Technical Standards and Safety Authority (TSSA) G2 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. Don't worry about getting everything right, 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, and take breaks to retain information better.

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.

7. Use Other Tools

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. **When two 10 ohm resistors are connected in series, what is the net result?**

   A. 0 ohms

   B. 5 ohms

   C. 10 ohms

   D. 20 ohms

2. **The majority of the heat loss in a house on average is through the?**

   A. Attic

   B. Walls

   C. Basement floor

   D. Windows

3. **Which component is crucial for preventing backflow in boiler systems?**

   A. Drain trap

   B. Crossover line

   C. Backflow preventer

   D. Expansion tank

4. **What component is wired in series with the high temperature limit switch in a conventional residential furnace?**

   A. Fan motor

   B. Manual fan switch

   C. Gas valve

   D. Summer/winter switch

5. **If you had a commercial air handler, what would be the rpm of the blower with specific pulley dimensions given?**

   A. 3450 rpm

   B. 2070 rpm

   C. 1725 rpm

   D. 863 rpm

6. What type of room heater may be installed in a bathroom?

A. Natural draft

B. Direct fired

C. Forced draft

D. Direct vent

7. What does a spiral baffle do?

A. Remove flue gas

B. Speed up combustion

C. Slow flue gas

D. Raises flue temperature

8. When two 10 ohm resistors are connected in parallel, what is the net result?

A. 0 ohms

B. 5 ohms

C. 10 ohms

D. 20 ohms

9. How often should disposable filters be cleaned before replacing them?

A. One time

B. Two times

C. Three times

D. Never

10. The relief valve for a low pressure steam system should be set at:

A. 14.7 psia

B. 15 psig

C. 30 psia

D. 30 psig.

Answers

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

Explanations

1. When two 10 ohm resistors are connected in series, what is the net result?

A. 0 ohms

B. 5 ohms

C. 10 ohms

D. 20 ohms

When two resistors are connected in series, the total or net resistance can be calculated by simply adding the individual resistances together. In this case, both resistors have a resistance of 10 ohms. Therefore, when they are connected in series, the net resistance is: 10 ohms + 10 ohms = 20 ohms. This summation occurs because the current flowing through each resistor must pass through each one sequentially, so the resistance of both adds up. In a series circuit, the overall resistance increases with each additional resistor connected in the same manner, leading to an increase of the total resistance. This principle is fundamental in understanding how resistors work in series configurations.

2. The majority of the heat loss in a house on average is through the?

A. Attic

B. Walls

C. Basement floor

D. Windows

The correct choice highlights that, on average, the majority of heat loss in a house occurs through the walls. This is significant because walls, which have a large surface area relative to other components of a house, typically have less insulation compared to attics and may also have more thermal bridging due to studs and other structural materials. Heat can be lost through the walls as they are often not as tightly sealed or insulated as attics or windows, depending on the design and construction characteristics of the building. In many residential constructions, the insulation in the walls can be less effective at preventing heat flow than that found in the attic space, especially if there are gaps or if the insulation is not installed properly. Furthermore, walls are exposed to the external environment on both sides, which increases the potential for heat loss. Understanding the pathways of heat loss facilitates better decision-making regarding energy efficiency improvements in homes.

3. Which component is crucial for preventing backflow in boiler systems?

A. Drain trap

B. Crossover line

C. Backflow preventer

D. Expansion tank

The component crucial for preventing backflow in boiler systems is the backflow preventer. This device is specifically designed to protect potable water supplies from contamination due to reverse flow of water. In boiler systems, backflow can occur when there are sudden changes in pressure, potentially allowing heated water or contaminants from the boiler to flow back into the drinking water supply. The backflow preventer ensures that water can only flow in one direction, maintaining the integrity of the water system and safeguarding against possible contamination. Understanding the function of a backflow preventer is important for anyone dealing with heating systems, as it plays a key role in ensuring compliance with safety regulations and maintaining public health standards.

4. What component is wired in series with the high temperature limit switch in a conventional residential furnace?

A. Fan motor

B. Manual fan switch

C. Gas valve

D. Summer/winter switch

In a conventional residential furnace, the component wired in series with the high temperature limit switch is the gas valve. This is because the high temperature limit switch serves as a safety device that monitors the temperature within the furnace. If the temperature exceeds a predetermined limit, the switch opens and interrupts the electrical circuit to the gas valve, effectively shutting off the flow of gas to the burners. This action prevents overheating and potential damage to the furnace, ensuring safe operation. The gas valve must receive power in order to open for gas flow; thus, its operation is directly dependent on the state of the high temperature limit switch. If the limit switch is tripped due to excessive heat, the gas valve is de-energized, preventing further gas from being released and enhancing overall safety. This sequence is crucial in maintaining the furnace's safe functioning during operation.

5. If you had a commercial air handler, what would be the rpm of the blower with specific pulley dimensions given?

A. 3450 rpm

B. 2070 rpm

C. 1725 rpm

D. 863 rpm

The correct answer is based on the standard operating speeds for commercial air handlers and the specific details of the blower and pulley system in the given scenario. In commercial applications, blowers are often driven by motors that operate at different speeds depending on the pulley sizes and configurations used. The 2070 rpm value is typically associated with systems that involve a reduction from a standard motor speed of 3450 rpm. When the pulley ratio is designed correctly based on the dimensions, it adjusts the speed of the blower to deliver optimal airflow and efficiency for an air handling unit. Calculating the blower speed relies on understanding the relationship between the motor speed and the pulley diameters. The formula for calculating the blower speed involves the ratio of the diameters of the drive and driven pulleys, which allows for precise tuning of the air handler performance. In this case, the pulley dimensions likely indicate a setup that optimally achieves 2070 rpm for effective air delivery and pressure requirements in a commercial setting. This speed is also typical for applications that balance efficiency and noise levels while providing adequate air movement, making it suitable for HVAC systems designed for comfort and performance in commercial environments.

6. What type of room heater may be installed in a bathroom?

A. Natural draft

B. Direct fired

C. Forced draft

D. Direct vent

In bathrooms, safety and proper ventilation are essential due to the increased risk of moisture and the potential for explosive gases in confined spaces. A direct-fired heater typically involves combustion occurring directly in the heated space, which is not recommended due to safety hazards associated with gas appliances, especially in high-moisture environments. The correct type of room heater for a bathroom would typically be a direct vent heater. Direct vent heaters are designed to draw air for combustion from outside the building while venting the combustion gases outside, which makes them safe for use in small and enclosed areas like bathrooms. This setup helps maintain the indoor air quality and reduces the risk of harmful gas accumulation, aligning with safety standards governing the installation of heating appliances in residential settings. Natural draft, forced draft, and other types of heaters could introduce risks associated with venting or by their operational characteristics that are not suitable for a bathroom environment. Therefore, the best choice for bathroom installation, focusing on ventilation and safety, would be a direct vent heater.

7. What does a spiral baffle do?

A. Remove flue gas

B. Speed up combustion

C. Slow flue gas

D. Raises flue temperature

A spiral baffle is designed primarily to slow down the flow of flue gases. By creating a series of obstacles in the path of the gases, the baffle increases the residence time of the flue gases within the system. This extended interaction allows for more efficient heat exchange between the flue gases and the surrounding surfaces, optimizing performance in heating applications. The design of the spiral baffle encourages the gases to travel a longer, more winding path, which enhances the heat transfer process, ensuring that more heat is extracted from the gases before they exit the system. This setup can lead to better efficiency and lower emissions, as it promotes complete combustion and better thermal management. Consequently, while other options may relate to aspects of combustion systems, such as flue gas removal or temperature control, the primary function of a spiral baffle is specifically to moderate the speed of flue gases, making option C the most accurate choice in this context.

8. When two 10 ohm resistors are connected in parallel, what is the net result?

A. 0 ohms

B. 5 ohms

C. 10 ohms

D. 20 ohms

When two resistors are connected in parallel, the total or equivalent resistance can be calculated using the formula: 1/R_total = 1/R1 + 1/R2 In this case, both resistors have the same resistance value of 10 ohms. Plugging these values into the formula gives: 1/R_total = 1/10 + 1/10 1/R_total = 2/10 1/R_total = 1/5 To find the equivalent resistance, take the reciprocal of both sides: R_total = 5 ohms. This result shows that when two 10 ohm resistors are connected in parallel, the net resistance decreases, leading to an equivalent resistance of 5 ohms. The parallel configuration reduces the effective resistance compared to that of a single resistor, as the current paths are multiplied, allowing for higher current flow overall.

9. How often should disposable filters be cleaned before replacing them?

A. One time

B. Two times

C. Three times

D. Never

Disposable filters are designed for one-time use and are not intended to be cleaned or reused. Their construction and material composition do not support cleaning without compromising effectiveness. Cleaning a disposable filter may not remove all contaminants and could lead to reduced airflow, less effective filtration, and potential equipment damage. Therefore, when a disposable filter becomes dirty or clogged, it should be replaced rather than cleaned. This ensures that the filtration system operates efficiently, maintaining air quality and system performance. Proper maintenance practices dictate that regular checks be made, and filters should be replaced in accordance with the manufacturer's specifications or service intervals.

10. The relief valve for a low pressure steam system should be set at:

A. 14.7 psia

B. 15 psig

C. 30 psia

D. 30 psig.

In a low pressure steam system, the relief valve is a crucial safety device designed to protect the system from excessive pressure. The correct setting for a relief valve in this context is typically at or slightly above the system's operating pressure to ensure safe operation. The setting of 15 psig is appropriate for low pressure steam systems because it aligns with industry standards that define low pressure steam as operating typically below 15 psig. This ensures that the relief valve will open to prevent pressure from exceeding a safe threshold, thereby preventing potential hazards such as equipment damage or failure. Options like 14.7 psia or 30 psia represent pressures that don't align with the standard operating range for low pressure systems. Setting the relief valve at 30 psig would be unnecessarily high for low pressure applications, risking the system's safety by allowing pressures to reach levels that could cause damage before the valve activates. Therefore, 15 psig is the optimal choice for maintaining safety and operational integrity in low pressure steam systems.

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://tssag2.examzify.com

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