

MOHAWK BASIC AC AND REFRIGERATION PRACTICE EXAM (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

VISIT US ONLINE FOR
THE FULL VERSION STUDY GUIDE

<https://mohawkbasicacrefrigeration.examzify.com>



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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 happens to the viscosity of a mixture as the percentage of R12 in oil increases?**
 - A. It increases significantly
 - B. It remains unchanged
 - C. The viscosity of the mixture decreases
 - D. It becomes unstable
- 2. What happens to the boiling point of a refrigerant as system pressure increases?**
 - A. Increases
 - B. Decreases
 - C. Remains the same
 - D. Fluctuates greatly
- 3. What is the main consequence of a sticky expansion valve?**
 - A. Constant high pressure
 - B. Cooling efficiency drops
 - C. Quick system shutdown
 - D. Increased refrigerant charge
- 4. Which component is primarily responsible for controlling the flow of refrigerant in the system?**
 - A. Condenser
 - B. Compressor
 - C. Expansion valve
 - D. Accumulator
- 5. How should injuries caused by contact with liquid refrigerant be treated?**
 - A. Burn treatment
 - B. Seeking immediate medical attention
 - C. Cooling the area with ice
 - D. Treating as frost bite

- 6. Why must suction filters be sized correctly?**
- A. To prevent noise in the system
 - B. To avoid excessive pressure drop in the suction line
 - C. To enhance the efficiency of the compressor
 - D. To allow for faster refrigerant flow
- 7. What is the primary purpose of a crankcase heater on a motor compressor?**
- A. To increase the cooling capacity
 - B. To keep the oil temperature high
 - C. To keep the refrigerant boiled out of the oil
 - D. To prevent compressor noise
- 8. Which type of oil is suitable for a refrigeration system using HFC refrigerant?**
- A. Mineral oil
 - B. Alkyl benzene oil
 - C. Polyol ester oil
 - D. Polyethylene glycol oil
- 9. Which factors affect the resistance of a wire?**
- A. Length, insulation type, temperature, and humidity
 - B. Length, diameter, material, and temperature
 - C. Diameter, voltage, material, and temperature
 - D. Length, material, voltage, and humidity
- 10. When adding refrigerant from a service cylinder through the suction service valve, how must the cylinder be positioned?**
- A. On its side
 - B. Upright
 - C. Inverted
 - D. At a 45-degree angle

Answers

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

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Explanations

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1. What happens to the viscosity of a mixture as the percentage of R12 in oil increases?

- A. It increases significantly
- B. It remains unchanged
- C. The viscosity of the mixture decreases**
- D. It becomes unstable

As the percentage of R12 (a refrigerant) in oil increases, the viscosity of the mixture generally decreases. This is because R12 behaves as a low-viscosity liquid, and when mixed with oil, it tends to dilute the oil's higher viscosity properties. The presence of a refrigerant with lower viscosity can lead to an overall reduction in the viscosity of the blend. Understanding this concept is important, especially in refrigeration systems, as the viscosity of lubricants influences circulation and the efficiency of the system. Lower viscosity can enhance flow characteristics, allowing for better lubrication and reducing the risk of compressor wear or damage. Therefore, the correct understanding of how refrigerants alter the properties of lubricants, like viscosity, is essential for maintaining the functionality and longevity of refrigeration systems.

2. What happens to the boiling point of a refrigerant as system pressure increases?

- A. Increases**
- B. Decreases
- C. Remains the same
- D. Fluctuates greatly

When the pressure in a refrigeration system increases, the boiling point of the refrigerant also increases. This relationship is based on the principle that boiling point is dependent on pressure; specifically, higher pressures elevate the boiling point temperature. This is crucial in refrigeration systems where the refrigerant must absorb heat from the environment before reaching its boiling point, converting from a liquid to a vapor state. In practical terms, this means that within a closed refrigeration cycle, as the system operates and compresses the refrigerant, the increase in pressure leads to a higher boiling point. As a result, the refrigerant can efficiently absorb heat at these elevated temperatures before it transitions into a vapor, maintaining the desired cooling effect in the system. Understanding this principle is essential for proper system design and troubleshooting in HVAC applications.

3. What is the main consequence of a sticky expansion valve?

- A. Constant high pressure
- B. Cooling efficiency drops**
- C. Quick system shutdown
- D. Increased refrigerant charge

A sticky expansion valve primarily causes a drop in cooling efficiency. The role of the expansion valve is to regulate the flow of refrigerant into the evaporator, where it absorbs heat and provides cooling. When the expansion valve is sticky, it doesn't open or close properly, leading to inconsistent refrigerant flow. This irregular flow can prevent the evaporator from receiving the optimal amount of refrigerant needed to absorb heat effectively. As a result, the cooling capacity of the system decreases, leading to poorer overall performance and comfort levels. In scenarios where the valve sticks too far open, the system could experience excessive refrigerant flow, which can also affect efficiency negatively. Conversely, if it sticks too closed, it can starve the evaporator, further reducing performance. This instability in operation signifies a significant impact on cooling efficiency and is why this option stands out as the main consequence of a sticky expansion valve.

4. Which component is primarily responsible for controlling the flow of refrigerant in the system?

- A. Condenser
- B. Compressor
- C. Expansion valve**
- D. Accumulator

The expansion valve plays a crucial role in controlling the flow of refrigerant within an HVAC system. It is specifically designed to regulate the amount of refrigerant that enters the evaporator coil. By throttling the refrigerant, the expansion valve ensures that the refrigerant exits at the appropriate pressure and temperature, which is essential for efficient heat transfer. When the refrigerant leaves the condenser in a liquid state, the expansion valve reduces its pressure, causing it to expand and cool before it enters the evaporator. This process is vital for the refrigeration cycle, as the cooled refrigerant absorbs heat from the environment within the evaporator, facilitating the cooling process. In contrast, components such as the condenser, compressor, and accumulator serve different functions. The condenser is responsible for releasing heat from the refrigerant, transforming it from a gas back to a liquid. The compressor compresses the refrigerant, raising its pressure and temperature before it goes to the condenser. The accumulator, on the other hand, is used to store excess refrigerant and ensure that only vapor enters the compressor. Each of these components is essential to the refrigeration cycle, but the expansion valve's primary function is the control of refrigerant flow.

5. How should injuries caused by contact with liquid refrigerant be treated?

- A. Burn treatment
- B. Seeking immediate medical attention
- C. Cooling the area with ice
- D. Treating as frost bite**

Injuries caused by contact with liquid refrigerant should be treated as frostbite. Liquid refrigerants are often extremely cold; when they come into contact with the skin, they can cause freezing of the skin and underlying tissues, similar to frostbite. Immediate treatment involves gradually rewarming the affected area and avoiding direct heat sources, as this can cause further damage. The affected area should be gently immersed in warm (not hot) water or wrapped in warm, dry cloths to help restore normal temperature. Burn treatment, while important for thermal burns, does not apply here since the injury type is due to extreme cold. Seeking immediate medical attention is always prudent in cases of suspected frostbite, but the immediate first aid treatment starts with recognizing the injury as frostbite and acting accordingly. Cooling the area with ice is inappropriate and potentially harmful, as it further lowers the temperature of already frozen tissue. This could exacerbate the damage, whereas appropriate warming is critical for treatment.

6. Why must suction filters be sized correctly?

- A. To prevent noise in the system
- B. To avoid excessive pressure drop in the suction line**
- C. To enhance the efficiency of the compressor
- D. To allow for faster refrigerant flow

Suction filters are crucial components in refrigeration systems as they play a significant role in maintaining system performance. Sizing the suction filter correctly is essential to avoid excessive pressure drop in the suction line. When a filter is too small or improperly sized, it can create a significant resistance to the flow of refrigerant. This pressure drop can lead to insufficient refrigerant reaching the compressor, potentially causing it to operate inefficiently or even fail. A correctly sized suction filter allows for adequate refrigerant flow while trapping debris and contaminants that could damage the compressor or impair system function. By ensuring that the suction line maintains appropriate pressure levels, the overall efficiency, reliability, and longevity of the refrigeration system are enhanced, allowing the compressor to function as intended without the risk of damage from foreign particles.

7. What is the primary purpose of a crankcase heater on a motor compressor?

- A. To increase the cooling capacity
- B. To keep the oil temperature high
- C. To keep the refrigerant boiled out of the oil**
- D. To prevent compressor noise

The primary purpose of a crankcase heater on a motor compressor is to keep the refrigerant boiled out of the oil. In a refrigeration system, when the compressor is not operating, refrigerant can migrate and accumulate in the crankcase oil, leading to potential issues when the compressor starts up again. By using a crankcase heater, the oil temperature is raised, which helps to vaporize any dissolved refrigerant back into the gaseous state and prevents it from remaining in the oil. This is crucial for maintaining the proper lubrication and function of the compressor upon startup, as excess refrigerant in the oil can cause dilution, reducing its lubricating properties and potentially leading to compressor damage. Understanding this function emphasizes the importance of maintaining proper oil conditions for the compressor's efficiency and longevity, making it a critical component in maintaining effective refrigeration system operation.

8. Which type of oil is suitable for a refrigeration system using HFC refrigerant?

- A. Mineral oil
- B. Alkyl benzene oil
- C. Polyol ester oil**
- D. Polyethylene glycol oil

Polyol ester oil is the suitable choice for refrigeration systems using HFC refrigerants. This type of oil is specifically formulated to provide excellent lubrication and compatibility with HFC refrigerants, which are commonly used due to their environmentally friendly characteristics and efficiency. HFC refrigerants, unlike older refrigerants such as CFCs, require synthetic oils like polyol esters or alkylbenzene oils for proper operation. These synthetic oils have better thermal stability, lower viscosity, and improved solubility with HFCs, which helps in maintaining efficient heat exchange and performance in the system. Using polyol ester oil in HFC refrigeration systems ensures that the oil stays in solution with the refrigerant, reducing issues like oil return problems and ensuring effective lubrication of the compressor and other system components. This contributes to the longevity and reliability of the refrigeration system. Other oils, such as mineral oil, are not compatible with HFCs due to their hydrocarbon base, which does not mix well with the synthetic nature of HFC refrigerants. Similarly, while alkylbenzene oil can be used with some HFCs, it may not provide the same level of performance or compatibility as polyol ester oil. Polyethylene glycol oil, on the other hand, is

9. Which factors affect the resistance of a wire?

- A. Length, insulation type, temperature, and humidity
- B. Length, diameter, material, and temperature**
- C. Diameter, voltage, material, and temperature
- D. Length, material, voltage, and humidity

The factors that affect the resistance of a wire are understood through the principles of electrical conductivity and the physical properties of the wire itself. The correct choice includes length, diameter, material, and temperature. The length of the wire plays a significant role in determining resistance. The longer the wire, the more resistance it will exhibit, since electrons encounter more obstacles and have to travel a greater distance. Diameter, or cross-sectional area, also impacts resistance inversely. A thicker wire (larger diameter) allows more electrons to flow simultaneously, which reduces resistance. Conversely, a thinner wire has a higher resistance due to fewer pathways for current to flow. The material of the wire is crucial as different materials have distinct resistivities. For example, copper has a low resistivity, making it a preferred choice for electrical wiring because it offers less resistance than materials such as steel or aluminum. Temperature affects resistance as well. For most conductive materials, resistance increases with temperature because the atoms in the material vibrate more, leading to a higher likelihood of collisions with moving electrons. The other options introduce factors that do not have a direct impact on resistance, such as humidity or voltage. While voltage is related to the current flowing through the wire, it does not influence the wire's inherent

10. When adding refrigerant from a service cylinder through the suction service valve, how must the cylinder be positioned?

- A. On its side
- B. Upright**
- C. Inverted
- D. At a 45-degree angle

When adding refrigerant from a service cylinder through the suction service valve, the cylinder must be positioned upright. This position allows for the proper flow of refrigerant into the system. In an upright position, the refrigerant vapor, which is the preferred form for most refrigerant types used in air conditioning and refrigeration systems, can escape first. This helps ensure that only the gas phase of the refrigerant enters the suction line, reducing the risk of liquid refrigerant entering the compressor, which could lead to damage or operational issues. Positioning the cylinder improperly, such as on its side or inverted, could cause liquid refrigerant to enter the line, leading to potential hazards and equipment damage. Additionally, having the cylinder at a 45-degree angle may not provide a consistent flow of vapor or liquid that is desirable when charging a system. Therefore, maintaining the cylinder upright ensures safe and efficient refrigerant transfer during servicing.

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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