

HVAC CONTRACTOR PRACTICE EXAM (SAMPLE)

STUDY GUIDE



**SAMPLE STUDY GUIDE
WITH LIMITED QUESTIONS**

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THE FULL VERSION STUDY GUIDE**

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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. What is a significant factor that can lead to a gas furnace's ignition failure?**
 - A. Too much airflow
 - B. Lack of gas supply
 - C. Excessive insulation
 - D. Inadequate duct size

- 2. What is the minimum gauge required for a 12" galvanized steel connector used to connect a low heat appliance?**
 - A. .019
 - B. .029
 - C. .034
 - D. .2

- 3. What energy-saving function does a setback thermostat perform?**
 - A. Lower temperatures when the building is occupied
 - B. Adjust temperatures based on weather forecasts
 - C. Lower temperatures during unoccupied periods
 - D. Maintain high heating levels during the night

- 4. This device uses a thermal sensing bulb at the outlet of the evaporator to sense temperature and control superheat.**
 - A. Automatic expansion valve
 - B. Thermostatic expansion valve
 - C. Low side float
 - D. Schraeder valve

- 5. In general, soldering alloys melt at what temperature?**
 - A. 1250 degrees F
 - B. 112 degrees F
 - C. 800 degrees F
 - D. 500 degrees F

6. A company is contracted to construct and deliver a product by March 1st. The items do not arrive until March 2nd. What type of contract violation would this be?
- A. Whole breach
 - B. Immaterial breach
 - C. Negative breach
 - D. Material breach
7. Any individual who performs maintenance, service, or repair that could lead to the release of class 1 or class 2 refrigerants is classified as what?
- A. Maintenance personnel
 - B. Technician
 - C. Business owner
 - D. Contractor
8. What is the correct calculation for net summer heat gain through an exterior wall if the closest answer is 115 btuh?
- A. 115 btuh
 - B. 338 btuh
 - C. 326 btuh
 - D. 1234 btuh
9. Which refrigerant group should not be soldered by a technician?
- A. A1
 - B. A2
 - C. B2
 - D. B and C
10. What is the primary problem caused by air velocity, according to industry standards?
- A. Draft
 - B. Quantity
 - C. Noise
 - D. Flow

Answers

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

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Explanations

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1. What is a significant factor that can lead to a gas furnace's ignition failure?

- A. Too much airflow
- B. Lack of gas supply**
- C. Excessive insulation
- D. Inadequate duct size

A significant factor that can lead to a gas furnace's ignition failure is a lack of gas supply. For a gas furnace to ignite and operate properly, it requires a constant and sufficient supply of gas. When there is an interruption in the gas line, an insufficient gas flow, or if the gas supply is shut off for any reason, the furnace will not be able to ignite. This lack of fuel means that even if the ignition components are functioning correctly, the furnace cannot produce combustion, leading to ignition failure. In this context, factors like too much airflow or inadequate duct size pertain more to the airflow and circulation within the HVAC system rather than the ignition process of the furnace itself. Excessive insulation could affect the system's efficiency but does not directly impact the ignition mechanism of a gas furnace. Thus, ensuring an adequate gas supply is crucial for the operation and ignition of the furnace.

2. What is the minimum gauge required for a 12" galvanized steel connector used to connect a low heat appliance?

- A. .019
- B. .029**
- C. .034
- D. .2

For a 12" galvanized steel connector that is used to connect a low heat appliance, the minimum gauge required is .029 inches. This thickness ensures that the connector can handle the stress and thermal considerations involved with low heat applications while maintaining structural integrity and safety. The choice of .029 inches aligns with industry standards that dictate the minimum material requirements for specific applications. The gauge is particularly important because it directly relates to the strength, durability, and ability of the connector to withstand the potential expansion and contraction caused by changes in temperature. In contrast, other thicknesses listed do not meet the minimum requirements or exceed what is generally necessary for this particular application, making .029 the most suitable choice for a 12" galvanized steel connector used in low heat applications.

3. What energy-saving function does a setback thermostat perform?

- A. Lower temperatures when the building is occupied
- B. Adjust temperatures based on weather forecasts
- C. Lower temperatures during unoccupied periods**
- D. Maintain high heating levels during the night

A setback thermostat is designed to reduce energy consumption by lowering the temperature of a building during times when it is unoccupied, such as at night or during working hours when no one is present. The primary purpose of this function is to avoid unnecessary heating or cooling in spaces that are not in use, which can lead to significant energy savings over time. When the building is unoccupied, the thermostat can be set to a lower temperature in the winter or a higher temperature in the summer. This means that the HVAC system does not have to work as hard to maintain a comfortable temperature in an empty building, thereby reducing energy costs. This energy-saving feature aligns with the principles of energy efficiency, where adjusting environmental control settings based on occupancy helps minimize waste and lowers utility bills without sacrificing comfort when the space is in use.

4. This device uses a thermal sensing bulb at the outlet of the evaporator to sense temperature and control superheat.

- A. Automatic expansion valve
- B. Thermostatic expansion valve**
- C. Low side float
- D. Schraeder valve

The thermostatic expansion valve (TXV) is designed to control the flow of refrigerant in an HVAC system based on the temperature of the vapor returning from the evaporator. It utilizes a thermal sensing bulb placed at the outlet of the evaporator to monitor the temperature of the refrigerant. This sensor is crucial because it allows the TXV to adjust the amount of refrigerant flowing into the evaporator, thus controlling the superheat. Superheat is the difference between the actual temperature of the refrigerant vapor and its saturation temperature at the corresponding pressure. Controlling superheat is essential for an efficient and safe HVAC operation; too little superheat can result in liquid refrigerant entering the compressor, while too much can indicate insufficient refrigerant flow and result in reduced cooling capacity. By sensing the temperature at the outlet and controlling the refrigerant flow accordingly, the thermostatic expansion valve ensures optimal performance of the cooling system, enhancing efficiency and preventing potential damage. The other devices mentioned do not utilize a thermal sensing bulb to control superheat in the same manner, making the TXV the correct choice.

5. In general, soldering alloys melt at what temperature?

- A. 1250 degrees F
- B. 112 degrees F
- C. 800 degrees F**
- D. 500 degrees F

Soldering alloys are primarily used to join metal components together in various applications, including HVAC, plumbing, and electronics. The melting point of these alloys can vary depending on their composition, but most common soldering alloys have melting points in the range of approximately 350 to 800 degrees Fahrenheit. The correct answer, which is 800 degrees Fahrenheit, aligns with the typical melting temperature for many lead-based and lead-free solder alloys used in HVAC applications. For example, common tin-lead solders melt around 361 to 420 degrees Fahrenheit, while lead-free solders often have slightly higher melting points that can be in the range of 500 to 800 degrees Fahrenheit. Recognizing the melting point is crucial when performing soldering tasks to ensure proper joining of components without damaging sensitive materials. The other temperatures listed, such as 1250 degrees F, 112 degrees F, and 500 degrees F, do not accurately reflect the melting points for common soldering alloys. For example, 1250 degrees Fahrenheit would typically pertain to certain high-temperature metals or applications, while 112 degrees Fahrenheit is far too low for any practical soldering material, and 500 degrees Fahrenheit, while closer, may not encompass many of the commonly used soldering

6. A company is contracted to construct and deliver a product by March 1st. The items do not arrive until March 2nd. What type of contract violation would this be?

- A. Whole breach
- B. Immaterial breach**
- C. Negative breach
- D. Material breach

The situation describes a scenario where the delivery of the contracted items occurred just one day late, which can vary in impact depending on the specifics of the agreement and the context in which it operates. A material breach refers to a situation where one party fails to perform a duty that goes to the essence of the contract, potentially causing significant injury or harm to the other party. An immaterial breach, on the other hand, involves a minor violation that does not affect the overall importance or core purpose of the agreement. Considering the scenario, since the items arrived only one day late, it is likely that this delay does not substantially undermine the purpose of the contract. An immaterial breach suggests that the terms of the agreement were generally fulfilled despite the minor delay. Thus, the late delivery does not significantly affect the overall contractual intentions or outcomes, leading to the conclusion that this violation would be categorized as an immaterial breach rather than a material or whole breach, which would have more severe implications regarding the performance of the contract.

7. Any individual who performs maintenance, service, or repair that could lead to the release of class 1 or class 2 refrigerants is classified as what?

- A. Maintenance personnel
- B. Technician**
- C. Business owner
- D. Contractor

The classification of "Technician" is correct because it specifically refers to individuals who possess the skills and training necessary to handle refrigerants safely and effectively. Technicians are responsible for performing maintenance, servicing, or repairing HVAC systems where the risk of releasing class 1 or class 2 refrigerants is present. This role requires a thorough understanding of refrigerant properties, handling guidelines, and applicable regulations, such as those set forth by the Environmental Protection Agency (EPA). In HVAC practice, technicians are typically certified and educated on best practices for minimizing refrigerant release, which is crucial for environmental protection and compliance with industry standards. This includes knowledge about recovery techniques and safe service procedures that help prevent leaks that could harm the atmosphere. Other roles mentioned, such as maintenance personnel, business owners, or contractors, might have various responsibilities within the HVAC industry but do not explicitly emphasize the specialized training and regulatory knowledge required to handle refrigerants directly. Thus, while they might be involved in some aspects of HVAC work, they don't fit the specific definition that pertains to the regulatory context of refrigerant management.

8. What is the correct calculation for net summer heat gain through an exterior wall if the closest answer is 115 btuh?

- A. 115 btuh**
- B. 338 btuh
- C. 326 btuh
- D. 1234 btuh

The calculation for net summer heat gain through an exterior wall is essential in determining how much heat an HVAC system will need to offset during the cooling season. In this case, the correct value of 115 btuh suggests that the assessment of various factors, such as solar radiation, wall insulation, wall orientation, and any shading effects, have been taken into account to derive this figure. The process typically involves calculating the total heat transfer through the wall, considering the heat gain due to conduction, convection, and radiation. This value would then reflect the realistic conditions encountered in a summer cooling scenario, where direct sunlight contributes significantly to heat gain. Selecting the right value is crucial for proper HVAC system sizing and energy efficiency. A value like 115 btuh indicates that the heat gain has been effectively calculated within acceptable ranges for typical residential or commercial applications, ensuring that the HVAC system can adequately maintain comfortable indoor conditions despite the external heat load.

9. Which refrigerant group should not be soldered by a technician?

- A. A1
- B. A2
- C. B2
- D. B and C**

In HVAC applications, certain refrigerants are classified into groups based on their properties and characteristics, including their flammability and toxicity. The refrigerant classifications are designed to help technicians understand how to handle these materials safely. Group A1 includes non-flammable refrigerants, making it safe for technicians to solder components without concern for fire hazards. Therefore, there is no restriction on soldering when dealing with A1 refrigerants. In contrast, groups A2 and B2 contain refrigerants that are either flammable or have a higher toxicity risk. Soldering or using open flames around these refrigerants poses a significant risk because the heat can ignite flammable gases, leading to hazardous conditions. Moreover, group B includes refrigerants that are toxic, which also raises concerns when working with soldering equipment. Hence, for technicians handling any refrigerants classified under groups A2 or B2, employing soldering is not advisable due to safety risks associated with flammability and toxicity. Thus, the recommendation for technicians to avoid soldering when dealing with groups B and C reflects a critical emphasis on safety in HVAC practices, ensuring that refrigerants are handled according to their respective risk levels.

10. What is the primary problem caused by air velocity, according to industry standards?

- A. Draft
- B. Quantity
- C. Noise**
- D. Flow

The primary problem caused by air velocity, according to industry standards, is noise. High air velocity within an HVAC system can lead to excessive sound levels, which may be disruptive to occupants in a building. When air moves quickly through ducts, it generates turbulence, leading to noise that can vary in pitch and intensity. This is particularly critical in environments where comfort and concentration are important, such as in office spaces, classrooms, or residential areas. Controlling air velocity is essential not only for maintaining comfort but also for ensuring that the HVAC system operates within acceptable noise levels as specified by industry guidelines. By addressing issues related to noise caused by high air velocity, HVAC professionals can design systems that provide better acoustic comfort, enhancing the overall experience for the building's occupants. This aspect underscores the importance of balancing performance with user comfort in HVAC design.

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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://hvaccontractor.examzify.com>

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

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