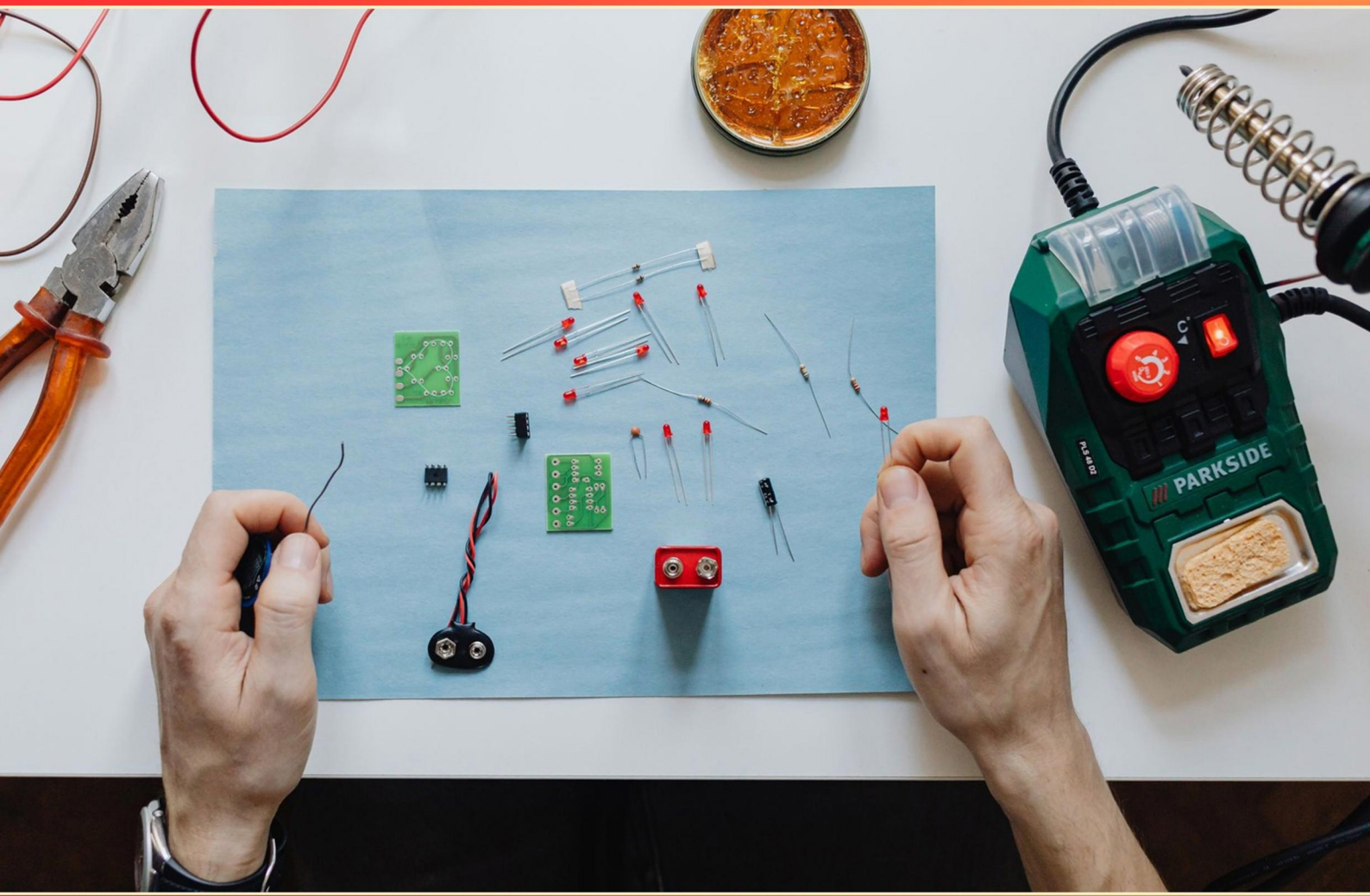
MOHAWK BASIC AC AND REFRIGERATION PRACTICE EXAM (SAMPLE)

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.

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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!

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Questions

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1. What happens to the refrigerant in the evaporator?

A. It condenses into a liquid

B. It absorbs heat and evaporates

C. It loses pressure and temperature

D. It is filtered and recycled

2. How can a cycle be defined in electrical terms?

A. One complete revolution of the power source

B. Two alternations

C. Three phases

D. Four transitions

3. In refrigeration, what role does a condenser typically play?

A. Converts liquid to vapor

B. Removes heat from refrigerant

C. Compresses the refrigerant

D. Ensures proper airflow

4. Locked rotor current is generally how many times greater than the run current?

A. 2-4 times

B. 4-6 times

C. 6-8 times

D. 8-10 times

5. What are the basic voltages that can be taken off of a 4 wire 208 volt system?

A. 120/240/1/60

B. 208/120/1/60

C. 208/3/60 and 208/120/1/60

D. 480/277/1/60

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6. In what way can liquid refrigerant be charged into the system?

A. Low side through evaporator service valve

B. High side through discharge service valve

C. Directly into the compressor

D. Through the accumulator

7. What is a micron?

A. A unit of temperature

B. A unit of pressure

C. A large unit of measurement

D. A small unit of measurement

8. What are devices that use water columns for measuring small pressure changes called?

A. Barometers

B. Manometers

C. Hygrometers

D. Altimeters

9. An evaporator pressure regulator is designed to maintain which of the following?

A. A fixed temperature under load

B. A maximum pressure in the system

C. A minimum pressure or temperature in the evaporator

D. An optimal humidity level

10. What is the mechanism through which heat travels in a heated iron bar?

A. Convection

B. Radiation

C. A combination of convection and radiation

D. Conduction

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Answers

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

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Explanations

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1. What happens to the refrigerant in the evaporator?

A. It condenses into a liquid

B. It absorbs heat and evaporates

C. It loses pressure and temperature

D. It is filtered and recycled

In the evaporator, the refrigerant undergoes a critical process of heat absorption and phase change. As refrigerant enters the evaporator, it is typically in a low-pressure liquid state. The primary function of the evaporator is to absorb heat from the surrounding environment—typically from the air or fluid that needs to be cooled. When this heat is absorbed, the refrigerant begins to evaporate, transitioning from a liquid into a gas. This phase change is key because it effectively removes heat from the space being cooled, allowing for a cooling effect to occur. The ability of the refrigerant to absorb heat while evaporating is what enables air conditioning and refrigeration systems to function efficiently. The other options do not accurately describe the process occurring in the evaporator. For instance, condensing into a liquid refers to what happens in the condenser, while losing pressure and temperature is generally not a direct result of the process in the evaporator—rather, the refrigerant absorbs heat and thus increases in temperature. Filtering and recycling are actions not associated with the fundamental role of the evaporator.

2. How can a cycle be defined in electrical terms?

A. One complete revolution of the power source

B. Two alternations

C. Three phases

D. Four transitions

In electrical terms, a cycle is defined as two alternations. This means that one complete cycle consists of the waveform returning to its original state after completing the positive and negative phases of its oscillation. In alternating current (AC) systems, the voltage and current change direction continuously; the positive alternation is the portion of the cycle where the flow of electricity is in one direction, followed by a negative alternation where the flow changes direction. Hence, two alternations represent a complete cycle of AC, which is critical for understanding waveforms in power systems. Other options, while related to electrical concepts, do not accurately define a cycle. For instance, one complete revolution of the power source may relate to rotational machinery but does not specifically describe the electrical signaling context of a cycle. Three phases refer to a configuration in electrical systems where three alternating currents are used, while four transitions are not a standard term used in defining cycles in AC systems. These concepts contribute important context but do not capture the essence of what constitutes a cycle in electrical terms.

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3. In refrigeration, what role does a condenser typically play?

A. Converts liquid to vapor

B. Removes heat from refrigerant

C. Compresses the refrigerant

D. Ensures proper airflow

In refrigeration systems, the condenser plays a critical role by removing heat from the refrigerant. As the refrigerant passes through the condenser, it releases the heat it absorbed while in the evaporator, transitioning from a gaseous state to a liquid state. This heat exchange process occurs as the refrigerant flows through coils, allowing air or a cooling medium to absorb the heat, thus facilitating the dissipation of thermal energy from the system. The efficiency of the condenser is vital for the overall performance of the refrigeration cycle, ensuring the refrigerant is appropriately cooled and condensed before returning to the expansion device. If the condenser were not effectively removing heat, the refrigerant wouldn't transition properly, leading to a decrease in system efficiency and potential failure. In contrast, while other processes like converting liquid to vapor or compressing the refrigerant are important in a refrigeration cycle, these actions do not occur within the condenser itself. The condenser's primary function centers around heat removal, which is essential for maintaining the cycle's efficiency. Proper airflow also contributes to the effectiveness of the heat exchange process but is not the primary role of the condenser.

4. Locked rotor current is generally how many times greater than the run current?

A. 2-4 times

B. 4-6 times

C. 6-8 times

D. 8-10 times

Locked rotor current is typically the maximum electrical current drawn by an electric motor during the start-up phase when the rotor is not yet turning. This high current occurs because the motor windings present a low resistance until the rotor reaches its operational speed. When considering the relationship between locked rotor current and run current, it is widely accepted that the locked rotor current can be approximately 4 to 6 times greater than the normal running current. This significant increase in current ensures that the motor has enough torque to overcome inertia and start rotating effectively. Once the motor is up to speed, the current will decrease to the normal operating or run current, which is much lower due to the reduced impedance in the windings when the rotor is in motion. The choice indicating that the locked rotor current is 4-6 times greater accurately reflects standard industry practices and provides a realistic expectation for technicians working with electric motors in HVAC systems. Understanding this concept is essential for HVAC professionals, as it helps in troubleshooting and properly sizing electrical components such as circuit breakers and contactors, preventing potential damage to the motor and improving system reliability.

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5. What are the basic voltages that can be taken off of a 4 wire 208 volt system?

A. 120/240/1/60

B. 208/120/1/60

C. 208/3/60 and 208/120/1/60

D. 480/277/1/60

In a 4 wire 208 volt system, the configuration typically consists of three phases and a neutral, commonly referred to as a three-phase, four-wire system. The main voltages that can be derived from this type of system involve both the phase-to-phase and phase-to-neutral voltages. The primary voltage available from phase to phase in a 208 volt system is 208 volts. This is significant in industrial and commercial applications where three-phase power is commonly utilized. When referencing the phase-to-neutral voltage, it is calculated by dividing the phase-to-phase voltage by √3 (approximately 1.732). Therefore, the phase-to-neutral voltage in a 208 volt system is approximately 120 volts. This means that you have: - 208 volts between any two phases (this supports three-phase equipment), - 120 volts between any phase and the neutral (ideal for standard lighting and single-phase circuits). Thus, the voltages that can be taken off this setup are indeed 208/120, which enables the use of both three-phase and single-phase equipment effectively. This is why the option stating 208/3/60 and 208/120/1/60 is accurate, as it reflects both the three-phase and single

6. In what way can liquid refrigerant be charged into the system?

A. Low side through evaporator service valve

B. High side through discharge service valve

C. Directly into the compressor

D. Through the accumulator

Charging liquid refrigerant into the system typically should be done on the low side through the evaporator service valve. This method allows for proper absorption of the refrigerant within the evaporator coil, ensuring efficient cooling operation and preventing damage to the compressor. When liquid refrigerant is introduced into the high side through the discharge service valve, this can lead to several problems. The high side is designed to handle gas refrigerant that has already been compressed, and injecting liquid refrigerant at this point can cause liquid slugging in the compressor. Liquid slugging occurs when liquid refrigerant enters the compressor during the compression cycle, which can result in catastrophic failure or damage to the compressor, as it is not equipped to handle liquid in the compression chamber. Thus, the preferred and safest method for charging liquid refrigerant into an AC or refrigeration system is to do so through the low side service valve, allowing the refrigerant to vaporize and absorb heat as it travels through the evaporator.

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7. What is a micron?

A. A unit of temperature

B. A unit of pressure

C. A large unit of measurement

D. A small unit of measurement

A micron, also known as a micrometer, is a small unit of measurement equivalent to one-millionth of a meter (0.000001 meters). In the context of HVAC and refrigeration, it is primarily used to measure very small distances or diameters, particularly in relation to components such as filters, HVAC ducts, and atmospheric particles. Understanding microns is essential in these fields, especially when discussing the vacuum levels necessary for effective dehydration of systems or measuring the size of particulates that could impact system efficiency. The significance of microns in refrigeration involves the need to achieve very low pressure levels during the evacuation process to ensure the removal of moisture and contaminants from a system. When technicians refer to achieving a specific micron reading in a vacuum, they are emphasizing the importance of precision in these measurements to maintain system integrity and performance.

8. What are devices that use water columns for measuring small pressure changes called?

A. Barometers

B. Manometers

C. Hygrometers

D. Altimeters

Devices that utilize water columns for measuring small pressure changes are known as manometers. Manometers are specifically designed to measure pressure differences by balancing the pressure being measured against a column of liquid, typically water or mercury. The height of the liquid column corresponds to the pressure difference, allowing for precise measurements of small variations in pressure. Manometers are particularly useful in HVAC applications where measuring the slight pressure changes within a system can help ensure optimal operation and safety. The sensitivity of manometers makes them ideal for such tasks, as even minor fluctuations can significantly impact system performance. In contrast, other devices listed, like barometers, measure atmospheric pressure using different principles; hygrometers are used for measuring humidity levels; and altimeters primarily measure altitude based on changes in atmospheric pressure, without the specific application of monitoring small pressure changes within a controlled environment.

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9. An evaporator pressure regulator is designed to maintain which of the following?

A. A fixed temperature under load

B. A maximum pressure in the system

C. A minimum pressure or temperature in the evaporator

D. An optimal humidity level

An evaporator pressure regulator's primary function is to maintain a minimum pressure in the evaporator. By doing so, it ensures that the refrigerant within the evaporator does not fall below a certain pressure, which is critical for the efficient operation of the refrigeration cycle. Maintaining this minimum pressure allows the evaporator to operate effectively, preventing issues such as insufficient cooling or potential damage to the system due to low refrigerant levels. This regulation helps to stabilize the conditions within the evaporator, ensuring that heat absorption occurs efficiently. If the pressure were allowed to drop too low, the refrigerant might not evaporate properly, leading to reduced cooling performance and potential system failure. Therefore, the correct answer reflects the essential role of the pressure regulator in maintaining the necessary conditions for effective heat exchange within the evaporator.

10. What is the mechanism through which heat travels in a heated iron bar?

A. Convection

B. Radiation

C. A combination of convection and radiation

D. Conduction

In a heated iron bar, the mechanism through which heat travels is conduction. Conduction is the process of heat transfer through a material without any movement of the material itself. In solids, such as iron, heat is conducted by the vibration and collision of atoms and molecules within the material. When one end of the iron bar is heated, the atoms at that end gain energy and begin to vibrate more vigorously. These energized atoms then transfer their energy to adjacent, cooler atoms through direct contact, causing those atoms to vibrate and thus increasing their energy. This transfer of thermal energy continues along the length of the bar until heat is evenly distributed throughout, assuming sufficient time. Convection is not the correct mechanism in this context, as it involves the movement of fluids (liquids or gases) and is not applicable to solids. Radiation, on the other hand, refers to heat transfer through electromagnetic waves and does not require a medium, but it is not the primary means of heat transfer within a solid object like an iron bar. While there can be a combination of heat transfer methods in various scenarios, the direct transfer of heat through a solid iron bar under uniform heating is solely through conduction.

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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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