

AIR CONDITIONING (A/C) AND HEATING CERTIFICATION PRACTICE TEST (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 does thick frost on the suction line indicate?**
 - A. Improper refrigerant charge
 - B. Poor airflow in the evaporator
 - C. Potential flooding in the evaporator
 - D. System is functioning correctly

- 2. What could indicate a problem with the compressor clutch if a loud squealing noise is heard?**
 - A. worn compressor clutch
 - B. defective compressor
 - C. faulty refrigerant levels
 - D. none of these answers

- 3. What is a potential consequence of a clogged evaporator case drain?**
 - A. improved A/C efficiency
 - B. water leakage into the cabin
 - C. enhanced airflow
 - D. reduced refrigerant levels

- 4. What is the primary function of a compressor in an A/C system?**
 - A. To evaporate the refrigerant for cooling
 - B. To compress the refrigerant and circulate it through the system
 - C. To filter out impurities in the air
 - D. To distribute cooled air throughout the building

- 5. Which part of the air conditioning system typically removes humidity from the air?**
 - A. The evaporator
 - B. The condenser
 - C. The expansion valve
 - D. The receiver/dryer

- 6. Which of the following statements is NOT correct regarding refrigerants?**
- A. Refrigerant leaves the compressor as a high-pressure, high-temperature liquid.
 - B. Refrigerant leaves the condenser as a low-pressure, high-temperature liquid.
 - C. Refrigerant returns to the compressor as a low-pressure, high-temperature vapor.
 - D. None of these answers are correct.
- 7. Who is correct regarding the repair of refrigerant hoses?**
- A. A only
 - B. B only
 - C. both A and B
 - D. neither A nor B
- 8. How is refrigerant reclaimed during the servicing of an A/C system?**
- A. By using a recovery machine to capture and store it safely
 - B. By venting it into the atmosphere
 - C. By using a standard vacuum cleaner
 - D. By diluting it with water before disposal
- 9. What is the purpose of a differential pressure switch in an HVAC system?**
- A. To measure temperature fluctuations
 - B. To detect airflow obstructions
 - C. To monitor humidity levels
 - D. To control compressor operation
- 10. Why is it important to have a licensed professional install HVAC equipment?**
- A. To assess indoor air quality
 - B. To ensure safety and compliance
 - C. To increase system aesthetics
 - D. To enhance system noise reduction

Answers

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

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Explanations

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1. What does thick frost on the suction line indicate?

- A. Improper refrigerant charge
- B. Poor airflow in the evaporator
- C. Potential flooding in the evaporator**
- D. System is functioning correctly

Thick frost on the suction line is an indication of potential flooding in the evaporator. When the evaporator coil gets too much liquid refrigerant entering it, it can overwhelm the ability of the coil to vaporize the refrigerant properly. This results in a situation where excess liquid refrigerant travels back to the compressor, leading to frost formation on the suction line due to the cold temperatures associated with the liquid refrigerant and the reduced temperature of the line itself. In normal operation, the suction line should not develop thick frost as it indicates that the system is not functioning efficiently. Therefore, the presence of thick frost can serve as a signal that there are issues within the refrigeration cycle, specifically related to the evaporation process and refrigerant management.

2. What could indicate a problem with the compressor clutch if a loud squealing noise is heard?

- A. worn compressor clutch**
- B. defective compressor
- C. faulty refrigerant levels
- D. none of these answers

A loud squealing noise coming from the compressor clutch is often indicative of a worn compressor clutch. The primary function of the compressor clutch is to engage and disengage the compressor as needed, allowing the system to operate efficiently. When the clutch is worn, it can slip or fail to engage properly, resulting in a squealing sound as metal parts grind against each other due to inadequate contact or friction. The noise is typically a direct result of the clutch encountering resistance while attempting to engage or disengage. This wear can result from prolonged use or a lack of lubrication. Recognizing this symptom early can help in diagnosing the problem and preventing further damage to the compressor itself. Other factors might affect the operation of the air conditioning system, such as defective refrigerant levels or a malfunctioning compressor, but these would not typically produce the specific squealing noise associated with a worn clutch. Understanding the signs associated with compressor-related issues is crucial for proper maintenance and repairs in air conditioning systems.

3. What is a potential consequence of a clogged evaporator case drain?

- A. improved A/C efficiency
- B. water leakage into the cabin**
- C. enhanced airflow
- D. reduced refrigerant levels

A clogged evaporator case drain can lead to water accumulating in the evaporator case instead of draining away as intended. This excess water may overflow and leak into the cabin of the vehicle, causing potential damage to the interior, electrical components, or upholstery. It can also lead to the growth of mold and mildew, which can create unpleasant odors and negatively impact air quality inside the cabin. The function of the evaporator drain is specifically designed to prevent such issues by allowing condensation to exit the system properly, making the possibility of water leakage into the cabin a direct consequence of a clog.

4. What is the primary function of a compressor in an A/C system?

- A. To evaporate the refrigerant for cooling
- B. To compress the refrigerant and circulate it through the system**
- C. To filter out impurities in the air
- D. To distribute cooled air throughout the building

The primary function of a compressor in an air conditioning system is to compress the refrigerant and circulate it throughout the system. This is a critical role because it allows the refrigerant to transition from a low-pressure gas to a high-pressure gas, which is essential for the refrigeration cycle to function effectively. Once the refrigerant is compressed, it increases in temperature and pressure, enabling it to flow through the condenser coils where it releases heat to the outside environment. This process is fundamental for the cooling effect within the indoor space. The compressor, therefore, acts as the heart of the A/C system, facilitating the movement and transformation of refrigerant, ensuring efficient heat exchange and cooling. In this context, the other options do not encapsulate the main duty of the compressor. The evaporator role is to absorb heat, filtering impurities is performed by air filters or purifiers, and the distribution of cooled air is handled by fans and ductwork, rather than the compressor itself. Understanding the specific function of the compressor is vital for diagnosing and maintaining air conditioning systems effectively.

5. Which part of the air conditioning system typically removes humidity from the air?

- A. The evaporator**
- B. The condenser
- C. The expansion valve
- D. The receiver/dryer

The evaporator is the component of the air conditioning system primarily responsible for removing humidity from the air. As the warm air from the environment passes over the evaporator coil, the refrigerant within the coil absorbs heat from the air, causing the refrigerant to evaporate. This process cools the air while simultaneously lowering its capacity to hold moisture. As a result, the moisture condenses on the coil's surface, effectively dehumidifying the air before it is circulated back indoors. In contrast, the condenser's main function is to release the heat absorbed by the refrigerant during the cooling cycle, promoting the transition from a gas back to a liquid state. The expansion valve regulates the flow of refrigerant into the evaporator to ensure the system operates efficiently, but it does not directly remove humidity. The receiver/dryer serves to store and filter the refrigerant, ensuring that moisture does not enter the system, but it does not actively remove humidity from the air as the evaporator does.

6. Which of the following statements is NOT correct regarding refrigerants?

- A. Refrigerant leaves the compressor as a high-pressure, high-temperature liquid.
- B. Refrigerant leaves the condenser as a low-pressure, high-temperature liquid.
- C. Refrigerant returns to the compressor as a low-pressure, high-temperature vapor.

D. None of these answers are correct.

The correct choice is based on the understanding of the refrigeration cycle and the characteristics of refrigerants at different stages of that cycle. In a typical refrigeration cycle, refrigerant exits the compressor in a state that is high-pressure and high-temperature vapor, ready to be cooled in the condenser. When it passes through the condenser, the refrigerant releases heat and transforms into a high-pressure liquid, not a low-pressure liquid. After it leaves the condenser, it then experiences a pressure drop as it moves through the expansion valve, and enters the evaporator where it absorbs heat and changes back into a low-pressure vapor that returns to the compressor. Given this cycle description, the statement regarding the refrigerant leaving the condenser as a low-pressure high-temperature liquid is incorrect. The condenser actually produces a high-pressure liquid, thus supporting the understanding of how refrigerants work. Therefore, identifying that none of the statements presented are correct confirms the validity of the answer. This knowledge solidifies the principles of thermodynamics involved in refrigeration, highlighting the importance of understanding the behavior of refrigerants at each stage of the cycle.

7. Who is correct regarding the repair of refrigerant hoses?

A. A only

- B. B only
- C. both A and B
- D. neither A nor B

The choice indicating that only one party is correct regarding the repair of refrigerant hoses suggests that this individual provides accurate information about proper repair techniques and safety standards in handling refrigerants. Proper repair of refrigerant hoses is crucial for maintaining system efficiency and ensuring environmental safety. When refrigerant hoses are damaged, they must be repaired correctly to prevent refrigerant leaks, which can lead to system inefficiencies and potential harm to the environment due to the release of greenhouse gases. The correct response is likely based on the understanding that only one individual adheres to accepted repair methodologies, including the use of appropriate materials, techniques, and safety protocols. This emphasizes the importance of following the established guidelines and regulations when dealing with refrigerant systems to ensure both operational integrity and compliance with environmental laws. In contrast, the other choice likely points to an individual who may have provided misinformation or inadequate methods pertaining to hose repair, which could lead to system failures or unintended leaks. Thus, the emphasis on the correctness of the first party underlines the significance of comprehensive training and adherence to best practices within the HVAC industry.

8. How is refrigerant reclaimed during the servicing of an A/C system?

- A. By using a recovery machine to capture and store it safely**
- B. By venting it into the atmosphere
- C. By using a standard vacuum cleaner
- D. By diluting it with water before disposal

The correct answer highlights the importance of environmental safety and regulatory compliance when servicing an A/C system. Refrigerant reclamation involves the use of a recovery machine, specifically designed to safely capture and store refrigerant from the system during maintenance or repair procedures. This process not only prevents the harmful release of refrigerants into the atmosphere—many of which can have significant negative impacts on the ozone layer and contribute to climate change—but also complies with governmental regulations regarding refrigerant disposal. Recovery machines are equipped to efficiently extract refrigerant from the system and contain it in a storage tank, allowing for either recycling or proper disposal without harm to the environment. This method preserves the refrigerant for possible reuse, supporting sustainable practices in the HVAC industry. Other methods mentioned are not only ineffective but also illegal, as venting refrigerants into the atmosphere can lead to severe environmental consequences and is strictly prohibited under many laws. Similarly, using a standard vacuum cleaner or diluting refrigerants with water does not adequately remove or manage refrigerants and could lead to safety hazards.

9. What is the purpose of a differential pressure switch in an HVAC system?

- A. To measure temperature fluctuations
- B. To detect airflow obstructions**
- C. To monitor humidity levels
- D. To control compressor operation

The purpose of a differential pressure switch in an HVAC system is to detect airflow obstructions. This switch monitors the pressure difference between two points, typically across a filter or duct. When airflow is restricted due to dirt buildup in the filter or any other blockage, the pressure difference changes, which triggers the switch. This allows the system to alert users or automatically shut down to prevent damage to the equipment or to ensure efficient operation. By providing this protective function, the differential pressure switch plays a crucial role in maintaining the overall efficiency and safety of the HVAC system.

10. Why is it important to have a licensed professional install HVAC equipment?

- A. To assess indoor air quality
- B. To ensure safety and compliance**
- C. To increase system aesthetics
- D. To enhance system noise reduction

Having a licensed professional install HVAC equipment is crucial for ensuring safety and compliance with local codes, regulations, and industry standards. Proper installation involves understanding the technical aspects of the HVAC system, including electrical connections, refrigerant handling, and mechanical system integration. Licensed professionals have the necessary training and knowledge to perform these tasks correctly, minimizing risks such as electrical hazards, gas leaks, or improper installation that can lead to equipment failure. In addition, compliance with local building codes is essential since these codes are in place to protect both the occupants and the property. A licensed technician will follow these guidelines, ensuring that the system operates safely and efficiently. This careful adherence helps to prevent future issues, such as increased energy costs, code violations, or even potential legal liabilities that could arise from improper installations. By trusting a licensed professional, homeowners can have peace of mind that their HVAC system has been installed correctly and safely.

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://acandheating.examzify.com>

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

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