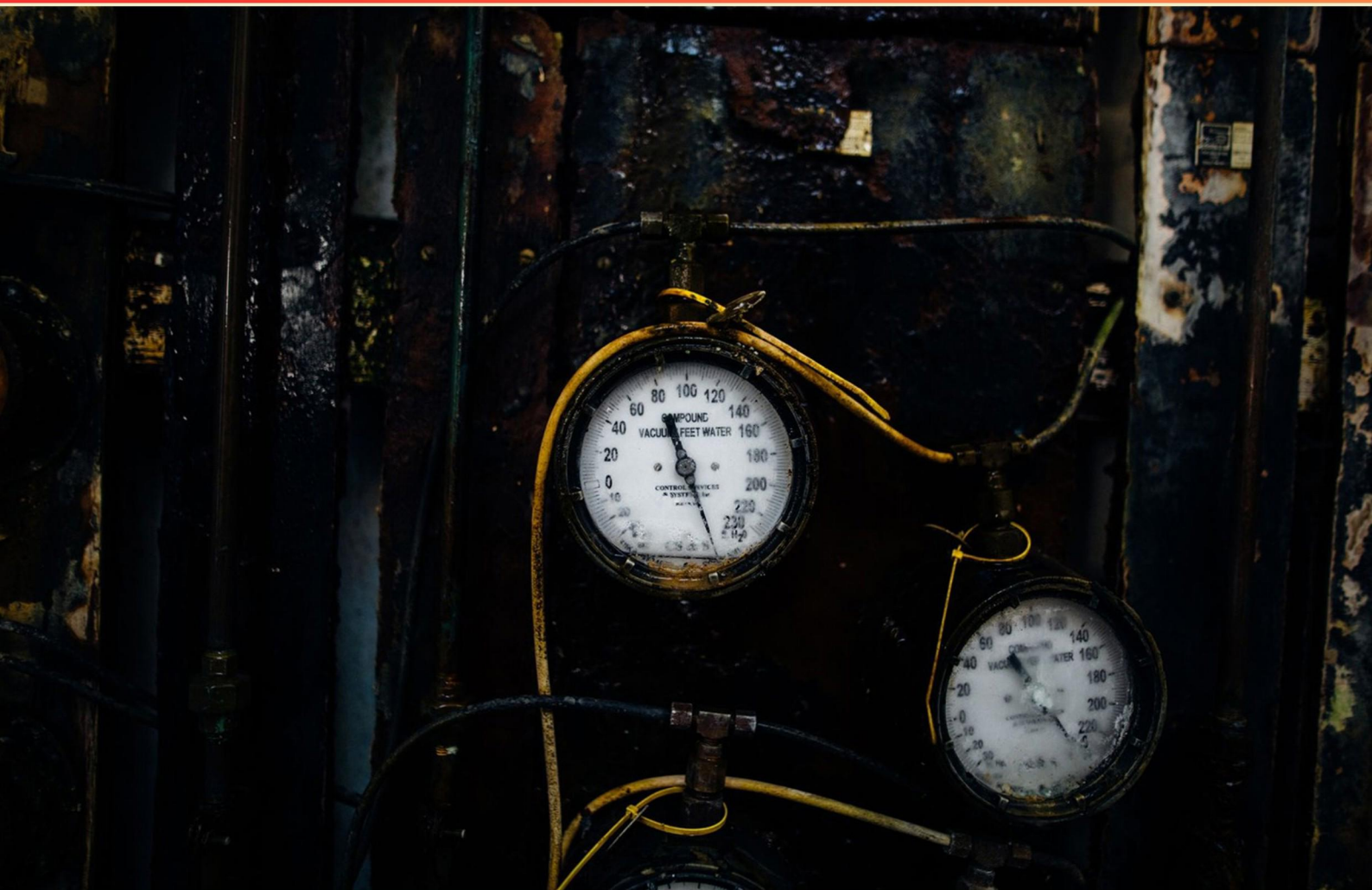


OHIO BOILER LICENSING PRACTICE EXAM (SAMPLE)

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 the minimum blowback on a safety valve that pops at 250 psig?**
 - A. 2 psig
 - B. 3 psig
 - C. 4 psig
 - D. 5 psig
- 2. What is the satisfactory concentration of chlorides in boiler water compared to feedwater in low and medium pressure boilers?**
 - A. 5
 - B. 10
 - C. 15
 - D. 20
- 3. Which condition caused by improper water treatment may be corrected by maintaining proper alkalinity?**
 - A. Scaling
 - B. Corrosion
 - C. Foaming/carryover
 - D. Clogging
- 4. To prevent what adverse condition should the pH of water in the cooling system be kept above 7?**
 - A. Scaling
 - B. Algae Growth
 - C. Corrosion
 - D. Fouling
- 5. What is the draft condition recommended when using soot blowers?**
 - A. -0.05 to -0.10 inches of water
 - B. -0.10 to -0.15 inches of water
 - C. -0.15 to -0.20 inches of water
 - D. -0.20 to -0.25 inches of water

- 6. What should you not lock out when a boiler is shut down for inspection?**
- A. The bottom drain valve
 - B. The top tri cock or boiler vent
 - C. The feedwater pump
 - D. The main steam valve
- 7. Which chemical is commonly used to manage algae accumulation in cooling towers?**
- A. Chlorine
 - B. Copper Sulfate
 - C. Alum
 - D. Hydrochloric Acid
- 8. What type of water can be added to a boiler without treating it first?**
- A. Rainwater
 - B. Distilled water
 - C. None, all feedwater requires pre-treatment
 - D. Well water
- 9. What action should be taken if the superheater pressure exceeds safe levels?**
- A. Increase the feedwater supply
 - B. Activate the safety valve
 - C. Close the superheater inlet
 - D. Reduce the boiler temperature
- 10. What limitations does a pump that must draw its suction from below face?**
- A. Electric power capacity and pipe length
 - B. Atmospheric pressure and water temperature
 - C. Fluid viscosity and pump depth
 - D. Design pressure and flow rate

Answers

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

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Explanations

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1. What is the minimum blowback on a safety valve that pops at 250 psig?

- A. 2 psig
- B. 3 psig
- C. 4 psig
- D. 5 psig**

The minimum blowback on a safety valve that pops at 250 psig is determined by the standards set for safety valve performance, which typically require a certain amount of blowback to ensure proper operation. For a safety valve that is set to pop at a specific pressure, such as 250 psig, there is an industry standard that mandates the blowback or reseating pressure to be a certain amount above the set pressure. In the case of a valve set at 250 psig, the minimum blowback is established to be at least 5 psig above the popping pressure. This means that the valve must be able to reopen and reseal correctly after the pressure has been relieved, which ensures the system remains safe and operational. The 5 psig value ensures that the valve does not continuously leak or fail to reseal, thus efficiently managing pressure within the system and preventing dangerous overpressure conditions. This requirement is crucial for maintaining the safety and reliability of the system since it prevents the valve from being inadvertently activated by minor pressure fluctuations and ensures it operates correctly under expected conditions. It guarantees that the valve functions as intended, thereby protecting both the equipment and personnel involved.

2. What is the satisfactory concentration of chlorides in boiler water compared to feedwater in low and medium pressure boilers?

- A. 5
- B. 10**
- C. 15
- D. 20

In the context of low and medium pressure boilers, maintaining an appropriate concentration of chlorides in the boiler water is crucial for preventing corrosion and ensuring the longevity of the boiler system. The satisfactory concentration of chlorides in boiler water is often set in relation to the feedwater concentration. For low and medium pressure boilers, the acceptable ratio typically allows for a maximum ratio of about 10 to 1, meaning that the concentration of chlorides in the boiler water should not exceed ten times that of the feedwater. This limit helps to minimize corrosion risks, which are exacerbated by high chloride levels. Essentially, maintaining a concentration of chlorides in boiler water that is no more than ten times that of the feedwater (indicated by the selected answer) is a well-recognized guideline within the industry. It reflects the need to carefully balance operational chemistry to extend the life and efficiency of boiler systems while preventing damage due to corrosive elements. Thus, selecting a concentration of 10 aligns with best practices about managing boiler water chemistry in low and medium-pressure applications.

3. Which condition caused by improper water treatment may be corrected by maintaining proper alkalinity?

- A. Scaling
- B. Corrosion
- C. Foaming/carryover**
- D. Clogging

Maintaining proper alkalinity in boiler water is crucial for preventing foaming and carryover. When the alkalinity levels are not adequately controlled, it can lead to excessive levels of dissolved solids and other contaminants, which may increase the risk of foaming. Foaming occurs when steam bubbles form in the boiler water, capturing water and causing it to carry over into the steam system. This carryover can lead to issues such as reduced efficiency, contamination of steam, and damage to equipment. Proper alkalinity helps to stabilize the pH of the boiler water, reducing the likelihood of conditions that lead to foaming. It ensures that the right balance of chemicals is maintained, supporting the overall health of the boiler system. In contrast, scaling, corrosion, and clogging are generally influenced by other factors such as temperature, pressure, and the presence of specific contaminants or metals, rather than solely by alkalinity levels. Therefore, maintaining proper alkalinity is particularly effective in combating foaming and carryover in boiler operations.

4. To prevent what adverse condition should the pH of water in the cooling system be kept above 7?

- A. Scaling
- B. Algae Growth
- C. Corrosion**
- D. Fouling

Maintaining the pH of water in the cooling system above 7 is essential to prevent corrosion. Corrosion occurs when metal surfaces interact with water that is acidic, which can lead to the deterioration of pipes, fittings, and other components over time. An acidic environment can significantly increase the electrochemical reactions that cause metals, particularly iron and steel, to rust and degrade more rapidly. When the pH is kept neutral or alkaline (above 7), it helps to form a protective oxide layer on metal surfaces, which can significantly reduce the rate of corrosion. This layer acts as a barrier between the metal and corrosive agents present in the water, thus prolonging the lifespan of the system and enhancing the efficiency of heat exchange. In contrast, scaling may occur due to high mineral content, algae growth is linked to organic matter and nutrient presence rather than pH, and fouling is generally associated with particulate accumulation but not necessarily dependent on pH levels alone. Therefore, understanding and managing the pH level in a cooling system is crucial for preventing corrosion and ensuring efficient operation.

5. What is the draft condition recommended when using soot blowers?

- A. -0.05 to -0.10 inches of water
- B. -0.10 to -0.15 inches of water**
- C. -0.15 to -0.20 inches of water
- D. -0.20 to -0.25 inches of water

The recommended draft condition when using soot blowers is between -0.10 to -0.15 inches of water. This range is vital for ensuring the effective removal of soot and debris from boiler tubes without adversely affecting the combustion process or boiler operation. Maintaining this optimal draft condition helps in achieving the necessary pressure differential for soot blowers to operate effectively, thereby enhancing the efficiency of heat transfer and preventing potential damage due to excessive build-up. Operating outside this draft range could lead to insufficient cleaning, or conversely, too aggressive cleaning that can disrupt normal combustion and boiler performance. Therefore, staying within this specific draft range aligns with best practices for boiler maintenance and operation, ensuring both safety and efficiency.

6. What should you not lock out when a boiler is shut down for inspection?

- A. The bottom drain valve
- B. The top tri cock or boiler vent**
- C. The feedwater pump
- D. The main steam valve

When a boiler is shut down for inspection, it's essential to ensure that safety measures are appropriately implemented to prevent any hazards. In this context, the top tri-cock or boiler vent is the correct choice not to lock out because it serves a critical function in maintaining safety during inspection. The top tri-cock, or vent, allows for the escape of any steam or pressure that may be trapped within the boiler. Locking this out would negate its ability to function properly during inspection, potentially creating a dangerous situation if pressure builds up in the boiler. It is essential during maintenance that any remaining steam or pressure can be safely vented to prevent accidents and ensure that the inspector can carry out their duties safely. In contrast, the other options serve purposes that are more directly related to maintaining the integrity of the system when the boiler is not in operation. The bottom drain valve, feedwater pump, and main steam valve are components that should be secured (locked out) to ensure that no inadvertent actions could lead to unsafe conditions while the boiler is under inspection.

7. Which chemical is commonly used to manage algae accumulation in cooling towers?

- A. Chlorine
- B. Copper Sulfate**
- C. Alum
- D. Hydrochloric Acid

Copper sulfate is commonly used to manage algae accumulation in cooling towers due to its effectiveness as an algicide. It works by disrupting the cellular processes of algae, leading to their death and preventing further growth. This is particularly important for cooling towers, where algae can clog systems, reduce efficiency, and promote the growth of bacteria such as Legionella, posing health risks. The chemical nature of copper sulfate allows it to be easily dissolved in water, making it an ideal choice for application in the water systems of cooling towers. Its efficacy and relatively low cost also contribute to its widespread use in industrial applications. In contrast, while chlorine is often used as a disinfectant and can control algae, it is less targeted and can contribute to corrosion in certain materials used in cooling systems. Alum, primarily a coagulant used in water treatment processes, may not directly combat algae. Hydrochloric acid is mainly used for cleaning and pH adjustment rather than algae control.

8. What type of water can be added to a boiler without treating it first?

- A. Rainwater
- B. Distilled water
- C. None, all feedwater requires pre-treatment**
- D. Well water

The correct answer indicates that all types of feedwater, including rainwater, distilled water, and well water, require some form of pre-treatment before being added to a boiler. This necessity stems from the chemical composition and purity of the water used in boiler systems, which must meet specific criteria to ensure safe and efficient operation. Rainwater may seem like a pure source, but it can contain contaminants and impurities such as atmospheric pollutants or particulates, which can lead to foaming and scaling in the boiler. Distilled water, despite being pure and free of most minerals, can still be aggressive and potentially lead to corrosion if used in certain systems without proper treatment. Well water often contains a variety of minerals, bacteria, and other contaminants that can cause significant issues in boiler operation, including scale buildup and impairing heat transfer. Pre-treatment processes are crucial for all types of feedwater to enhance its quality, adjust pH levels, remove dissolved solids, and eliminate oxygen—all factors that can prevent corrosion, scaling, and ensure efficient heat transfer within the boiler system. Therefore, regardless of the source, feedwater should always be treated to ensure the long-term reliability and performance of the boiler.

9. What action should be taken if the superheater pressure exceeds safe levels?

- A. Increase the feedwater supply
- B. Activate the safety valve**
- C. Close the superheater inlet
- D. Reduce the boiler temperature

If the superheater pressure exceeds safe levels, activating the safety valve is a critical action. The safety valve is designed to relieve excess pressure within the system, preventing potential damage to equipment and ensuring safe operation. When the pressure in the superheater rises above the predetermined limit, the safety valve automatically opens, allowing steam to escape and reducing the pressure back to a manageable level. This mechanism is essential for maintaining safe operating conditions in a boiler system, protecting it from catastrophic failures that could result from overpressure situations. While options like increasing feedwater supply or reducing the boiler temperature might seem relevant, they do not directly address the immediate danger of excessive pressure in the superheater. Closing the superheater inlet could potentially limit the flow of steam but may not effectively manage the situation and could disrupt the overall operation of the boiler. Therefore, activating the safety valve is the most appropriate and effective response to ensure safety and maintain the integrity of the boiler system.

10. What limitations does a pump that must draw its suction from below face?

- A. Electric power capacity and pipe length
- B. Atmospheric pressure and water temperature**
- C. Fluid viscosity and pump depth
- D. Design pressure and flow rate

A pump that draws its suction from below must contend with atmospheric pressure and water temperature limits for effective operation. Atmospheric pressure acts as the maximum pressure available to push water into the pump from the suction line. If the suction lift exceeds this pressure, the pump may lose prime or fail to operate, as it relies on atmospheric pressure to assist in drawing the fluid. Water temperature also plays a crucial role because as temperature increases, water's density and viscosity change, which may affect the pump's ability to function properly. Higher temperatures can result in lower density, leading to reduced suction lift, while greater viscosity can impede fluid flow, creating additional challenges for the pump. This combination of atmospheric pressure and temperature considerations is fundamental to ensuring that the pump operates within its designed parameters. Therefore, understanding these limitations is essential for selecting a pump and using it effectively in various applications.

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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://ohboilerlicensing.examzify.com>

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

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