. Too much heat input
- 8. Which welding process is known for producing high-quality welds but at slower speeds?**
- A. MIG Welding
 - B. Stick Welding
 - C. Gas Tungsten Arc Welding (GTAW)
 - D. Flux-Cored Arc Welding
- 9. Which type of weld metal discontinuity is generally regarded as the most severe?**
- A. Porosity
 - B. Overlap
 - C. Slag inclusion
 - D. Crack
- 10. In which welding process is a filler material melted into the joint to connect two pieces of metal?**
- A. Shot welding
 - B. Fillet welding
 - C. Fusion welding
 - D. Arc welding

Answers

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

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Explanations

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1. What is one common cause of arc blow in welding?

- A. Excessive heat input
- B. An unbalanced magnetic field**
- C. Incorrect electrode angle
- D. Use of wrong filler material

Arc blow is a phenomenon that occurs during welding, where the electric arc is deflected from its intended path, typically caused by external magnetic fields or imbalances within the magnetic field created by the welding machine. This deflection can lead to inconsistencies in the weld, such as incomplete fusion or poor penetration. An unbalanced magnetic field is a common cause of arc blow as it alters the arc's stability and can result in difficulties maintaining a consistent arc length. This imbalance can occur when working near magnetic materials or if there are other tools, machinery, or electrical currents nearby that create a magnetic field. The magnetic field interacts with the current flowing through the electrode, pulling the arc in a specific direction away from the intended weld joint. Factors like excessive heat input, incorrect electrode angle, or the use of the wrong filler material do not directly cause arc blow. While they can lead to various welding defects or issues, they do not manifest as the specific deflection of the arc that characterizes arc blow. Understanding the influence of magnetic fields on the welding process is crucial for welders to maintain control and ensure quality outcomes in their welds.

2. What is the approximate psi of a fully charged oxygen cylinder at 70 degrees?

- A. 150 psi**
- B. 225 psi
- C. 300 psi
- D. 350 psi

The appropriate psi for a fully charged oxygen cylinder at approximately 70 degrees Fahrenheit is around 2200 psi, not 150 psi. This is a standard measurement for high-pressure cylinders used in welding and cutting applications. Oxygen cylinders are typically filled to a pressure of about 2200 psi at a temperature of 70 degrees. The given option of 150 psi may represent a significant drop in pressure, possibly indicating an empty or nearly empty cylinder rather than a fully charged one. Full cylinders should maintain this high pressure under normal temperatures, and any substantial deviation from this would indicate an issue with the cylinder itself. It's essential to understand that maintaining the integrity of the pressure in oxygen cylinders is crucial for safety in welding operations, as low-pressure readings can lead to dangerous situations where adequate oxygen supply for combustion is compromised.

3. What leads to tungsten inclusions when using the GTAW process?

- A. Inadequate shielding gas
- B. High travel speed
- C. Improper grinding of the electrode**
- D. Poor workpiece clamping

Tungsten inclusions occur in the GTAW (Gas Tungsten Arc Welding) process primarily due to improper grinding of the tungsten electrode. The tungsten electrode needs to be ground to a specific point to ensure that it produces a stable arc. If the electrode is not ground correctly, it can lead to irregular arc stability and cause the tungsten to be transferred into the weld pool, which results in tungsten inclusions within the weld. When the electrode is adequately pointed and has the proper surface finish, it minimizes contamination and enhances the overall quality of the arc. However, if the grinding is uneven or the tip is not shaped correctly, it can create conditions that lead to the excessive erosion of tungsten. This can cause bits of the electrode to be swept into the molten weld puddle, leading to defects in the weld. The other factors, while they can influence the quality of the weld, do not directly cause tungsten inclusions in the same way that improper grinding does. Inadequate shielding gas may lead to porosity or other contamination but does not introduce tungsten. High travel speeds might lead to undercut or incomplete fusion but do not specifically lead to tungsten being included in the weld. Similarly, poor workpiece clamping can result in issues with alignment or stability

4. Which method is the only acceptable way to light oxy-fuel torches?

- A. Match
- B. Flint striker
- C. Electric lighter
- D. Striker**

The only acceptable way to light oxy-fuel torches is by using a striker. This method is preferred because it provides a safer and more controlled flame ignition compared to other methods. Strikers are designed to produce a spark without introducing a flame directly to the gas, which minimizes the risk of flashbacks or uncontrolled ignition that could occur with matches or other open-flame methods. Using a striker helps reduce the chance of igniting flammable materials in the vicinity and can be used effectively in settings where a clean and precise ignition source is necessary. Furthermore, a striker is less likely to cause accidental ignitions, making it the most reliable choice for welding and cutting applications where safety is of paramount importance. In contrast, matches and electric lighters have inherent risks; matches can ignite unintentionally and electric lighters may not provide a consistent spark in all conditions. While a flint striker is similar to the option of a striker, it may not encompass the broader category that the term "striker" refers to, which includes various design types specifically made for oxy-fuel applications.

5. What is a root opening in welding?

- A. The joint spacing required for TIG welding
- B. The gap between the pieces being welded at the joint's root**
- C. The area where a weld bead starts
- D. A safety feature in welding setups

A root opening refers specifically to the gap between the two pieces of metal at the root of a weld joint. This gap is critical because it allows for proper penetration of the weld metal into both pieces. Adequate root opening is essential for achieving a strong bond and reducing the risk of defects such as lack of fusion or incomplete penetration. In welding processes, particularly those that involve groove joints, the size of the root opening can significantly affect the quality of the weld. For instance, if the opening is too small, it may hinder the welder's ability to achieve full penetration, while an excessive gap can lead to poor strength and increased chances of defects. Understanding the root opening is vital for welders and welding inspectors to ensure the necessary parameters are met for effective welding practices. Therefore, the definition aligning with the concept of root opening emphasizes its role in the welding process and its affect on the connection made between the base materials.

6. Which discontinuity is most likely to be caused during the manufacturing of steel plate?

- A. Porosity
- B. Lamination**
- C. Undercut
- D. Underfill

Lamination is a discontinuity that is most commonly associated with the manufacturing process of steel plates, particularly during the rolling or refining stages. It occurs when the layers or sheets of steel do not bond properly, leading to internal seams or cracks within the material. This can be a result of various factors, such as inadequate heating, insufficient rolling, or impurities in the steel during production. The presence of lamination can significantly affect the mechanical properties of steel and its suitability for certain applications, making it an important consideration in the quality control of steel manufacturing. The likelihood of lamination increases in thicker plates or during processes such as hot rolling, where the material is subjected to high pressure and temperature. In contrast, porosity typically arises from gas entrapment during welding or casting processes, while undercut and underfill are more related to welding defects. Undercut occurs when the weld metal does not completely fill the joint, and underfill involves insufficient weld material in the groove of the welded joint. These are less likely to occur during the manufacturing of steel plates compared to lamination, making it the most relevant choice in this context.

7. What can cause undercut in a weld?

- A. Slow travel speed
- B. High travel speed**
- C. Improper filler materials
- D. Too much heat input

Undercut in a weld typically refers to a groove or channel that forms at the edge of the weld bead and can compromise the integrity of the weld joint. This defect is often caused by a number of factors related to the welding technique used. A high travel speed can lead to undercut because it does not allow sufficient heat input into the base metal. When the welder moves too quickly, the heat does not have enough time to penetrate adequately, resulting in inadequate melting of the parent material at the edge of the weld. This insufficient melting leads to a lack of fusion at the edges, creating a concave groove or undercut. In contrast, other factors such as slow travel speed or improper filler materials tend to create different types of weld defects, such as excessive heat input or poor bead shape, rather than specifically leading to undercut. High heat input can also create problems but in ways that might not directly create undercut but instead might lead to other defects like burn-through or distortion. By understanding these causes, welders can adjust their techniques to avoid undercut and ensure stronger, more reliable welds.

8. Which welding process is known for producing high-quality welds but at slower speeds?

- A. MIG Welding
- B. Stick Welding
- C. Gas Tungsten Arc Welding (GTAW)**
- D. Flux-Cored Arc Welding

Gas Tungsten Arc Welding (GTAW), commonly known as TIG welding, is recognized for its ability to produce high-quality welds with exceptional precision and control. This process uses a non-consumable tungsten electrode to generate the weld and often involves the addition of filler material. One of the key attributes of GTAW is its ability to create clean, strong, and aesthetically pleasing welds on a variety of metals, including stainless steel and aluminum. The slower speeds associated with GTAW are primarily due to the meticulous nature of the process. The welder must maintain a steady hand and careful control of the heat input, ensuring that the weld pool remains stable. This level of attention and craftsmanship contributes to the quality of the final weld but also results in longer weld times compared to other welding processes. While other methods like MIG and Flux-Cored Arc Welding may provide faster deposition rates, they often sacrifice some of the finesse and quality of the weld joint, which makes GTAW the preferred choice when high-quality results are the priority. Thus, GTAW is often employed in applications where weld integrity and appearance are critical, such as in the aerospace and automotive industries, despite the slower operational speeds.

9. Which type of weld metal discontinuity is generally regarded as the most severe?

- A. Porosity
- B. Overlap
- C. Slag inclusion
- D. Crack**

The most severe type of weld metal discontinuity is a crack. Cracks represent a complete failure of the integrity of the weld. They can significantly compromise the mechanical properties and overall strength of the welded joint, leading to catastrophic failure under load or stress. Cracks can propagate and worsen over time due to various factors including thermal stresses, structural loads, and environmental conditions. In contrast, while other types of discontinuities such as porosity, overlap, and slag inclusion can certainly affect the performance of a weld, they typically do not pose the same immediate threat to the structural integrity. For example, porosity may lead to reduced strength but does not as directly jeopardize the weld's load-carrying ability as cracks do. Overlap can indicate issues in the welding process but may not lead to immediate failure. Slag inclusions, although undesirable, usually have a lesser impact on the weld's overall structural performance compared to the presence of a crack. Therefore, due to the potential for catastrophic failure and the significant decrease in strength they cause, cracks are classified as the most severe type of weld metal discontinuity.

10. In which welding process is a filler material melted into the joint to connect two pieces of metal?

- A. Shot welding
- B. Fillet welding
- C. Fusion welding**
- D. Arc welding

The process of fusion welding involves melting the base material and, in some cases, adding a filler material to create a strong bond between two pieces of metal. During fusion welding, both the edges of the metal workpieces and the filler material are brought to a molten state, allowing them to fuse together upon cooling. This method is widely used because it creates a strong, homogenous weld. In the context of the other options, while arc welding is a common technique that can utilize fusion welding principles by generating an arc to melt the filler and base materials, it doesn't specifically define the concept of melting the filler as a primary mechanism. Fillet welding describes a specific joint configuration, typically involving a weld that connects two pieces at right angles, and does not inherently address the melting of filler material. Shot welding is a distinct process that does not involve melting but rather uses mechanical means to join materials.

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://aws-weldinginspectionandtestingcertification.examzify.com>

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

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