CANADIAN WELDING BUREAU (CWB) LEVEL II PRACTICE EXAM (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

VISIT US ONLINE FOR THE FULL VERSION STUDY GUIDE

https://cwblevel2.examzify.com

Copyright © 2026 by Examzify - A Kaluba Technologies Inc. product.

ALL RIGHTS RESERVED.

No part of this book may be reproduced or transferred in any form or by any means, graphic, electronic, or mechanical, including photocopying, recording, web distribution, taping, or by any information storage retrieval system, without the written permission of the author.

Notice: Examzify makes every reasonable effort to obtain accurate, complete, and timely information about this product from reliable sources.

SAMPLE

Table of Contents

Copyright 1

Table of Contents 2

Introduction 3

How to Use This Guide 4

Questions 5

Answers 8

Explanations 10

Next Steps 16

SAMPLE

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.

SAMPLE

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!

SAMPLE

Questions

SAMPLE

1. A "controlled thermal severity" test (CTS) uses which type of weld?

A. Fillet

B. Groove

C. Spot

D. Edge

2. What is the most likely cause of centerline solidification cracking during welding?

A. Too high welding speed

B. Too slow welding speed

C. Low heat input

D. High temperatures

3. In hardness testing, a lighter load can result from which condition?

A. Reduced specimen size

B. Friction in the loading system

C. Incorrect calibration

D. Low material density

4. What is the main alloying element in the AISI 200 series?

A. Chromium

B. Chromium and nickel

C. Manganese

D. Carbon

5. What crystalline structure does regular low-carbon steel have at room temperature?

A. FCC

B. BCC

C. HCP

D. Amorphous

SAMPLE

6. What does the letter "R" represent in Ohm's Law (I = V/R)?

A. Resistance

B. Voltage

C. Current

D. Power

7. The term "convexity" normally refers to the profile of a _____.

A. Fillet weld

B. Groove weld

C. Butt weld

D. Spot weld

8. Which structure is more densely packed: FCC or BCC?

A. BCC

B. FCC

C. Neither

D. Both are equal

9. What is the typical three-phase input voltage in most Canadian welding shops?

A. 120V

B. 240V

C. 480V

D. 600V

10. Brittle materials in a toughness test will _____.

A. absorb minimal energy

B. absorb significant energy

C. not absorb any energy

D. absorb energy proportionate to toughness

SAMPLE

Answers

SAMPLE

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

SAMPLE

Explanations

SAMPLE

1. A "controlled thermal severity" test (CTS) uses which type of weld?

A. Fillet

B. Groove

C. Spot

D. Edge

A "controlled thermal severity" test (CTS) utilizes a groove weld. This type of weld is specifically designed to assess the effects of various thermal cycles on the weld metal and the heat-affected zone (HAZ). Groove welds provide a substantial cross-section for testing, allowing for more controlled and measurable results. In a CTS test, the precise thermal conditions experienced during welding can be monitored, making it possible to examine the performance and qualities of the welds under simulated service conditions. The groove design helps in generating a relevant thermal profile that is crucial for the material properties being evaluated. Fillet welds, while commonly used in various applications, do not create the same thermal distribution or stress profiles needed for a CTS. Spot welds are typically limited to joining two overlapping sheets and do not subject the material to extensive thermal testing like groove welds do. Edge welds, likewise, are less commonly used for this specific type of thermal severity assessment. Consequently, groove welds are the preferred choice for conducting controlled thermal severity tests, allowing for an in-depth understanding of the tempering effects of thermal cycles on the material properties.

2. What is the most likely cause of centerline solidification cracking during welding?

A. Too high welding speed

B. Too slow welding speed

C. Low heat input

D. High temperatures

Centerline solidification cracking is a common issue encountered during welding processes, particularly in certain alloy types. The most likely cause of this type of cracking is related to the speed and thermal conditions of the welding operation. When welding at too high a speed, the heat input is insufficient to create the necessary temperature gradient conducive for proper solidification. This rapid cooling can prevent the liquid metal from having enough time to properly settle and fill the joint, leading to internal stresses as the metal solidifies. Consequently, this condition increases the likelihood of forming cracks along the centerline as the weld pool solidifies too quickly without adequate distribution and fusion of the molten material. In contrast, slower welding speeds typically allow for greater heat input, which facilitates more uniform solidification and reduces the likelihood of stress concentrations that can lead to cracking. While low heat input and high temperatures can also impact weld quality, they do not directly correlate with centerline solidification cracking in the same way that excessive welding speed does. Therefore, the most significant factor contributing to centerline solidification cracking is indeed welding at too high a speed.

SAMPLE

3. In hardness testing, a lighter load can result from which condition?

A. Reduced specimen size

B. Friction in the loading system

C. Incorrect calibration

D. Low material density

In hardness testing, a lighter load can occur due to friction in the loading system. When friction is present in the apparatus used for hardness testing, it can impede the application of force on the specimen. This results in a situation where the intended load does not fully reach the material being tested. Instead, some portion of the applied force is absorbed by overcoming friction within the testing equipment, thereby reducing the overall effective load that the specimen actually experiences. This phenomenon can lead to lower hardness measurements, as the test may not accurately reflect the material's true hardness properties due to the compromised loading condition. Understanding this principle is essential for ensuring accurate hardness testing results and maintaining the integrity of the testing process.

4. What is the main alloying element in the AISI 200 series?

A. Chromium

B. Chromium and nickel

C. Manganese

D. Carbon

In the AISI 200 series stainless steels, manganese is the primary alloying element. The AISI 200 series is known for its high manganese content, which plays a significant role in enhancing certain properties of the steel, such as strength and toughness. While chromium is also present in these alloys, it is not the main alloying element—rather, it is the base element that provides corrosion resistance. Nickel is typically found in higher concentrations in the AISI 300 series but is present in the 200 series as well, primarily to achieve specific properties. Carbon, although an essential alloying element in many steel grades, contributes less to the overall classification of the AISI 200 series compared to manganese. Thus, the focus on manganese as the main alloying element is accurate for this series, reflecting its unique composition and properties.

5. What crystalline structure does regular low-carbon steel have at room temperature?

A. FCC

B. BCC

C. HCP

D. Amorphous

At room temperature, regular low-carbon steel primarily exhibits a body-centered cubic (BCC) crystalline structure. This structure is characteristic of the ferrite phase in steel, which is stable at lower temperatures. The BCC configuration allows for the efficient packing of atoms, making it strong and providing good ductility and toughness. In low-carbon steel, the presence of carbon in small quantities contributes to its overall mechanical properties but does not affect the basic crystallographic structure significantly at room temperature. As temperature increases, steel may transition to face-centered cubic (FCC) at higher temperatures, particularly in the austenitic phase, but at typical room temperatures, low-carbon steel retains its BCC structure. This distinction is crucial for understanding how low-carbon steel will behave under various conditions, including how it responds to heat treatment, processing, and mechanical loading. The properties associated with the BCC structure, such as yield strength and ductility, play a significant role in the material's application in construction and manufacturing.

EXAMPLE

6. What does the letter "R" represent in Ohm's Law (I = V/R)?

A. Resistance

B. Voltage

C. Current

D. Power

In Ohm's Law, the equation I = V/R defines the relationship between current (I), voltage (V), and resistance (R) in an electrical circuit. In this formula, "R" specifically represents resistance, which is measured in ohms (Ω). Resistance is a fundamental concept in electrical engineering as it quantifies how much a material opposes the flow of electric current. Essentially, it determines how easily electrons can move through a component or a circuit. A higher resistance indicates more opposition to the flow of current, while a lower resistance allows current to flow more freely. Understanding the role of resistance in this equation is crucial, as it enables one to calculate the current flow when voltage is known, or to manipulate voltage and current values based on resistance characteristics of the circuit elements involved. This foundational knowledge of Ohm's Law is essential for effective electrical design and analysis.

7. The term "convexity" normally refers to the profile of a _____.

A. Fillet weld

B. Groove weld

C. Butt weld

D. Spot weld

Convexity refers to the curvature of a weld profile that bulges outward from the base material. In the context of welding, this term is most commonly associated with fillet welds. Fillet welds are often used in joint configurations where two pieces of metal meet at an angle, and their profile can vary depending on the welding technique and parameters used. When assessing the quality of a fillet weld, its convexity is an important aspect because it affects the weld's strength and structural integrity. A properly executed fillet weld will usually exhibit a certain degree of convexity, indicating adequate volume and fusion with the base metals. An excessive convexity, however, could lead to stress concentrations and potential failure points. In contrast, groove welds, butt welds, and spot welds have different profile characteristics and nomenclatures that do not typically use the term "convexity" in the same way. Groove welds involve a specific preparation and tend to have a configuration that is more flat or concave based on the joint design. Butt welds are characterized by the joining of two flat surfaces, making the concept of convexity less applicable. Spot welds are localized welds where the material is joined at a single point, which

SAMPLE

8. Which structure is more densely packed: FCC or BCC?

A. BCC

B. FCC

C. Neither

D. Both are equal

The face-centered cubic (FCC) structure is indeed more densely packed than the body-centered cubic (BCC) structure. In FCC, the atoms are positioned at each of the corners and the centers of all the faces of the cube. This arrangement allows for a higher coordination number of 12, meaning each atom is in contact with 12 neighboring atoms. The packing efficiency of FCC is about 74%, which is a measure of how closely packed the atoms are within the structure. This high percentage indicates that a significant amount of the volume of the structure is occupied by atoms, contributing to its density. In contrast, the BCC structure has a coordination number of 8, with atoms located at the corners of the cube and a single atom in the center. The packing efficiency of BCC is lower, at around 68%, which indicates that it has more empty space compared to FCC. These structural characteristics highlight why FCC is more densely packed. The arrangement of atoms in FCC maximizes the space utilization within the crystalline lattice, resulting in a higher density compared to BCC.

9. What is the typical three-phase input voltage in most Canadian welding shops?

A. 120V

B. 240V

C. 480V

D. 600V

In most Canadian welding shops, the typical three-phase input voltage is 600 volts. This standard voltage is commonly used because it efficiently supports the high power requirements of industrial welding equipment. The utilization of 600V in three-phase systems provides sufficient voltage for the extensive current draw that welding machines often require, allowing them to operate more effectively while maintaining the quality and consistency of welds. Three-phase systems are advantageous in industrial settings for various reasons, including improved efficiency and reduced power loss. A higher voltage can also facilitate smaller conductor sizes and reduced installation costs, which is particularly relevant in larger operations where numerous welding units may be running concurrently. Regarding the other voltage levels, while 120V and 240V are more commonly seen in residential applications and smaller equipment, they do not deliver the necessary power for heavy industrial welding applications. Similarly, while 480V is used in some industrial facilities, 600V is specifically preferred in many Canadian welding shops due to regulatory standards and equipment compatibility. Hence, 600V is well established as the typical choice in this context.

SAMPLE

10. Brittle materials in a toughness test will _____.

A. absorb minimal energy

B. absorb significant energy

C. not absorb any energy

D. absorb energy proportionate to toughness

Brittle materials in a toughness test are characterized by their inability to deform significantly under stress before failure. Toughness is a measure of how much energy a material can absorb before fracturing; thus, brittle materials typically absorb minimal energy compared to ductile materials. When subjected to stress, brittle materials can fracture suddenly without experiencing much plastic deformation, leading to lower toughness values. In contrast, ductile materials can undergo significant deformation and absorb much more energy before failure, exhibiting high toughness. This distinction makes it clear that the behavior of brittle materials under impact or load conditions is such that they resist energy absorption, highlighting their fragility in structural applications.

SAMPLE

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://cwblevel2.examzify.com

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

SAMPLE