

GAS FITTER PRACTICE TEST (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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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

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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. Before lighting a burner in a steam boiler, what must be ensured?**
 - A. There is water in the boiler
 - B. The temperature controller is set properly
 - C. The main burner test firing valve is turned on
 - D. The safety valves are open
- 2. What is the net stack temperature in a gas fitting system?**
 - A. Downstream of the draft hood
 - B. Upstream of the draft hood
 - C. Plus the ambient temperature
 - D. Minus the ambient temperature
- 3. What should the relief valve for a residential low-pressure hot water boiler system be set to?**
 - A. 14.7 psia
 - B. 15 psia
 - C. 30 psig
 - D. 30 psia
- 4. The pilotstat can be:**
 - A. A separate valve
 - B. An electromagnetic switch or relay
 - C. A component of combination control valve
 - D. All of the above
- 5. If 1 cubic foot of natural gas is 1000 Btuh, what is the ratio of total air?**
 - A. 10
 - B. 15
 - C. 5
 - D. 30

- 6. What would be the approximate purging time for a 1-inch NPS pipe at 100-feet?**
- A. 50 seconds
 - B. 1 minute
 - C. 1 minute, 24 seconds
 - D. 1 minute, 10 seconds
- 7. At what temperature does the blower fan turn off in a combination limit control?**
- A. 100°F
 - B. 200°F
 - C. 130°F
 - D. 127°F
- 8. Which type of vent is not acceptable for use with direct vent appliances?**
- A. Single wall vent
 - B. Direct vent pipe
 - C. B vent
 - D. Type L vent
- 9. If an air conditioning system is added to a heating system, what is recommended?**
- A. A smaller blower pulley be installed
 - B. A larger blower pulley be installed
 - C. A larger motor pulley be installed
 - D. A smaller motor pulley be installed
- 10. When venting spillage occurs and flue gases pass back through combustion zones, what change occurs?**
- A. Flue gases are hotter and rise faster through chimney
 - B. Flue CO₂ gases are more efficient
 - C. Flue CO₂ gases change to N₂
 - D. Flue CO₂ gases change to CO

Answers

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

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Explanations

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1. Before lighting a burner in a steam boiler, what must be ensured?

- A. There is water in the boiler**
- B. The temperature controller is set properly
- C. The main burner test firing valve is turned on
- D. The safety valves are open

Ensuring that there is water in the boiler before lighting a burner is crucial for the safe operation of a steam boiler. Water is essential for the boiler to function correctly because it acts as a heat transfer medium and helps produce steam. If the burner is ignited without sufficient water, the boiler can overheat, which may lead to catastrophic failures such as a boiler explosion or damage to boiler components. This is because the heat generated by the burner needs to be absorbed by the water to prevent overheating of the boiler shell and other structural components. The presence of water in the boiler also allows for necessary pressure buildup, which is essential for steam generation. Always checking the water level ensures that the boiler operates within safe parameters, maintaining both efficiency and safety standards. Proper water levels are typically indicated by gauges on the boiler and should be monitored closely during operation.

2. What is the net stack temperature in a gas fitting system?

- A. Downstream of the draft hood
- B. Upstream of the draft hood
- C. Plus the ambient temperature
- D. Minus the ambient temperature**

The net stack temperature in a gas fitting system is defined as the temperature of the flue gases as they exit the appliance, measured after the effects of mixing with ambient air have been accounted for. When determining this net temperature, it's essential to subtract the ambient temperature from the measurement to isolate the temperature of the gases produced by combustion. By understanding the net stack temperature in this way, gas fitters can assess the efficiency of combustion and ensure proper venting. This value can indicate whether the system is operating effectively and if the gases are being vented safely. It is crucial because too high a net temperature could signal inefficiencies, while too low could lead to condensation in flue systems, which might cause damage or hinder performance. In a properly functioning gas fitting system, using the net stack temperature can help ensure compliance with safety regulations and operational standards essential for both performance and safety. Hence, focusing on the net temperature minus the ambient temperature provides a clear picture of how well an appliance is using its fuel and managing exhaust gases.

3. What should the relief valve for a residential low-pressure hot water boiler system be set to?

- A. 14.7 psia
- B. 15 psia
- C. 30 psig**
- D. 30 psia

The relief valve for a residential low-pressure hot water boiler system is appropriately set to 30 psig because this value allows for safe operation within a residential setting where the typical operating pressure does not exceed this threshold. The purpose of the relief valve is to prevent excessive pressure buildup in the system, which can occur due to overheating or other system failures. Setting the valve at 30 psig ensures that if the pressure surpasses this level, the valve will open and release excess pressure, thereby protecting the integrity of the boiler and the safety of the household. In most residential low-pressure hot water boiler systems, the operating pressure is designed to be below this relief valve setting, which provides a safety margin. It is not common for residential systems to operate at or exceed 30 psig during normal conditions, so the valve serves as an effective safeguard. The other options do not align with standard practices for residential hot water boiler relief valves. A setting of 14.7 psia refers to atmospheric pressure, and a setting of 15 psia would also be below the pressure typically required to safeguard the system. The setting of 30 psia would be inappropriate as it does not account for gauge pressure encountered in these systems. Hence, the 30 ps

4. The pilotstat can be:

- A. A separate valve
- B. An electromagnetic switch or relay
- C. A component of combination control valve
- D. All of the above**

The pilotstat serves multiple functions in gas systems, which is why the correct answer encompasses all options provided. It can indeed be a separate valve, operating independently to manage fluid flow or pressure within the system. Additionally, the pilotstat can function as an electromagnetic switch or relay, enabling it to act upon electrical signals to control other components in the system dynamically. Finally, it can also be an integral part of a combination control valve, where it works in tandem with other controls to ensure efficient operation of gas equipment. This versatility illustrates the pilotstat's importance in managing various operational aspects of gas systems, including safety, efficiency, and functionality, making "all of the above" the most inclusive and accurate choice.

5. If 1 cubic foot of natural gas is 1000 Btuh, what is the ratio of total air?

- A. 10
- B. 15
- C. 5
- D. 30**

To determine the correct ratio of total air when 1 cubic foot of natural gas is equivalent to 1000 Btuh (British thermal units per hour), it's important to understand the stoichiometric combustion of natural gas. For efficient combustion, a specific amount of air is required to fully oxidize the fuel. Natural gas primarily consists of methane (CH₄), which requires approximately 10 parts of air to 1 part of natural gas for complete combustion under ideal conditions. This is a fundamental principle in combustion engineering, reflecting the need for oxygen found in the air to react with the gas to produce carbon dioxide and water. However, considering the approximation for real-world applications, the ratio of air to natural gas can vary based on the conditions and efficiency of the system. The selected answer suggests a more refined operating ratio that accounts for variations in combustion efficiency, excess air necessary for complete combustion, and safety margins in practical scenarios. Given that the choice of 30 represents a need for higher than stoichiometric air to enhance combustion efficiency and safety, this reflects the practical consideration of ensuring that there is enough oxygen for complete combustion of the natural gas used. This makes the ratio of total air to natural gas effectively aligned with standardized practices in gas balance calculations,

6. What would be the approximate purging time for a 1-inch NPS pipe at 100-feet?

- A. 50 seconds
- B. 1 minute
- C. 1 minute, 24 seconds**
- D. 1 minute, 10 seconds

To determine the approximate purging time for a 1-inch NPS (Nominal Pipe Size) pipe that is 100 feet long, it is essential to consider the factors affecting the flow rate of the purging medium and the volume of the pipe. For a 1-inch NPS pipe, the internal diameter is typically about 1.05 inches. The formula for calculating the purging time is based on the volume of the pipe and the speed of the purging method used. The volume of a pipe can be calculated using the formula for the volume of a cylinder, which can then be divided by the flow rate to find the total purge time. In general, purging involves introducing a gas (like nitrogen or air) into the pipeline, which will push out any gas that's already inside. For standard practices, it is often estimated that for this size of pipe and length, with a suitable flow rate, the purging process can take approximately 1 minute and 24 seconds. This estimate takes into account the efficiency of the purge, how well the gas moves through the entire length of the pipeline, and the ambient conditions. Therefore, the time of 1 minute and 24 seconds is a practical estimate that aligns with typical purging

7. At what temperature does the blower fan turn off in a combination limit control?

- A. 100°F**
- B. 200°F
- C. 130°F
- D. 127°F

For a combination limit control, the blower fan is typically designed to turn off at a specific temperature to prevent overheating in heating systems. The correct temperature for a blower fan to deactivate is 100°F. This threshold ensures that the system operates efficiently, protecting the furnace and other components from damage due to excessive heat. While other temperatures might be found in different HVAC systems, 100°F is a common standard for blower operation in combination limit controls, ensuring a safe margin before the air becomes overly hot. This assists in maintaining a balanced environment in the ductwork and helps to extend the life of the heating equipment. Understanding these settings is vital for anyone involved in gas fitting and furnace operation.

8. Which type of vent is not acceptable for use with direct vent appliances?

- A. Single wall vent**
- B. Direct vent pipe
- C. B vent
- D. Type L vent

Direct vent appliances are designed to draw in air from the outside for combustion and to expel exhaust gases back outside, ensuring efficient and safe operation. When it comes to the venting materials used for these appliances, specific types must meet rigorous standards to handle the unique pressures and temperatures involved. Single wall vent systems consist of a single layer of metal that lacks the insulation necessary to maintain safe temperatures and to adequately contain the products of combustion. This can pose a significant safety risk because it may lead to overheating and potential fire hazards when installed with direct vent appliances. Since these appliances require specialized venting to ensure proper balance of air intake and exhaust, single wall venting is not designed for this purpose and is thus considered unacceptable. In contrast, direct vent pipes are specifically engineered to work with direct vent systems, providing an appropriate barrier to ensure safety and efficiency. Similarly, B vent and Type L vent are also acceptable venting options that are intended to handle flue gases under the conditions required for direct vent appliances.

9. If an air conditioning system is added to a heating system, what is recommended?

- A. A smaller blower pulley be installed
- B. A larger blower pulley be installed
- C. A larger motor pulley be installed**
- D. A smaller motor pulley be installed

When adding an air conditioning system to an existing heating system, it is generally recommended to install a larger motor pulley. The reason for this recommendation is based on the need for appropriate airflow and cooling capacity for the air conditioning unit. In heating systems, blower operation is optimized for delivering warm air, which may involve different air volume and pressure requirements compared to cooling systems. By installing a larger motor pulley, the blower will run at a lower RPM (revolutions per minute), allowing for increased airflow needed for efficient cooling. This adjustment ensures that the air conditioning system can effectively circulate cool air throughout the space, improving comfort levels and system performance. The other options would not effectively address the need for increased airflow. For instance, a smaller blower or motor pulley would restrict airflow, which could lead to inefficiencies and insufficient cooling. Therefore, installing a larger motor pulley is a crucial step in maintaining optimal performance when integrating a new air conditioning system with an existing heating system.

10. When venting spillage occurs and flue gases pass back through combustion zones, what change occurs?

- A. Flue gases are hotter and rise faster through chimney
- B. Flue CO₂ gases are more efficient
- C. Flue CO₂ gases change to N₂
- D. Flue CO₂ gases change to CO**

When venting spillage occurs, it indicates that flue gases are not properly exiting the system and instead are mixing back into the combustion zones. In this scenario, the combustion process is disrupted, leading to incomplete combustion of natural gas. This incomplete combustion results in the production of carbon monoxide (CO), a harmful byproduct. The presence of insufficient oxygen during combustion can prevent gases from fully converting to carbon dioxide (CO₂). Consequently, while ideally CO₂ is the primary gas produced during the combustion of hydrocarbons, when venting spillage happens, the combustion is less efficient, leading to an increase in CO production instead. Therefore, it's crucial for gas fitters to ensure that venting is functioning correctly to avoid such dangerous conditions, emphasizing the potential hazards associated with improper venting. This understanding is key for certification and safe practices in gas fitting.

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://gasfitter.examzify.com>

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

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