

Technical Standards and Safety Authority (TSSA) G3 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 is a gas fitting system?**
 - A. A system of electrical wires**
 - B. A system of pipes and fittings for gas conveyance**
 - C. A method of gas metering**
 - D. A type of plumbing installation**
- 2. What role does a sediment trap serve in gas piping?**
 - A. It reduces gas flow to appliances**
 - B. It collects moisture and debris to prevent appliance malfunctions**
 - C. It enhances the appearance of gas lines**
 - D. It regulates the pressure within the gas piping**
- 3. In the absence of a readily accessible burner, an appliance not equipped with a continuous pilot shall be purged in accordance with:**
 - A. Annex H of the B149.1-05 code**
 - B. The manufacturer's instructions**
 - C. Appendix A of the B149.2-05 code**
 - D. The local distributors procedures**
- 4. The heat content of 1 cubic foot of natural gas is approximately:**
 - A. 1,000 Btu**
 - B. 2,520 Btu**
 - C. 10,000 Btu**
 - D. 25,000 Btu**
- 5. Which unit is used to express the area of an air supply opening?**
 - A. Square inches**
 - B. Cubic feet**
 - C. Centimeters**
 - D. Pints**

- 6. Atmospheric burners are designed to operate under:**
- A. Normal atmospheric pressure with low gas pressure**
 - B. High air pressure with low gas pressure**
 - C. Atmospheric pressure with high gas pressure**
 - D. Compressed air pressure with high gas pressure**
- 7. Resistance is measured in which of the following units?**
- A. Volts**
 - B. Amps**
 - C. Ohms**
 - D. Watts**
- 8. Define "downstream" in the context of gas supply systems.**
- A. It refers to the area before gas appliances**
 - B. It refers to the portion of the gas supply system after the control valves and regulators**
 - C. It refers to the supply of gas from the main line**
 - D. It refers to the pipe connections of gas appliances**
- 9. What is the significance of the National Fuel Gas Code (NFPA 54)?**
- A. It regulates the price of gas**
 - B. It provides safety guidelines for the installation and maintenance of gas systems and appliances**
 - C. It specifies the types of gas that can be used**
 - D. It sets the standards for gas appliance manufacturing**
- 10. Which of the following materials is NOT suitable for use as gasket material in a gas system?**
- A. Cork**
 - B. Neoprene**
 - C. Natural rubber**
 - D. Fiberglass**

Answers

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

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Explanations

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1. What is a gas fitting system?

- A. A system of electrical wires
- B. A system of pipes and fittings for gas conveyance**
- C. A method of gas metering
- D. A type of plumbing installation

A gas fitting system is specifically designed to transport gas from its source to various appliances within a building or facility. This system consists of a network of pipes and fittings that safely convey gases, such as natural gas or propane, to ensure proper delivery and functioning of gas-powered equipment. The construction and installation of these pipes must comply with local codes and standards to ensure safety and efficiency, as improper installation can lead to gas leaks or other hazards. In contrast, options that describe electrical wiring, methods of gas metering, or generic plumbing installations are not aligned with the specific purpose of a gas fitting system. A gas fitting system is focused solely on the conveyance of gas, which differentiates it from electrical systems or plumbing that deal primarily with water drainage or delivery. Therefore, understanding the distinct role of gas fitting in infrastructure is essential for recognizing its importance in safety and compliance within gas utilization.

2. What role does a sediment trap serve in gas piping?

- A. It reduces gas flow to appliances
- B. It collects moisture and debris to prevent appliance malfunctions**
- C. It enhances the appearance of gas lines
- D. It regulates the pressure within the gas piping

A sediment trap plays a critical role in gas piping by collecting moisture and debris that may accumulate within the system. Over time, natural gas can carry water vapor, dust, and other particulates from the supply line. If these contaminants were to reach gas appliances, they could lead to malfunctions, reduced efficiency, or potentially hazardous situations. By trapping this sediment before it reaches the appliance, the sediment trap ensures that the gas supply remains clean, which contributes to the safe and reliable operation of gas appliances. This maintenance of clean gas flow is vital for the longevity and performance of heating systems, stoves, and other equipment that relies on gas. The other options do not accurately describe the function of a sediment trap. For example, it does not reduce gas flow, enhance the aesthetic quality of gas lines, or regulate pressure; these functions are managed by other components of the gas piping system.

3. In the absence of a readily accessible burner, an appliance not equipped with a continuous pilot shall be purged in accordance with:

A. Annex H of the B149.1-05 code

B. The manufacturer's instructions

C. Appendix A of the B149.2-05 code

D. The local distributors procedures

Choosing to purge an appliance that is not equipped with a continuous pilot in accordance with Annex H of the B149.1-05 code is the correct approach because this section specifically outlines the safe procedures for purging gas appliances. Purging involves removing air or combustible gas from the piping system prior to lighting or using the appliance again, ensuring safety by preventing explosions or fires. Annex H provides detailed guidance on the requirements and procedures that should be followed to ensure that the appliance is safe to operate, especially when a burner is not readily accessible. This ensures compliance with safety standards and mitigates risks associated with gas leaks. While the manufacturer's instructions could provide relevant information, they may not always cover the broader safety standards required for purging, which are specifically encompassed within the B149.1-05 code. Meanwhile, Appendix A of the B149.2-05 code primarily deals with the installation requirements for venting systems rather than purging gas appliances. Local distributor procedures might vary and may not be based on the rigorous standards set forth by established codes. Therefore, relying on the comprehensive guidance found in Annex H ensures adherence to the recognized safety protocols.

4. The heat content of 1 cubic foot of natural gas is approximately:

A. 1,000 Btu

B. 2,520 Btu

C. 10,000 Btu

D. 25,000 Btu

The heat content of natural gas is commonly understood through its energy value, which is measured in British thermal units (Btu). Typically, the approximate heat content of 1 cubic foot of natural gas ranges around 1,000 Btu. This figure can vary somewhat based on the specific composition of the natural gas, but 1,000 Btu is widely accepted as a standard reference point for general calculations and conversions in the industry. This value is crucial for applications involving heating and combustion processes, as it helps in estimating energy needs for equipment and systems using natural gas as fuel. Options presenting values significantly higher than 1,000 Btu, such as 2,520, 10,000, and 25,000 Btu, exceed the typical heat content per cubic foot and would not align with standard practice in the natural gas sector for estimating energy content.

5. Which unit is used to express the area of an air supply opening?

A. Square inches

B. Cubic feet

C. Centimeters

D. Pints

The area of an air supply opening is measured in square inches, as this unit specifically quantifies the two-dimensional surface area of the opening. By using square inches, one can effectively gauge how large the opening is in relation to air flow dynamics, which is critical for ensuring adequate ventilation and combustion efficiency in various applications. The other units provided do not appropriately convey the concept of area. Cubic feet measures volume, which would be relevant for airflow but not for the dimensional measurement of an opening. Centimeters, while a unit of length, do not denote area unless expressed in square centimeters, which is not one of the options. Pints are a unit of volume, typically used for liquids, and are not applicable when discussing the area of any openings. Therefore, square inches is the most suitable unit for this measurement.

6. Atmospheric burners are designed to operate under:

A. Normal atmospheric pressure with low gas pressure

B. High air pressure with low gas pressure

C. Atmospheric pressure with high gas pressure

D. Compressed air pressure with high gas pressure

Atmospheric burners are specifically engineered to function efficiently at normal atmospheric pressure. This design allows these burners to utilize the natural upward movement of heated gases, combining air and gas for combustion without the need for mechanical assistance in drawing air into the burner. The low gas pressure is crucial; it ensures that the gas is introduced into the combustion zone in a controlled manner, allowing for stable and efficient burning under standard air pressure conditions. This combination is important because it enables the burner to operate safely and effectively in various residential and commercial applications where such conditions are prevalent. The other options introduce conditions that either exceed or improperly specify the operational boundaries of atmospheric burners, making them unsuitable for such burner types. High air pressure or compressed air would require different systems, such as forced draft burners, which are not compatible with the atmospheric burner design.

7. Resistance is measured in which of the following units?

- A. Volts**
- B. Amps**
- C. Ohms**
- D. Watts**

Resistance is measured in Ohms, which is the SI unit for electrical resistance. This unit is denoted by the symbol " Ω ." The concept of resistance refers to the opposition that a substance offers to the flow of electric current. According to Ohm's Law, resistance (R) is defined as the voltage (V) across a conductor divided by the current (I) flowing through it ($R = V/I$). The other units mentioned serve different purposes: Volts measure electrical potential difference, Amps (or amperes) measure the flow of electric current, and Watts denote the rate of electrical power consumption. Understanding the distinct roles of these units is crucial in the context of electrical circuits and safety standards, as each measures a different characteristic of electricity. Therefore, recognizing that resistance specifically pertains to Ohms is essential for anyone working with electrical systems.

8. Define "downstream" in the context of gas supply systems.

- A. It refers to the area before gas appliances**
- B. It refers to the portion of the gas supply system after the control valves and regulators**
- C. It refers to the supply of gas from the main line**
- D. It refers to the pipe connections of gas appliances**

The term "downstream" in the context of gas supply systems refers specifically to the portion of the gas supply system that occurs after the control valves and regulators. This is the section where the gas has already been regulated and is ready to be delivered to the appliances that utilize it. When gas is supplied through a system, it generally begins at the main supply line, where it is under high pressure. The control valves and regulators serve to manage this pressure, ensuring that the gas is at the appropriate levels for safe use. Once the gas has passed through these mechanisms, it is considered to be "downstream." Understanding this distinction is important for safety and operational efficiency in gas supply systems, as it helps technicians and professionals to identify where certain components are located and how they interact within the overall system.

9. What is the significance of the National Fuel Gas Code (NFPA 54)?

- A. It regulates the price of gas**
- B. It provides safety guidelines for the installation and maintenance of gas systems and appliances**
- C. It specifies the types of gas that can be used**
- D. It sets the standards for gas appliance manufacturing**

The National Fuel Gas Code (NFPA 54) is vital because it establishes safety guidelines for the installation and maintenance of gas systems and appliances. This framework ensures that installations are conducted safely to prevent hazards such as gas leaks, explosions, or carbon monoxide poisoning. The code addresses the design, construction, installation, and operation of fuel gas systems, fostering a standardized approach that promotes safety throughout the industry. While it is true that other aspects regarding gas, such as pricing and types of gas, are important in the gas utility sector, they do not fall under the primary scope of the NFPA 54. The code is specifically focused on safety standards and practices to mitigate risks associated with gas usage in residential, commercial, and industrial settings. Additionally, although there are manufacturing standards for gas appliances, those are generally covered by separate regulations and codes aimed explicitly at manufacturers rather than installation and safety practices.

10. Which of the following materials is NOT suitable for use as gasket material in a gas system?

- A. Cork**
- B. Neoprene**
- C. Natural rubber**
- D. Fiberglass**

The selection of suitable gasket materials for gas systems is crucial, as these materials must withstand exposure to various gases, pressure, and temperature fluctuations without degrading or compromising the system's integrity. Fiberglass is a composite material primarily designed for structural applications rather than for sealing purposes. It can be brittle and does not provide the necessary flexibility and compression that gaskets require to create a proper seal in a gas system. Additionally, fiberglass lacks the chemical resistance that other gasket materials possess, which makes it unsuitable for environments that contain gases or chemicals that could attack or degrade the material. In contrast, cork, neoprene, and natural rubber possess properties that allow them to effectively compress and conform to sealing surfaces, ensuring a tight seal. These materials also demonstrate adequate resistance to the conditions typically found in gas systems, making them appropriate choices for gasket applications.

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://tssa-g3.examzify.com>

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