

Arizona R-39/CR-39 Residential and Commercial Air Conditioning and Refrigeration HVAC Contractor 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

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- 1. Should mechanical ventilation be provided for areas with flammable vapors?**
 - A. Yes**
 - B. No**
 - C. Only if local codes require it**
 - D. Only in commercial applications**

- 2. True or False: Clothes dryer exhaust systems must be independent from other ventilation systems.**
 - A. True**
 - B. False**
 - C. Only if installed in basements**
 - D. Depends on building codes**

- 3. What must be true about mechanical intakes in relation to hazardous sources?**
 - A. They must be within 5 feet**
 - B. They must be 10 feet horizontally away**
 - C. They must be 20 feet away**
 - D. They can be adjacent with proper filtration**

- 4. What is the required installation location for equipment with parts that exceed 100 hp?**
 - A. In residential areas**
 - B. In a garage**
 - C. Outside or in machinery rooms**
 - D. In attics**

- 5. Is excess air considered combustion air?**
 - A. True**
 - B. False**
 - C. Only in limited cases**
 - D. Depends on the source**

- 6. How many feet must any intake openings be from lot lines?**
- A. 5 feet**
 - B. 10 feet**
 - C. 15 feet**
 - D. 20 feet**
- 7. How does a compressor achieve positive displacement?**
- A. By increasing the pressure directly**
 - B. By decreasing the volume of the system**
 - C. By changing the internal volume of the compression chamber**
 - D. By cooling the compressor coils**
- 8. True or False: Ducts can be attached to a wall furnace.**
- A. True**
 - B. False**
 - C. Only if specific materials are used**
 - D. Only for specific installations**
- 9. What is the minimum distance that vent termination can be located from an interior corner?**
- A. 2 feet**
 - B. 3 feet**
 - C. 4 feet**
 - D. 5 feet**
- 10. What is the flash point benchmark for Class IIIB liquids?**
- A. 140°F**
 - B. 160°F**
 - C. 200°F**
 - D. 220°F**

Answers

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

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Explanations

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1. Should mechanical ventilation be provided for areas with flammable vapors?

- A. Yes**
- B. No**
- C. Only if local codes require it**
- D. Only in commercial applications**

Providing mechanical ventilation in areas with flammable vapors is critical for ensuring safety and minimizing the risk of fire or explosion. Flammable vapors can accumulate in enclosed spaces, creating hazardous conditions that pose a significant danger to personnel and infrastructure. Mechanical ventilation systems are designed to effectively disperse these vapors, thereby reducing concentrations to safe levels and ensuring a more controlled environment. Additionally, proper ventilation helps eliminate stagnant air and maintain adequate airflow, promoting not only safety but also the comfort of individuals working in or near these areas. This is particularly important in both residential and industrial settings where flammable materials are stored or used. While local codes and regulations may offer guidance on the minimum safety requirements, relying solely on these codes can sometimes leave gaps in safety measures. It is best practice to implement mechanical ventilation as a standard precaution whenever flammable vapors are present, rather than limiting it to specific situations or applications.

2. True or False: Clothes dryer exhaust systems must be independent from other ventilation systems.

- A. True**
- B. False**
- C. Only if installed in basements**
- D. Depends on building codes**

Clothes dryer exhaust systems must be independent from other ventilation systems to ensure proper operation and safety. This requirement stems from the specific nature of dryer exhaust, which can contain lint, moisture, and potentially harmful gases. If these exhaust systems were to share pathways with other ventilation systems, such as those serving a furnace or a bathroom exhaust, there could be a risk of cross-contamination. This can lead to lint build-up in unintended areas, creating a fire hazard, or may potentially allow fumes to enter living spaces. Moreover, building codes often reflect this requirement, as they are created to protect both the efficiency of appliances and the health and safety of the occupants. Therefore, maintaining separate exhaust systems for clothes dryers is crucial for the effective removal of moisture and lint while preventing any backflow of contaminants. This is why the statement is deemed true.

3. What must be true about mechanical intakes in relation to hazardous sources?

- A. They must be within 5 feet
- B. They must be 10 feet horizontally away**
- C. They must be 20 feet away
- D. They can be adjacent with proper filtration

For mechanical intakes, maintaining a safe distance from hazardous sources is crucial to ensure air quality and prevent contamination. The regulation that specifies a horizontal distance of 10 feet from hazardous sources helps to minimize the risk of drawing in pollutants, odors, or any harmful substances that could compromise indoor air quality. This distance is based on safety guidelines designed to protect occupants and ensure that the air being introduced into the HVAC system is clean and suitable for circulation. By adhering to this distance, the likelihood of ingesting exhaust gases or airborne contaminants emitted from vehicles, industrial activities, or even nearby equipment is significantly reduced. Consequently, positioning mechanical intakes at least 10 feet away serves as a preventive measure in designing HVAC systems, aligning with safety standards and ensuring optimal performance.

4. What is the required installation location for equipment with parts that exceed 100 hp?

- A. In residential areas
- B. In a garage
- C. Outside or in machinery rooms**
- D. In attics

The installation location for equipment with parts that exceed 100 horsepower is essential for safety, efficiency, and compliance with building codes and regulations. When it comes to large HVAC equipment, placement in an outside area or a dedicated machinery room is often required to accommodate the size, noise, and potential exhaust of such systems. This requirement helps ensure that the equipment operates away from living spaces, minimizing disturbances to residents and providing adequate ventilation and space for maintenance. Outdoor locations facilitate better airflow and can often include considerations for drainage and environmental impact, making them more suitable for handling the heat and exhaust produced by high-capacity machinery. Machinery rooms, specifically designed for housing large mechanical equipment, provide the necessary space and infrastructure to safely contain and maintain the equipment, reducing risks associated with overheating or failure. In contrast, placing such large equipment in residential areas, garages, or attics is not advisable due to the potential complications related to space limitations, noise, safety, and access for service and maintenance, along with possible violations of local codes and zoning laws. This understanding of proper equipment placement is crucial for HVAC contractors and professionals working within residential and commercial settings.

5. Is excess air considered combustion air?

- A. True
- B. False**
- C. Only in limited cases
- D. Depends on the source

Excess air refers to the additional air that is provided in a combustion process beyond what is necessary for complete combustion of the fuel. While combustion air is the air required to burn fuel efficiently, excess air can dilute the combustion process, which could lead to a lower combustion efficiency. In combustion systems, the ideal operation occurs with just enough air to ensure complete combustion of the fuel. However, in practice, some systems add excess air to ensure complete combustion and to prevent the production of carbon monoxide and other harmful emissions. Nonetheless, this addition of air beyond what is strictly necessary for combustion is not considered part of the combustion air itself. Therefore, excess air is not classified as combustion air. The distinction is important in HVAC and combustion analysis because using the right amount of combustion air is critical for system efficiency and safety. Too much excess air could lead to wasted energy and lower system performance. Thus, the correct understanding is that excess air is not considered combustion air.

6. How many feet must any intake openings be from lot lines?

- A. 5 feet
- B. 10 feet**
- C. 15 feet
- D. 20 feet

The regulation that dictates the distance intake openings must be from lot lines focuses on ensuring adequate air quality and minimizing the risks associated with contaminants. This requirement aims to establish a safe separation distance that avoids direct intake of exhaust from vehicles, nearby structures, or other sources that may negatively affect the air quality entering into HVAC systems. The specified distance of 10 feet is significant because it provides a buffer zone that helps prevent potential pollutants from being sucked into an air conditioning system. This regulation is designed to protect the efficiency and functionality of the HVAC system, as well as to comply with health and safety standards established at the local or state level. In this context, the other distances mentioned do not align with the commonly accepted standards or requirements. Distances shorter than 10 feet would increase the likelihood of air quality issues, while distances longer than 10 feet may not be practical or necessary, thus making 10 feet the appropriate and enforceable standard.

7. How does a compressor achieve positive displacement?

- A. By increasing the pressure directly
- B. By decreasing the volume of the system
- C. By changing the internal volume of the compression chamber**
- D. By cooling the compressor coils

A compressor achieves positive displacement by changing the internal volume of the compression chamber. This process is fundamental to the operation of positive displacement compressors, which work by mechanically reducing the volume available to the refrigerant within the chamber. As the volume decreases, the refrigerant is compressed, resulting in increased pressure. The principle behind positive displacement is that as the compressor piston or rotary element moves in a way that reduces the volume of the chamber, the gas is pushed out under high pressure. This mechanism ensures consistent flow regardless of the pressure fluctuations in the discharge side, which is critical for maintaining system efficiency and performance. In contrast, while increasing the pressure directly might seem relevant, it is actually the mechanical action of reducing the volume that enables the pressure increase. Decreasing the volume of the system might suggest a broader interpretation that includes other aspects of a refrigeration cycle, but the direct relationship of changing the internal volume of the compression chamber specifically refers to how compressors operate. Cooling the compressor coils is unrelated to the mechanism of how positive displacement is achieved, as it pertains more to thermal management rather than the compressive action itself.

8. True or False: Ducts can be attached to a wall furnace.

- A. True
- B. False**
- C. Only if specific materials are used
- D. Only for specific installations

The assertion that ducts can be attached to a wall furnace is generally false. Wall furnaces are designed to be standalone heating units that primarily rely on radiant heat and convection to warm the surrounding space. They typically operate using natural or propane gas and are engineered to serve as a direct heating source in a specific area without the complexity of ductwork. When ducts are used, there could be significant concerns regarding airflow, efficiency, and safety. Wall furnaces are not manufactured to have ducting systems integrated into their design, as this can lead to improper air distribution, reduced efficiency, and potential safety hazards. Additionally, wall furnaces are not meant for central heating; they serve localized heating needs, which further reinforces the idea that duct attachment is inappropriate. In certain installations, heaters specifically designed for ducted systems are available; however, traditional wall furnaces do not accommodate ductwork in their typical usage scenarios, maintaining the standpoint that ducts should not be attached to a wall furnace.

9. What is the minimum distance that vent termination can be located from an interior corner?

- A. 2 feet
- B. 3 feet**
- C. 4 feet
- D. 5 feet

The minimum distance that vent termination should be placed from an interior corner is three feet to ensure safe operation and proper venting performance. This distance helps prevent the risk of recirculating exhaust gases, which can occur if the vent is too close to corners or walls. Adequate spacing allows for better air movement and reduces the potential for backdrafts that could lead to hazardous conditions. Compliance with this distance regulation is critical for both safety and efficiency in HVAC systems, ensuring that combustion products are effectively dispersed away from building structures. Maintaining this distance also aligns with industry best practices and code requirements, which typically state similar measurements to promote safety and to optimize the functioning of HVAC equipment.

10. What is the flash point benchmark for Class IIIB liquids?

- A. 140°F
- B. 160°F
- C. 200°F**
- D. 220°F

The flash point benchmark for Class IIIB liquids is established at 200°F. Class IIIB liquids are defined as those that have a flash point at or above 140°F but below 200°F. Therefore, 200°F serves as a critical threshold that differentiates Class IIIB liquids from those in other classifications. Understanding flash points is essential in HVAC and refrigeration practices, particularly in safety and regulatory compliance. Liquids with flash points of 200°F or higher are considered less volatile and pose a lower risk in terms of flammability, which is why this specific temperature is significant in categorizations of liquids. This is particularly important for contractors and technicians who handle, store, or work with these types of materials, ensuring that they are aware of safety protocols associated with different classes of flammable liquids.

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://azr39cr39hvaccontractor.examzify.com>

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

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