

ARIZONA R-39/CR-39 RESIDENTIAL AND COMMERCIAL AIR CONDITIONING AND REFRIGERATION HVAC CONTRACTOR PRACTICE EXAM (SAMPLE) STUDY GUIDE



Prepare with structure. Pass with confidence



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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. For what type of application is R-410A primarily used?**
 - A. Commercial refrigeration
 - B. Residential air conditioning
 - C. Industrial heating
 - D. Water heating

- 2. Which distance is required for explosive or flammable exhaust from exterior walls?**
 - A. 4 feet
 - B. 6 feet
 - C. 8 feet
 - D. 10 feet

- 3. What role does an air handler play within an HVAC system?**
 - A. Regulates refrigerant flow
 - B. Distributes heated or cooled air
 - C. Monitors indoor air quality
 - D. Serves as a backup heating source

- 4. 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

- 5. What can be a result of improperly vented gas appliances?**
 - A. Lower utility bills
 - B. Carbon monoxide poisoning
 - C. Improved air quality
 - D. None of the above

- 6. Should machinery rooms be mechanically ventilated to the outdoors?**
- A. True
 - B. False
 - C. Only during operation
 - D. Only if they contain hazardous materials
- 7. True or False: 1 ton of refrigeration is equal to 200 BTU/min?**
- A. True
 - B. False
- 8. How far does a guard rail extend from equipment installed within 10 feet of a roof edge?**
- A. 24 inches
 - B. 30 inches
 - C. 36 inches
 - D. 42 inches
- 9. Which of the following are types of conduit used in air conditioning systems?**
- A. Metal, PVC, and flexible
 - B. EMT, PVC, and flexible
 - C. Steel, aluminum, and copper
 - D. Rigid, flexible, and insulated
- 10. Oil fired boilers should be tested according to which standard?**
- A. UL 726
 - B. UL 834
 - C. UL 580
 - D. UL 1995

Answers

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

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Explanations

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1. For what type of application is R-410A primarily used?

- A. Commercial refrigeration
- B. Residential air conditioning**
- C. Industrial heating
- D. Water heating

R-410A is primarily utilized in residential air conditioning systems, making it the best choice among the options provided. This refrigerant is specifically designed to provide efficient cooling and is often used in new residential air conditioning installations due to its high energy efficiency and lower environmental impact compared to older refrigerants like R-22. R-410A operates at a higher pressure than many other refrigerants, which allows systems using it to be more effective at heat transfer. This characteristic is particularly advantageous in residential applications where energy efficiency and performance are crucial for managing indoor climates. As regulations increasingly favor refrigerants with lower global warming potential, R-410A has emerged as a popular and environmentally friendlier alternative for HVAC systems in homes. In contrast, while commercial refrigeration utilizes different refrigerants better suited for maintaining food storage temperatures, industrial heating and water heating typically involve different thermodynamic principles and alternative means of thermal management. As a result, residential air conditioning remains the primary application for R-410A, highlighting its effectiveness and popularity within that sector.

2. Which distance is required for explosive or flammable exhaust from exterior walls?

- A. 4 feet
- B. 6 feet**
- C. 8 feet
- D. 10 feet

The requirement for the distance of explosive or flammable exhaust from exterior walls is tied to safety regulations designed to minimize the risk of fire and explosion. A distance of 6 feet is typically stipulated to ensure that any hazardous gases or fumes generated by the equipment are adequately diluted in the atmosphere before they can come into contact with building structures or other ignition sources. This distance helps to prevent the accumulation of flammable vapors near the building, thereby reducing the likelihood of a fire hazard. Proper spacing also allows for airflow and minimizes the potential for exhaust to re-enter the building, which could lead to dangerous conditions. Regulatory codes may provide specific guidelines that are adopted for equipment installation, and understanding these codes is crucial for HVAC contractors. Ensuring compliance with these distances is an essential part of safe installation practices in the HVAC industry.

3. What role does an air handler play within an HVAC system?

- A. Regulates refrigerant flow
- B. Distributes heated or cooled air**
- C. Monitors indoor air quality
- D. Serves as a backup heating source

An air handler is a critical component of an HVAC system primarily responsible for distributing heated or cooled air throughout a building. It operates by taking the conditioned air produced by the heating or cooling unit and using a fan to circulate it through the ductwork and into various rooms. This distribution is essential for maintaining a consistent and comfortable indoor temperature. In addition to its main function of air distribution, an air handler often includes components such as filters to improve indoor air quality, and it may have options for humidity control as well. However, its primary role remains focused on the effective delivery of air. Understanding this function is essential for HVAC professionals when considering how to optimize system performance and energy efficiency in both residential and commercial settings.

4. 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.

5. What can be a result of improperly vented gas appliances?

A. Lower utility bills

B. Carbon monoxide poisoning

C. Improved air quality

D. None of the above

Improperly vented gas appliances can lead to the accumulation of harmful gases, particularly carbon monoxide, in enclosed spaces. Carbon monoxide is a colorless, odorless gas that is produced during the combustion of fossil fuels. When appliances such as furnaces, water heaters, or stoves do not vent correctly, they can release carbon monoxide, posing severe health risks, including poisoning. Symptoms of carbon monoxide poisoning may include headaches, dizziness, confusion, and even loss of consciousness, making it crucial to ensure that gas appliances are properly installed and vented to avoid these dangerous outcomes. Other options, such as lower utility bills and improved air quality, are not likely outcomes of improper venting. In fact, faulty venting could potentially lead to higher utility bills due to inefficient operation or unnecessary energy consumption. Additionally, the presence of unvented carbon monoxide would significantly decrease air quality, not improve it. Thus, the primary concern with improperly vented gas appliances is the risk of carbon monoxide exposure and its associated dangers.

6. Should machinery rooms be mechanically ventilated to the outdoors?

- A. True
- B. False
- C. Only during operation
- D. Only if they contain hazardous materials

Mechanical ventilation of machinery rooms to the outdoors is essential for several reasons, making it important for these spaces to be equipped with appropriate ventilation systems. One primary reason is to ensure that any heat generated by equipment is removed, preventing overheating and maintaining operational efficiency. Machinery can produce significant heat, and without proper ventilation, the ambient temperature can rise to levels that can affect performance and safety. Additionally, properly ventilating machinery rooms aids in the removal of potentially harmful fumes or exhaust gases emitted by engines, motors, or other equipment. This is particularly important in environments where combustion-based machines are operated, as it helps maintain air quality and safety for anyone working in or around the space. Furthermore, good ventilation practices help in controlling humidity levels, which can contribute to the overall longevity and reliability of the equipment housed in these rooms. Maintaining optimal air quality and temperature levels can also minimize the risk of equipment failure, enhancing operational longevity. Ventilation is not just beneficial but often required by building codes and safety regulations, underlining its importance in maintaining a safe and efficient working environment.

7. True or False: 1 ton of refrigeration is equal to 200 BTU/min?

- A. True
- B. False

The statement is false. One ton of refrigeration is actually equal to 12,000 BTU/hr, which translates to 200 BTU/min when calculated appropriately. To clarify, one ton of refrigeration is traditionally defined as the amount of heat required to melt one ton (2,000 pounds) of ice at 32 degrees Fahrenheit over the course of 24 hours. This is where the figure of 12,000 BTU/hr originates since 12,000 BTU divided by 60 minutes gives 200 BTU/min. Understanding this conversion is vital for HVAC professionals, as it helps in calculating the required cooling capacity for systems based on different load conditions effectively. This kind of knowledge ensures that contractors can accurately size equipment for residential and commercial applications.

8. How far does a guard rail extend from equipment installed within 10 feet of a roof edge?

- A. 24 inches
- B. 30 inches
- C. 36 inches
- D. 42 inches

The correct answer is that a guard rail must extend 30 inches from equipment installed within 10 feet of a roof edge. This requirement is part of safety regulations that aim to prevent falls from rooftop equipment and ensure a secure working environment for personnel who may be on or near the edges of a roof. Guard rails are critical safety features designed to provide a physical barrier at elevated locations, especially where there is a risk of falling off the edge. The specified extension distance is derived from industry standards that take into account various factors, including the average reach of a person, ensuring that any worker near the edge of a roof has a sufficient protective barrier in place. The 30-inch requirement helps to safeguard personnel working close to potentially hazardous edges, promoting compliance with Occupational Safety and Health Administration (OSHA) guidelines. This distance is established to balance the need for safety without being overly restrictive on the use of roof space.

9. Which of the following are types of conduit used in air conditioning systems?

- A. Metal, PVC, and flexible
- B. EMT, PVC, and flexible**
- C. Steel, aluminum, and copper
- D. Rigid, flexible, and insulated

The selection of EMT (Electrical Metallic Tubing), PVC (Polyvinyl Chloride), and flexible conduit as types of conduit used in air conditioning systems is appropriate because each of these materials serves distinct functions in protecting electrical wiring associated with HVAC systems. EMT is commonly favored in commercial and residential settings due to its durability and ability to provide a robust physical barrier for wiring, thus ensuring safety against physical damage and environmental factors. PVC is useful for its corrosion resistance and lightweight characteristics, making it a viable choice for certain installations, especially in damp environments where metal conduit might be vulnerable to corrosion. The flexible conduit allows for ease of installation in areas where rigid conduit might be impractical, such as in tight spaces or areas requiring movement or adjustments. These conduits are essential in maintaining the integrity and safety of electrical systems connected to air conditioning units, ensuring they operate efficiently in accordance with building codes and safety regulations.

10. Oil fired boilers should be tested according to which standard?

- A. UL 726**
- B. UL 834
- C. UL 580
- D. UL 1995

Oil fired boilers are specifically tested according to UL 726. This standard relates to the safety and performance requirements for oil burning equipment, ensuring that the boilers function efficiently and safely in residential or commercial applications. UL 726 establishes guidelines for construction, testing, and performance criteria for these types of boilers, which is crucial for preventing hazards such as leaks, fires, or other malfunctions. The other standards listed are applicable to different types of equipment or systems. For example, UL 834 pertains to the safety of heating appliances, not specifically oil fired boilers. UL 580 focuses on the design of roofing systems, which is unrelated to boiler operations. UL 1995 is significant for the performance and safety of electrically operated HVAC equipment. Therefore, understanding the specific application of UL 726 is vital for ensuring compliance with industry standards targeted at oil fired boiler 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://azr39cr39hvaccontractor.examzify.com>

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

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