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

1. **What should be installed if the supply pressure exceeds the working pressure of the water heater tank?**

   A. Pressure Reducing Valve

   B. Expansion Tank

   C. Flow Control Valve

   D. Relief Valve

2. **What must be considered when using a furnace for temporary heat in a residence under construction?**

   A. The furnace can be placed anywhere within the building

   B. The furnace must have venting to the exterior

   C. The furnace must be installed on a finished concrete floor or slab at least 4" thick and 6" larger than the base of the furnace

   D. The furnace should always be elevated

3. **How many inches of W.C. is 0.5 PSIG?**

   A. 10" W.C.

   B. 12" W.C.

   C. 14" W.C.

   D. 16" W.C.

4. **What is the primary configuration of a Fire Tube Boiler?**

   A. Water outside the Tubes and Flue Gases inside

   B. Water inside the Tubes and Steam outside

   C. Steam inside the Tubes and Water outside

   D. Flue Gases inside and Water outside the Tubes

5. **What is a common consequence of improper installation of a gas appliance?**

   A. Reduced energy efficiency

   B. Increased appliance lifespan

   C. Enhanced performance

   D. Decreased fuel consumption

6. The external bypass valve is set by determining the:

A. Pressure Drop across the appliance

B. Flow Rate of the system

C. Temperature Rise across the appliance

D. Efficiency Rating of the system

7. What type of voltage does a Thermopile or Powerpile generate?

A. Volts

B. Hundreds of Millivolts

C. Kilovolts

D. Microvolts

8. A British Thermal Unit (BTU) is defined as the amount of heat required to:

A. Raise the temperature of one gallon of water by one degree Fahrenheit

B. Raise the temperature of one pound of water by one degree Fahrenheit

C. Cool one pound of water by one degree Celsius

D. Heat one pound of air by one degree Fahrenheit

9. What is the purpose of installing a Balancing Valve in a Combo Heating System?

A. Control and Balance the Water Flow through different zones or branches

B. Reduce water pressure

C. Increase heating efficiency

D. Prevent overheating

10. Zero governors are designed to deliver an outlet pressure equal to what?

A. Positive pressure

B. Vacuum pressure

C. Atmospheric pressure

D. High pressure

Answers

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

Explanations

1. What should be installed if the supply pressure exceeds the working pressure of the water heater tank?

A. Pressure Reducing Valve

B. Expansion Tank

C. Flow Control Valve

D. Relief Valve

If the supply pressure exceeds the working pressure of the water heater tank, it is essential to install a pressure reducing valve. The primary function of this device is to lower and regulate the incoming water pressure to a safe and acceptable level that the water heater can handle. Water heaters are designed to operate within a specified pressure range, and exceeding this can lead to damage, inefficiencies, and safety hazards. By using a pressure reducing valve, the water pressure entering the heater is automatically adjusted to ensure it does not exceed the manufacturer's recommended maximum working pressure. This helps protect the integrity of the tank, prevents potential leaks or ruptures, and extends the lifespan of the water heater system. Thus, installing a pressure reducing valve is a crucial step in maintaining system safety and performance.

2. What must be considered when using a furnace for temporary heat in a residence under construction?

A. The furnace can be placed anywhere within the building

B. The furnace must have venting to the exterior

C. The furnace must be installed on a finished concrete floor or slab at least 4" thick and 6" larger than the base of the furnace

D. The furnace should always be elevated

When using a furnace for temporary heat in a residence under construction, it is crucial to follow proper installation procedures to ensure safety and functionality. The requirement for the furnace to be installed on a finished concrete floor or slab that is at least 4 inches thick and 6 inches larger than the base of the furnace is based on several important factors. Firstly, a solid concrete base provides stability for the furnace, minimizing vibrations and ensuring it operates efficiently without risk of tipping or moving during use. This is particularly important in a construction site where there may still be ongoing work, materials moving around, and potential disturbances. Secondly, the thickness of the concrete slab serves as a fire barrier, helping to protect against any heat generated by the furnace potentially igniting construction materials or the surrounding environment. This consideration is essential in a setting where flammable materials are likely to be present. Finally, the dimensional requirements ensure that there is enough space around the furnace, which is crucial for air circulation, maintenance access, and safe operation. Adequate spacing prevents overheating and reduces the risk of fire hazards. Overall, these requirements are designed to promote safety, efficiency, and proper operation of the furnace in a construction environment, making the choice of a sturdy and appropriately-sized foundation a critical consideration

3. How many inches of W.C. is 0.5 PSIG?

A. 10" W.C.

B. 12" W.C.

C. 14" W.C.

D. 16" W.C.

To convert PSIG (pounds per square inch gauge) to inches of water column (W.C.), it's essential to understand the relationship between these two units of pressure. 1 PSIG is approximately equivalent to 27.7 inches of water column. Therefore, to find out how many inches of W.C. correspond to 0.5 PSIG, you would multiply 0.5 by 27.7. Performing the calculation: 0.5 PSIG × 27.7 inches of W.C./PSIG = 13.85 inches of W.C. Rounding this value gives us approximately 14 inches of W.C. Thus, when determining how many inches of water column correspond to 0.5 PSIG, the answer is indeed 14 inches of W.C. which confirms that it is the correct choice. This knowledge is critical in gas technician work to ensure safe and accurate pressure measurements in gas appliances.

4. What is the primary configuration of a Fire Tube Boiler?

A. Water outside the Tubes and Flue Gases inside

B. Water inside the Tubes and Steam outside

C. Steam inside the Tubes and Water outside

D. Flue Gases inside and Water outside the Tubes

The primary configuration of a Fire Tube Boiler features water outside the tubes and flue gases inside. In this design, the combustion gases from the fuel source flow through the tubes, transferring heat to the water surrounding these tubes. This configuration allows for efficient heat exchange, as the hot gases heat the water, producing steam. This design is commonly used in various applications, including commercial and industrial settings, due to its ability to produce steam at relatively low pressures and its relatively simple construction. Water being outside the tubes means that it can effectively absorb heat from the flue gases, which is essential for efficient operation and energy transfer. In contrast, configurations where water is inside the tubes and steam or water is outside do not represent the typical operation of fire tube boilers. Understanding the basic principles of heat transfer in this context is crucial for gas technicians, as it impacts the efficiency and operation of boiler systems.

5. What is a common consequence of improper installation of a gas appliance?

A. Reduced energy efficiency

B. Increased appliance lifespan

C. Enhanced performance

D. Decreased fuel consumption

Improper installation of a gas appliance often leads to reduced energy efficiency. This occurs because a gas appliance that is not correctly set up may not operate optimally, leading to excess fuel consumption and wasted energy. Factors such as incorrect venting, poor connections, and inadequate air supply can hinder the appliance's ability to function as intended. Consequently, this inefficiency not only increases operating costs for the user but can also cause a greater environmental impact due to higher greenhouse gas emissions. In contrast to this, the other choices indicate outcomes that are typically associated with correct installation and operation, rather than the effects of improper setup. Enhanced performance and increased appliance lifespan are benefits that stem from proper installation, which ensures that the appliance operates under ideal conditions. Likewise, decreased fuel consumption is also a result of effective operation, often achieved through proper installation practices that facilitate peak efficiency.

6. The external bypass valve is set by determining the:

A. Pressure Drop across the appliance

B. Flow Rate of the system

C. Temperature Rise across the appliance

D. Efficiency Rating of the system

The external bypass valve is crucial for maintaining appropriate conditions in a gas system. When setting this valve, you need to determine the temperature rise across the appliance. This is essential because the temperature rise indicates how effectively the appliance is operating and whether it is achieving the desired heating effect. By measuring the temperature before and after the appliance, you can ascertain if the bypass valve is set correctly to allow the right amount of flow, ensuring optimal operation and efficiency. In contrast, while factors such as pressure drop and flow rate provide valuable information about the performance and capacity of the system, they do not directly relate to the temperature performance of the appliance in terms of service delivery. Efficiency rating contributes to understanding overall performance but is more a characteristic of the appliance's design and construction rather than a setting for the external bypass valve. Focused on temperature rise reflects the direct impact of the bypass valve's setting on appliance efficiency and operational capabilities.

7. What type of voltage does a Thermopile or Powerpile generate?

A. Volts

B. Hundreds of Millivolts

C. Kilovolts

D. Microvolts

A thermopile or powerpile generates hundreds of millivolts as a result of the thermoelectric effect, which is the conversion of temperature differences directly into electricity. This phenomenon occurs in devices that consist of multiple thermocouples arranged in series or parallel; they are designed to produce a somewhat higher voltage by leveraging the temperature differential across them. In practical applications, such as safety shut-off systems in gas appliances, the output in the hundreds of millivolts range provides sufficient power to operate the necessary components, like safety valves, without requiring additional power sources. This ability to generate usable voltage from heat is vital in ensuring that the safety mechanisms in gas appliances function properly, making them reliable and effective in preventing gas leaks or malfunctions.

8. A British Thermal Unit (BTU) is defined as the amount of heat required to:

A. Raise the temperature of one gallon of water by one degree Fahrenheit

B. Raise the temperature of one pound of water by one degree Fahrenheit

C. Cool one pound of water by one degree Celsius

D. Heat one pound of air by one degree Fahrenheit

A British Thermal Unit (BTU) is officially defined as the amount of heat needed to raise the temperature of one pound of water by one degree Fahrenheit. This specific definition is rooted in fundamental principles of thermodynamics and provides a clear and consistent measurement for energy in heating applications. The BTU is critical for understanding energy transfer in heating systems, and since it pertains specifically to water, a substance with a high specific heat, it serves as a useful baseline for assessing the energy requirements of various heating processes. In practical applications, knowing that raising the temperature of one pound of water requires a specific amount of energy allows technicians to calculate the necessary energy input for heating systems, ensuring they operate efficiently and effectively. While the other answer choices refer to variations of water or air, they do not align with the precise definition and understanding of a BTU in standard thermodynamic terms.

9. What is the purpose of installing a Balancing Valve in a Combo Heating System?

A. Control and Balance the Water Flow through different zones or branches

B. Reduce water pressure

C. Increase heating efficiency

D. Prevent overheating

The purpose of installing a Balancing Valve in a Combo Heating System is primarily to control and balance the water flow through different zones or branches of the system. In a heating system where multiple zones are supplied with hot water, maintaining balance is crucial to ensure that each zone receives the appropriate amount of water flow necessary for proper heating. If one part of the system receives too much water while another receives too little, it can lead to inefficiencies, temperature inconsistencies, and overall poor performance. A Balancing Valve enables technicians to adjust the flow rates in the piping system, making it possible to fine-tune the distribution of heated water. By doing this, the system can operate more effectively, ensuring that all areas reach the desired temperatures efficiently. The adjustment can also help prevent issues such as excessive pressure drops and unwanted noises in the piping, contributing to a more stable and comfortable heating environment. Other options may address aspects related to the heating system but do not capture the primary function of balancing the flow to achieve optimal operation across various zones.

10. Zero governors are designed to deliver an outlet pressure equal to what?

A. Positive pressure

B. Vacuum pressure

C. Atmospheric pressure

D. High pressure

Zero governors are specifically designed to maintain an outlet pressure that is equal to atmospheric pressure. This type of governor is commonly used in systems where the objective is to stabilize and control gas flow without increasing the pressure above the surrounding atmospheric level. In practical applications, zero governors allow for the precise handling of gases in situations where it is crucial that the outlet pressure remains consistent with atmospheric conditions, such as in venting operations or when connecting to an appliance that requires a specific pressure to function correctly. Understanding that zero governors operate at atmospheric pressure aids gas technicians in properly selecting and applying these devices in various gas transport and control systems, ensuring safety and operational efficiency.

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://gastechnician2.examzify.com

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