

Gas Technician 3 (G3) License Practice Exam (Sample)

Study Guide



Everything you need from our exam experts!

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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. Where should unions and swing joints NOT be used in gas piping?**
 - A. Visible areas**
 - B. Accessibility points**
 - C. Where piping is to be concealed**
 - D. High pressure sections**

- 2. How many amps are required to operate a device rated for 1500 watts at 120 volts?**
 - A. 5 Amps**
 - B. 10 Amps**
 - C. 12.5 Amps**
 - D. 15 Amps**

- 3. What does high carbon monoxide levels in a home typically indicate?**
 - A. Proper appliance operation**
 - B. Potential appliance malfunctions**
 - C. Optimal ventilation**
 - D. Low humidity levels**

- 4. What is the BTUH output of an electrical heater rated at 15 KW?**
 - A. 51,180 BTUH**
 - B. 45,000 BTUH**
 - C. 60,000 BTUH**
 - D. 57,600 BTUH**

- 5. How does water depth affect the burial requirement for gas lines?**
 - A. It has no effect**
 - B. Increases the depth**
 - C. Decreases the depth**
 - D. Requires additional protective measures**

- 6. What is the term for the unsafe buildup of gas in an enclosed space?**
- A. Gas leakage**
 - B. Gas accumulation**
 - C. Gas rupture**
 - D. Gas evacuation**
- 7. Which gas appliance component regulates the gas supplied to the pilot light?**
- A. Main burner valve**
 - B. Pilot light valve**
 - C. Gas regulator**
 - D. Shutoff valve**
- 8. One watt equals?**
- A. 3.412 BTUH**
 - B. 3.143 BTUH**
 - C. 3.333 BTUH**
 - D. 2.845 BTUH**
- 9. Which component is responsible for monitoring the proper flow of gas to the burner?**
- A. The gas relief valve**
 - B. The pressure regulator**
 - C. The flame sensor**
 - D. The ignition electrode**
- 10. Why is regular maintenance crucial for gas appliances?**
- A. It reduces energy consumption**
 - B. It enhances efficiency, safety, and extends the appliance lifespan**
 - C. It prevents cosmetic issues on the appliance**
 - D. It improves the aesthetic of the device installation**

Answers

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

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Explanations

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1. Where should unions and swing joints NOT be used in gas piping?

- A. Visible areas
- B. Accessibility points
- C. Where piping is to be concealed**
- D. High pressure sections

Unions and swing joints are valuable components in gas piping systems, particularly for creating connection points that allow for easy disassembly for maintenance and repairs. However, their placement is critical for safety and functionality. When it comes to areas where piping is to be concealed, using unions and swing joints is not advisable. This is due to several reasons. First, concealed fittings can lead to difficulties in inspection and maintenance. If a leak or issue arises in a hidden joint, it may not be easily accessible for repairs or monitoring, which could result in hazardous situations. Concealed locations may also lead to challenges in adhering to regulations which often dictate that joints in gas piping be accessible for periodic inspection and maintenance. In scenarios where visibility and access are possible, using unions and swing joints is generally acceptable, as it promotes safety and ease of maintenance. Additionally, in high-pressure sections, the integrity of the joint becomes crucial, and it is preferable to use welded or threaded connections to minimize the risk of leaks due to the high-stress conditions. Thus, the correct choice emphasizes the importance of maintaining accessibility and safety in the installation of gas piping systems.

2. How many amps are required to operate a device rated for 1500 watts at 120 volts?

- A. 5 Amps
- B. 10 Amps
- C. 12.5 Amps**
- D. 15 Amps

To determine the number of amps required to operate a device rated for 1500 watts at 120 volts, we can use the formula relating watts (W), volts (V), and amps (A):
$$\text{Amps} = \frac{\text{Watts}}{\text{Volts}}$$
 Substituting the given values:
$$\text{Amps} = \frac{1500 \text{ watts}}{120 \text{ volts}} = 12.5 \text{ amps}$$
 This calculation shows that a device rated for 1500 watts at 120 volts requires 12.5 amps to operate, confirming that the choice of 12.5 Amps is indeed accurate. Understanding this formula is essential for electrical calculations, as it allows for the determination of the current needed to safely operate devices without overloading circuit components. It's critical for technicians to be able to accurately calculate these values to ensure compliance with safety standards and to prevent circuit overloads that could lead to equipment damage or hazardous conditions.

3. What does high carbon monoxide levels in a home typically indicate?

- A. Proper appliance operation**
- B. Potential appliance malfunctions**
- C. Optimal ventilation**
- D. Low humidity levels**

High carbon monoxide levels in a home typically indicate potential appliance malfunctions. When appliances that burn fuel, such as gas stoves, furnaces, or water heaters, are functioning correctly and have proper ventilation, they produce minimal carbon monoxide. However, if there is an issue with the appliance, such as improper combustion or a blockage in the venting system, carbon monoxide can accumulate, leading to dangerously high levels within the home. This buildup serves as a critical warning sign that immediate action is necessary to ensure safety and to assess the condition of the appliances in use. Other factors, such as proper appliance operation, would not lead to high carbon monoxide levels, as efficient operation and sufficient ventilation would typically reduce these levels. Similarly, optimal ventilation would facilitate the dispersal of carbon monoxide, preventing its accumulation. Low humidity levels do not directly relate to carbon monoxide production, as humidity primarily affects air quality and comfort, but not combustion efficiency or emissions. Understanding these aspects underscores the significance of monitoring carbon monoxide levels as an indicator of appliance safety and functionality.

4. What is the BTUH output of an electrical heater rated at 15 KW?

- A. 51,180 BTUH**
- B. 45,000 BTUH**
- C. 60,000 BTUH**
- D. 57,600 BTUH**

To determine the BTUH (British Thermal Units per hour) output of an electrical heater rated at 15 kilowatts (KW), you can use the conversion factor where 1 kilowatt is equal to approximately 3,412 BTU. To calculate the BTUH: 1. Start with the kilowatt rating of the heater: 15 KW. 2. Multiply by the conversion factor: $15 \text{ KW} \times 3,412 \text{ BTU/KW} = 51,180 \text{ BTU}$. This calculation shows that the output of the heater in BTUH is 51,180, making it the correct answer. The BTUH measurement reflects the thermal energy output of the electrical heater and is vital for understanding its heating capabilities in practical applications.

5. How does water depth affect the burial requirement for gas lines?

- A. It has no effect**
- B. Increases the depth**
- C. Decreases the depth**
- D. Requires additional protective measures**

The correct understanding is that the burial requirement for gas lines is influenced by water depth. Water depth can impact the protection levels needed for gas lines, particularly because deeper water can result in increased soil pressure, potential for erosion, and dynamics that may cause shifts or movement of the pipe. In environments where gas lines are installed underwater or in coastal areas, the depth of the water requires careful consideration of the burial depth needed to ensure the integrity and safety of the gas lines. Therefore, it is important to take water depth into account to prevent any potential hazards or risks associated with gas leaks. Recognizing the factors that affect underground installations, such as soil conditions and the surrounding environment, is crucial for ensuring compliance with safety standards and regulations. Hence, water depth indeed has an impact on the burial requirement for gas lines.

6. What is the term for the unsafe buildup of gas in an enclosed space?

- A. Gas leakage**
- B. Gas accumulation**
- C. Gas rupture**
- D. Gas evacuation**

The term "gas accumulation" refers to the unsafe buildup of gas in an enclosed space. This accumulation can pose a significant risk of explosion or poisoning, particularly as gases like natural gas are typically colorless and odorless, making them difficult to detect without proper equipment. In an enclosed environment, the gas can reach hazardous concentrations, leading to dangerous situations for occupants. In contrast, "gas leakage" would describe the process of gas escaping from its intended containment, while "gas rupture" pertains to a break or failure in a gas line or container, which can also lead to leaks. "Gas evacuation" refers to the process of removing gas from a space, which is a necessary response once an accumulation is detected to ensure safety. Thus, "gas accumulation" is the most accurate term to describe the issue of gas buildup in a confined area.

7. Which gas appliance component regulates the gas supplied to the pilot light?

- A. Main burner valve**
- B. Pilot light valve**
- C. Gas regulator**
- D. Shutoff valve**

The gas regulator is the component that plays a critical role in maintaining the appropriate pressure of gas supplied to the pilot light. Its main function is to reduce the higher pressure of the gas coming from the supply line to a much lower and manageable pressure that is suitable for the appliance's operation. This regulation ensures that the pilot light receives a consistent and safe amount of gas, allowing it to remain lit and function effectively. In the context of appliances, the pilot light is essential for ignition, and having the correct gas pressure is crucial for its reliability. Thus, the gas regulator is vital for ensuring that both the pilot light and the main burner operate safely within their designated pressure parameters, enhancing overall appliance efficiency and safety.

8. One watt equals?

- A. 3.412 BTUH**
- B. 3.143 BTUH**
- C. 3.333 BTUH**
- D. 2.845 BTUH**

The correct correlation for one watt is indeed approximately 3.412 BTUH (British Thermal Units per Hour). This conversion is important for understanding energy consumption and efficiency in various heating and cooling applications, especially in the gas technician field. One watt measures the rate of energy transfer equivalent to one joule of energy per second, while BTUH measures the energy needed to raise the temperature of one pound of water by one degree Fahrenheit in one hour. The essence of the conversion between these two units is particularly relevant in situations involving electrical appliances and heating systems, where users may need to determine energy usage in terms they are more familiar with, such as BTUs. Understanding this conversion can aid technicians in performing calculations related to energy efficiency, sizing equipment, and advising clients on their energy use, which is critical in maintaining and improving energy efficiency in gas systems.

9. Which component is responsible for monitoring the proper flow of gas to the burner?

- A. The gas relief valve**
- B. The pressure regulator**
- C. The flame sensor**
- D. The ignition electrode**

The component responsible for monitoring the proper flow of gas to the burner is the flame sensor. The flame sensor detects whether a flame is present, which is an indicator that gas is being ignited and flowing correctly. If the flame sensor does not detect a flame, it can indicate that there is a problem, potentially leading to a gas shutoff for safety reasons. This ensures that gas is not flowing when there is no flame to use it, thereby preventing dangerous situations such as gas leaks or explosions. The other components mentioned serve different functions. The gas relief valve is designed to vent excess pressure from the system to prevent overpressure situations, while the pressure regulator controls the pressure of gas being supplied to the burner, ensuring it remains within a safe range. The ignition electrode is responsible for igniting the gas when it is released, not monitoring its flow. Each of these components plays a crucial role in the overall operation of gas appliances, but it is the flame sensor that specifically monitors the presence of a flame to confirm that gas is flowing appropriately.

10. Why is regular maintenance crucial for gas appliances?

- A. It reduces energy consumption**
- B. It enhances efficiency, safety, and extends the appliance lifespan**
- C. It prevents cosmetic issues on the appliance**
- D. It improves the aesthetic of the device installation**

Regular maintenance is crucial for gas appliances primarily because it significantly enhances efficiency, safety, and extends the appliance lifespan. By conducting routine checks and servicing, potential issues can be identified and rectified before they lead to serious problems. This proactive approach helps maintain optimal performance, ensuring that the appliance operates safely without risk of gas leaks or other hazards. Moreover, when appliances are well-maintained, they tend to function more efficiently, which can lead to lower energy consumption over time. This is beneficial not only from an economic perspective but also for the environment, as improved efficiency contributes to reduced greenhouse gas emissions. Extended lifespan is another key aspect of regular maintenance. Appliances that receive consistent care are likely to last longer than those that are neglected, which means users will enjoy the benefits of their initial investment for a greater period of time. Overall, the primary benefits of safety, efficiency, and longevity make routine maintenance an essential practice for anyone using gas appliances.

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://gastechnician3.examzify.com>

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

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