

# Gas Technician 2 (G2) 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. Which brazing rods should not be used for natural gas/propane due to their reaction with sulfur?**
  - A. Copper**
  - B. Phosphorus**
  - C. Aluminum**
  - D. Silver**
  
- 2. What information is essential for determining the size of a Circulator Pump in a Combination Heating System?**
  - A. The total length of piping in the system**
  - B. The required water flow rate and head pressure in the heating loop**
  - C. The type of water heater used**
  - D. The temperature of the water entering the heating system**
  
- 3. Given the equipment firing rates, what should be the grill size required for 3 Hot Water Boilers, 2 Hot Water Heaters, and 1 Domestic Hot Water Heater?**
  - A. 200 Square Inches**
  - B. 250 Square Inches**
  - C. 275 Square Inches**
  - D. 300 Square Inches**
  
- 4. A Natural Gas Service Regulator is normally set to deliver pressure from:**
  - A. Pounds to 7 Inches W.C.**
  - B. Atmospheric Pressure to 5 PSI**
  - C. 0 to 20 Inches W.C.**
  - D. 7 to 14 Inches W.C.**
  
- 5. Why is it necessary to de-energize a circuit before using an Ohmmeter?**
  - A. To prevent damage to the meter**
  - B. To obtain a valid resistance reading**
  - C. To avoid electric shock**
  - D. All of the above**

**6. What type of flame results from mixing primary air with gas prior to ignition?**

- A. Bunsen Flame**
- B. Luminous Flame**
- C. Blue Flame**
- D. Yellow Flame**

**7. If one cubic foot of Natural Gas is 1000 BTUH, what is the ratio of Dilution Air?**

- A. 10**
- B. 12**
- C. 15**
- D. 20**

**8. What is the most crucial element needed for proper combustion in a gas appliance?**

- A. Heat**
- B. Fuel**
- C. Air**
- D. Pressure**

**9. If there is a gurgling sound from the Hot Water Tank, what is the most probable cause?**

- A. Malfunctioning thermostat**
- B. Scale or Lime built-up due to water hardness**
- C. Air trapped in the tank**
- D. Faulty heating element**

**10. Which of the following components is essential for the safe operation of a gas regulator?**

- A. Flame arrestor**
- B. Diaphragm**
- C. Control valve**
- D. Igniter**

## **Answers**

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

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## **Explanations**

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**1. Which brazing rods should not be used for natural gas/propane due to their reaction with sulfur?**

- A. Copper**
- B. Phosphorus**
- C. Aluminum**
- D. Silver**

Brazing rods that contain phosphorus should not be used for natural gas or propane applications primarily due to their reactivity with sulfur. When phosphorus is exposed to high-temperature environments, especially in the presence of combustion gases that may contain sulfur compounds, it can form phosphides. These phosphides can create brittle and weak joints in the brazed connections, leading to potential failure. Using phosphorus-containing brazing materials can result in unreliable seals in gas lines that are critical for safety. In contrast, the other materials listed, such as copper, aluminum, and silver, do not pose the same risks regarding sulfur reactions, making them more appropriate choices for brazing applications involving natural gas and propane. Copper is widely used in many applications due to its good thermal conductivity and strength, while silver is often preferred for high-strength requirements and corrosion resistance. Aluminum is used in some specific applications where appropriate; however, its use is typically more specialized compared to copper and silver. Overall, understanding the chemical interactions of brazing materials with sulfur helps in making informed choices that ensure safe and durable gas connections in various installations.

**2. What information is essential for determining the size of a Circulator Pump in a Combination Heating System?**

- A. The total length of piping in the system**
- B. The required water flow rate and head pressure in the heating loop**
- C. The type of water heater used**
- D. The temperature of the water entering the heating system**

Determining the size of a circulator pump in a combination heating system hinges on understanding the required water flow rate and head pressure in the heating loop. These two factors are crucial because they influence the effectiveness of the heating system and ensure that the desired temperature is achieved throughout the system. The required water flow rate is critical because it defines the amount of water that must circulate to transfer the necessary heat. If the flow rate is insufficient, some areas of the system may not reach the desired temperature, leading to inefficiencies and potential comfort issues. Head pressure, on the other hand, refers to the resistance encountered by the pump as water moves through the system, which includes friction in the pipes, fittings, and any vertical lift required. Calculating the head pressure ensures that the pump can overcome these resistances, guaranteeing reliable and efficient water circulation. While the total length of piping is important, it is part of the head pressure calculations rather than a standalone factor. The type of water heater does play a role in overall system design but does not directly influence the sizing of the circulator pump. Lastly, the temperature of the water entering the heating system can affect system efficiency but does not directly inform the sizing of the circulator pump itself. Therefore, focusing specifically

**3. Given the equipment firing rates, what should be the grill size required for 3 Hot Water Boilers, 2 Hot Water Heaters, and 1 Domestic Hot Water Heater?**

- A. 200 Square Inches**
- B. 250 Square Inches**
- C. 275 Square Inches**
- D. 300 Square Inches**

To determine the appropriate grill size for the specified equipment, one would typically evaluate the total BTU (British Thermal Unit) input of all the appliances in operation, as this directly impacts the air supply needed for combustion. Each appliance has its own BTU rating, and the grill size must accommodate the cumulative requirements for proper ventilation and safe operation. In this scenario, the collective firing rates of the three hot water boilers and two hot water heaters, along with the domestic hot water heater, need to be calculated. Each piece of equipment contributes to the total demand for combustion air, which directly correlates to how much grill area is necessary to ensure adequate airflow. The size of the grill needs to be sufficient to prevent any detrimental effects on combustion efficiency and to ensure that there is no risk of backdraft or insufficient air supply. Generally, the sizing is influenced by factors such as the total BTUs, type of fuel, and the configuration of the appliances. Based on the calculations and guidelines typically used in the industry, the determined requirement for the aggregate of these units suggests that a grill size of 275 square inches is appropriate. This measurement achieves a balance that allows for proper ventilation, enhancing the safety and efficiency of the heating system. Hence, the selection of

**4. A Natural Gas Service Regulator is normally set to deliver pressure from:**

- A. Pounds to 7 Inches W.C.**
- B. Atmospheric Pressure to 5 PSI**
- C. 0 to 20 Inches W.C.**
- D. 7 to 14 Inches W.C.**

A natural gas service regulator is designed to reduce the pressure of natural gas from the supply line to a usable level for residential or commercial appliances. It typically operates to deliver pressure measured in inches of water column (W.C.), which is a standard measurement for low-pressure gas systems. The correct answer indicates that a service regulator is set to deliver pressure from pounds to 7 inches W.C. This reflects the way natural gas systems function, where the incoming gas supply might be at a high pressure (expressed in pounds per square inch, PSI), but the usable pressure required for most appliances is significantly lower, often measured in inches of water column. The other answer choices either refer to inappropriate pressure ranges or incorrect units for the application of natural gas service regulators, making them unsuitable. Understanding the correct operating pressure is crucial for safety and efficiency in gas systems.

## 5. Why is it necessary to de-energize a circuit before using an Ohmmeter?

- A. To prevent damage to the meter**
- B. To obtain a valid resistance reading**
- C. To avoid electric shock**
- D. All of the above**

De-energizing a circuit before using an Ohmmeter is essential for several critical reasons. First and foremost, it helps to prevent damage to the meter. Ohmmeters are designed to measure resistance by applying a small test voltage across the circuit; if the circuit is live, this can lead to excessive voltage and current that could potentially damage the meter's internal components. In addition, de-energizing the circuit ensures that you obtain a valid resistance reading. When a circuit is energized, other factors such as inductance and capacitance can affect the measurements, resulting in inaccurate readings. A stable, uninterrupted path without current allows the Ohmmeter to measure pure resistance without interference. Lastly, safety is a paramount concern. Working with energized circuits poses a risk of electric shock, which can lead to serious injury or even be lethal. Disabling the circuit ensures that the technician can perform the measurement safely, without the risk of electrocution. By addressing these factors—protecting the meter, ensuring accurate measurements, and prioritizing personal safety—de-energizing the circuit becomes an essential step before using an Ohmmeter.

## 6. What type of flame results from mixing primary air with gas prior to ignition?

- A. Bunsen Flame**
- B. Luminous Flame**
- C. Blue Flame**
- D. Yellow Flame**

The correct answer is blue flame. A blue flame is produced when there is a proper mix of gas and primary air before ignition, which leads to complete combustion. This type of flame is characterized by a clean and efficient burn with minimal soot production, indicating that the gas is burning efficiently due to the correct air-to-fuel ratio. In the context of combustion, when primary air is mixed with gas prior to ignition, it allows for a more thorough mixing of the fuel and oxidizer. The result is a hotter flame that is blue in color, which signifies that there is sufficient oxygen for combustion, promoting a complete and efficient burning process. In contrast, a luminous flame typically appears yellow or orange and is associated with incomplete combustion, resulting in the production of soot or carbon particles that glow. This would not be the result of a proper mixture of primary air and gas prior to ignition. A Bunsen flame usually refers to a specific type of flame produced in a Bunsen burner, which can appear in different forms (such as luminous or non-luminous) depending on the air supply adjustment. Without an appropriate mix of air and gas, it could produce either a yellow or blue flame. Lastly, a yellow flame is indicative of incomplete combustion and

**7. If one cubic foot of Natural Gas is 1000 BTUH, what is the ratio of Dilution Air?**

- A. 10**
- B. 12**
- C. 15**
- D. 20**

To determine the ratio of dilution air in relation to the combustion of natural gas, it's essential to understand the principles of how natural gas burns and the stoichiometric requirement for proper combustion. When burning natural gas, there is a specific amount of air needed to achieve complete combustion, minimizing the production of harmful byproducts like carbon monoxide. The common stoichiometric ratio for natural gas, which is primarily composed of methane (CH<sub>4</sub>), requires around 10 parts of air to 1 part of gas by volume. However, the question specifies that 1 cubic foot of natural gas produces 1000 BTUH. In the context of combustion and efficiency, the ideal dilution air ratio considers the energy content and the amount of air needed for safe and efficient burning. Evaluating the data, a dilution air ratio of 15:1 indicates that for every part of natural gas, there would be 15 parts of air, allowing for complete combustion and helping to prevent excessive heat or pressure variations within a gas appliance. This ratio reflects a balance between safety and efficiency while ensuring that enough air is supplied to facilitate optimum combustion and mitigate risks associated with incomplete burning, like the accumulation of carbon monoxide. In summary, the dilution air ratio of 15 is established based

**8. What is the most crucial element needed for proper combustion in a gas appliance?**

- A. Heat**
- B. Fuel**
- C. Air**
- D. Pressure**

For proper combustion in a gas appliance, the most crucial element is air. Combustion is the chemical process where fuel reacts with oxygen to produce heat and light. In this context, air acts as the source of oxygen needed for the reaction to occur. Without sufficient air, there won't be enough oxygen to support combustion, which can lead to incomplete combustion, resulting in dangerous situations like carbon monoxide production and decreased efficiency. While heat, fuel, and pressure are important components in the operation of gas appliances, they cannot initiate or sustain combustion without sufficient air. Heat is required to start the combustion process, while fuel provides the hydrocarbons necessary for combustion. Pressure influences the flow and delivery of gas but does not contribute to the combustion reaction directly. Therefore, air is the essential element that ensures proper combustion and safety in gas appliances.

**9. If there is a gurgling sound from the Hot Water Tank, what is the most probable cause?**

- A. Malfunctioning thermostat**
- B. Scale or Lime built-up due to water hardness**
- C. Air trapped in the tank**
- D. Faulty heating element**

A gurgling sound from a hot water tank is most commonly associated with the build-up of scale or lime due to hard water. When minerals like calcium and magnesium dissolve in the water, they can settle and form deposits on the interior surfaces of the tank and the heating elements. As the heating element operates, these deposits can trap and heat water, causing the formation and movement of steam bubbles. This process results in the gurgling noise as the bubbles burst or shift within the tank. In the context of maintaining hot water tanks, recognizing the signs of mineral build-up is crucial. If scale accumulation is not addressed, it can lead to reduced efficiency, increased energy costs, and potentially even damage to the heating system. Regular maintenance, such as flushing the tank and using a water softener if necessary, can help prevent this issue from occurring. While other potential causes, such as air trapped in the tank or a faulty heating element, may lead to operational issues, gurgling specifically points to the effect of scale or lime accumulation, making it the most probable cause in this scenario.

**10. Which of the following components is essential for the safe operation of a gas regulator?**

- A. Flame arrestor**
- B. Diaphragm**
- C. Control valve**
- D. Igniter**

The essential component for the safe operation of a gas regulator is the diaphragm. The diaphragm is responsible for regulating the pressure of gas flowing through the system. It senses the pressure and adjusts accordingly to ensure that the output pressure remains steady and within safe limits. This mechanism helps to prevent over-pressurization, which can lead to dangerous situations, including gas leaks or explosions. The diaphragm also serves to isolate the sensing and control functions within the regulator, making it critical for maintaining consistent gas delivery under varying demand conditions. The other components listed do not play the same vital role in regulating gas pressure as the diaphragm does, although some may be important for specific functions in a larger gas system. For example, a flame arrestor prevents the propagation of flame into the gas line, while a control valve might manage the flow rate of gas. An igniter is involved in starting combustion but does not interact directly with the regulation of gas pressure. Hence, the diaphragm is the key component that ensures the safe and reliable functioning of a gas regulator.

# 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](mailto:hello@examzify.com).**

**Or visit your dedicated course page for more study tools and resources:**

**<https://gastechnician2.examzify.com>**

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

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