

Mohawk Basic AC and Refrigeration 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. What is the purpose of a high-pressure cutout in a refrigeration system?**
 - A. To ensure compressor efficiency**
 - B. To protect the compressor**
 - C. To monitor humidity levels**
 - D. To maintain refrigerant flow**

- 2. What type of gauge is used to measure pressure above and below atmosphere?**
 - A. Absolute gauge**
 - B. Digital gauge**
 - C. Compound gauge**
 - D. Manometer**

- 3. What is the resistance found in good, usually closed relay contacts?**
 - A. 0.5 ohms**
 - B. 1 ohm**
 - C. 0 ohms**
 - D. 5 ohms**

- 4. What aspect of an air conditioning system can be negatively affected if there is too much refrigerant?**
 - A. Cooling efficiency**
 - B. Compressor lifespan**
 - C. Condenser performance**
 - D. Energy consumption**

- 5. Why is the presence of oil often the first indication of a refrigerant leak in a system?**
 - A. The oil absorbs refrigerant**
 - B. The refrigerant evaporates quickly**
 - C. The molecular weight of oil is less than that of refrigerant**
 - D. The molecular weight of refrigerant is greater than that of oil**

- 6. Under what condition do the wet bulb temperature and dry bulb temperature become the same?**
- A. 50% RH**
 - B. 75% RH**
 - C. 100% RH**
 - D. 25% RH**
- 7. What is typically found in a closed loop heating system?**
- A. Open air circulation**
 - B. Refrigerant recovery**
 - C. Fluid coolant**
 - D. Direct evaporation**
- 8. Why is it essential to use a recovery machine when collecting refrigerant?**
- A. To prevent environmental damage**
 - B. To speed up the collection process**
 - C. To lower the pressure in the system**
 - D. To ensure refrigerant purity**
- 9. How should safety controls be wired in a circuit that includes operating controls?**
- A. In parallel**
 - B. In series**
 - C. In conjunction**
 - D. Independently**
- 10. When removing the gauge port plug from the compressor discharge service valve, what position should the valve be in?**
- A. Fully open**
 - B. Partially open**
 - C. Backseated**
 - D. Completely closed**

Answers

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

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Explanations

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1. What is the purpose of a high-pressure cutout in a refrigeration system?

- A. To ensure compressor efficiency**
- B. To protect the compressor**
- C. To monitor humidity levels**
- D. To maintain refrigerant flow**

The high-pressure cutout in a refrigeration system is a crucial safety device designed to protect the compressor. Its primary function is to monitor the pressure of the refrigerant within the system, specifically the high-pressure side. When the pressure exceeds a certain set point, indicating a potential problem such as a blockage or a malfunction, the high-pressure cutout activates and shuts down the compressor. This prevents damage that could occur from excessive pressure, such as overheating, mechanical failure, or even catastrophic failure of the compressor. The integrity and longevity of the compressor are vital for the overall efficiency and reliability of the refrigeration system. By preventing the compressor from operating under potentially damaging conditions, the high-pressure cutout serves as an essential safeguard, minimizing repair costs and extending the lifespan of the equipment.

2. What type of gauge is used to measure pressure above and below atmosphere?

- A. Absolute gauge**
- B. Digital gauge**
- C. Compound gauge**
- D. Manometer**

The compound gauge is designed to measure both pressures above atmospheric pressure (gauge pressure) and pressures below atmospheric pressure (vacuum). This functionality is essential in various HVAC and refrigeration applications where knowing both types of pressure is critical for system performance. A compound gauge usually displays a range that includes both negative and positive values relative to atmospheric pressure, which is particularly useful for technicians who need to monitor the performance of refrigeration systems as they operate under different conditions. In contrast, absolute gauges only measure pressure relative to a perfect vacuum, ignoring atmospheric pressure entirely, while digital gauges can display different types of pressure but do not have the specific functionality to measure both above and below atmospheric pressure simultaneously. Manometers measure pressure using fluid columns and can indicate both gauge and absolute pressure but are often less convenient for various applications compared to compound gauges.

3. What is the resistance found in good, usually closed relay contacts?

- A. 0.5 ohms**
- B. 1 ohm**
- C. 0 ohms**
- D. 5 ohms**

The resistance found in good, usually closed relay contacts is considered to be approximately 0 ohms. In practical terms, this means that the contacts are effectively short-circuited when closed, allowing electricity to pass through without significant resistance or energy loss. This "0 ohms" concept represents an ideal condition where the contacts provide the least possible resistance, ensuring efficient operation of the electrical circuit they control. Relay contacts are designed to minimize resistance for a number of reasons, including reducing heat generation, maintaining voltage levels, and ensuring reliability. While in reality, there may be minuscule resistance values due to factors like contact material and surface condition, they are close enough to zero that they can be considered as such in a functional context. In contrast, other answers suggest non-zero resistance values that would indicate that the relay contacts are either not functioning optimally or are showing wear or failure, which would not be expected in a properly functioning relay. Therefore, understanding that good relay contacts have a resistance close to zero is crucial for troubleshooting and ensuring proper circuit performance.

4. What aspect of an air conditioning system can be negatively affected if there is too much refrigerant?

- A. Cooling efficiency**
- B. Compressor lifespan**
- C. Condenser performance**
- D. Energy consumption**

An excess of refrigerant in an air conditioning system can indeed have a significant impact on the cooling efficiency. When there is too much refrigerant, it can lead to a condition known as "flooding," where the compressor receives liquid refrigerant instead of vapor. This situation can prevent the compressor from operating efficiently, resulting in reduced cooling performance. As the system struggles to maintain the desired temperature, it becomes less efficient, leading to possible failures in reaching the setpoint temperature. In addition to cooling efficiency, overcharging the system with refrigerant can also cause strain on the compressor, leading to potential damage and impacting its lifespan, as well as affecting condenser performance due to improper heat exchange. However, the primary and most immediate effect of having an excessive amount of refrigerant is the negative influence on cooling efficiency, which is why this answer correctly highlights one of the critical consequences of incorrect refrigerant levels in an AC system.

5. Why is the presence of oil often the first indication of a refrigerant leak in a system?
- A. The oil absorbs refrigerant
 - B. The refrigerant evaporates quickly**
 - C. The molecular weight of oil is less than that of refrigerant
 - D. The molecular weight of refrigerant is greater than that of oil

The correct answer highlights the behavior of refrigerants and oils in a system. When a refrigerant leak occurs, the refrigerant escapes from the system. Because refrigerants generally have low boiling points, they evaporate quickly. As they escape, they often take some of the oil used for lubrication in the compressor with them. As a result, the presence of oil can be one of the first signs of a refrigerant leak because the oil will typically remain at the site of the leak or collect at the lowest point in the system. This is crucial for technicians as it indicates not just that there is a leak, but also suggests the path the refrigerant was taking. In contrast, while some options imply relationships between the physical properties of oil and refrigerants, they do not explain the practical scenario of leak detection as effectively as the rapid evaporation of the refrigerant does in conjunction with oil movement.

6. Under what condition do the wet bulb temperature and dry bulb temperature become the same?
- A. 50% RH
 - B. 75% RH
 - C. 100% RH**
 - D. 25% RH

The wet bulb temperature and dry bulb temperature become the same at 100% relative humidity (RH). This occurs because, at this saturation point, the air cannot hold any more moisture, meaning the amount of moisture in the air is at its maximum. At 100% RH, the wet bulb temperature, which reflects the cooling effect of evaporation, equals the dry bulb temperature, or the ambient air temperature, as there is no evaporation occurring. This situation indicates that the air is fully saturated with moisture, and thus, the two temperatures converge. In lower percentages of relative humidity, the two temperatures will differ because evaporation can still occur, leading to a lower wet bulb temperature.

7. What is typically found in a closed loop heating system?

- A. Open air circulation
- B. Refrigerant recovery
- C. Fluid coolant**
- D. Direct evaporation

In a closed loop heating system, fluid coolant is essential as it circulates within the system to transfer heat efficiently. This fluid can be water or a mixture of water and antifreeze, designed to absorb heat from the source and deliver it to the spaces that need heating. The closed loop prevents the coolant from escaping into the environment, allowing for efficient heat exchange and maintaining system integrity. In contrast to the other choices, open air circulation would allow for heat loss and is not characteristic of a closed loop system. Refrigerant recovery is relevant in systems that use refrigerants, such as cooling systems or heat pumps, but it is not a defining feature of closed loop heating systems. Direct evaporation implies a method where refrigerant changes from liquid to gas directly in the evaporator, which primarily pertains to refrigeration and air conditioning systems rather than closed loop heating systems. Hence, fluid coolant being crucial for heat transfer and system function solidifies its role in a closed loop heating system.

8. Why is it essential to use a recovery machine when collecting refrigerant?

- A. To prevent environmental damage**
- B. To speed up the collection process
- C. To lower the pressure in the system
- D. To ensure refrigerant purity

Using a recovery machine when collecting refrigerant is essential primarily to prevent environmental damage. Refrigerants can be harmful to the environment if released into the atmosphere, contributing to ozone depletion and climate change. Recovery machines are specifically designed to safely extract refrigerants from systems, ensuring they are not vented into the atmosphere during service or maintenance work. By using these machines, technicians comply with legal regulations aimed at protecting the environment and promote responsible handling of these substances. While the speed of the collection process, lowering the pressure in the system, and ensuring refrigerant purity are important considerations in refrigerant management, they are secondary to the critical goal of environmental protection. Recovery machines are engineered to effectively capture and contain refrigerants, mitigating potential negative impacts on the ozone layer and promoting overall environmental sustainability.

9. How should safety controls be wired in a circuit that includes operating controls?

- A. In parallel**
- B. In series**
- C. In conjunction**
- D. Independently**

Wiring safety controls in series with operating controls is a fundamental practice in electrical control systems, particularly in HVAC and refrigeration applications. This configuration is essential because it ensures that the safety controls can effectively interrupt the circuit in the event of unsafe conditions. When safety controls are wired in series, they become part of the same circuit path as the operating controls. This means that if a safety control, such as a high-pressure switch or a temperature limit switch, detects a condition that may pose a risk to the system (like excessive pressure or temperature), it can break the circuit, shutting down the operation and preventing potential damage or hazards. This setup guarantees that the operating controls cannot energize the equipment if the safety control is activated, ensuring a higher level of operational safety. In contrast, wiring safety controls in parallel would allow the operating controls to function independently of the safety controls, defeating their purpose and potentially leading to unsafe operation. Overall, the series wiring method is crucial for maintaining safe and reliable function in HVAC systems, as it integrates safety mechanisms closely with the operational controls.

10. When removing the gauge port plug from the compressor discharge service valve, what position should the valve be in?

- A. Fully open**
- B. Partially open**
- C. Backseated**
- D. Completely closed**

The service valve should be in the backseated position when removing the gauge port plug from the compressor discharge service valve. In the backseated position, the valve is designed to allow for safe and effective pressure measurement without the risk of refrigerant escaping. When the valve is backseated, it means that it is positioned to isolate the gauge port from the system, preventing the flow of refrigerant. This is essential for accurately taking readings without risking contamination or loss of refrigerant. A backseated valve also minimizes the potential for accidents or injuries by ensuring that the refrigerant pressure is contained within the system while the gauges are being connected or disconnected. For safety and to avoid possible damage to the system, it is critical to always check that the service valve is properly backseated before performing any maintenance tasks related to the gauges.

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://mohawkbasicacrefrigeration.examzify.com>

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

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