

BOMA-HVAC PRACTICE TEST (SAMPLE)

STUDY GUIDE



Prepare with structure. Pass with confidence



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Table of Contents

Copyright	1
Table of Contents	2
Introduction	3
How to Use This Guide	4
Questions	5
Answers	8
Explanations	10
Next Steps	15

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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. High relative humidity can affect human comfort by making the air feel _____ than it actually is.
 - A. Colder
 - B. Drier
 - C. Hotter
 - D. More polluted
2. What is the function of the compressor in an HVAC system?
 - A. To distribute cold air throughout the building
 - B. To compress refrigerant gas and raise its temperature and pressure
 - C. To regulate air humidity levels
 - D. To filter contaminants from the air
3. What is the partial pressure due to air in a centrifugal unit operating with R11 at 8.8 PSIG condensing pressure?
 - A. 4.5
 - B. 5.6
 - C. 6.7
 - D. 7.8
4. What is defined as the amount of moisture in the air compared to how much it can hold?
 - A. Absolute humidity
 - B. Relative humidity
 - C. Specific humidity
 - D. Vapor pressure
5. Which factor controls the low side float in a refrigeration system?
 - A. Condensation of refrigerant in the condenser
 - B. Evaporation of refrigerant in the evaporator
 - C. Expansion of refrigerant in the expansion valve
 - D. Compression of refrigerant in the compressor

- 6. What is one benefit of monitoring HVAC systems through automation?**
- A. Increased manual labor
 - B. Delayed response to system failures
 - C. Improved energy efficiency and performance
 - D. Higher energy consumption
- 7. What is the purpose of using low-emission materials in buildings?**
- A. To reduce electricity costs
 - B. To improve structural integrity
 - C. To enhance indoor air quality
 - D. To lower noise levels
- 8. What does BOMA stand for in the context of HVAC?**
- A. Building Operations and Maintenance Association
 - B. Building Owners and Managers Association
 - C. Building Optimization and Management Agency
 - D. Building Organization and Maintenance Association
- 9. As the temperature of refrigerants increases, how does it affect the rate of heat transfer?**
- A. Increases
 - B. Decreases
 - C. Remains constant
 - D. Varies randomly
- 10. Heat which causes a change of state is ____.**
- A. Latent heat
 - B. Sensible heat
 - C. Specific heat
 - D. Convection heat

Answers

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

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Explanations

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1. High relative humidity can affect human comfort by making the air feel _____ than it actually is.

- A. Colder
- B. Drier
- C. Hotter**
- D. More polluted

High relative humidity affects human comfort primarily by making the air feel hotter than it actually is. When humidity is high, sweat does not evaporate as efficiently from the skin. Since evaporation of sweat is a key mechanism the body uses to cool itself, this reduced evaporation increases the perceived temperature, leading individuals to feel hotter. When relative humidity is low, sweat evaporates quickly, providing a cooling effect and helping to regulate body temperature. However, in conditions of high humidity, the cooling process is compromised, ultimately resulting in discomfort due to the body's inability to effectively dissipate heat. Therefore, the correct answer highlights the impact of high humidity on how temperature is perceived in relation to actual conditions.

2. What is the function of the compressor in an HVAC system?

- A. To distribute cold air throughout the building
- B. To compress refrigerant gas and raise its temperature and pressure**
- C. To regulate air humidity levels
- D. To filter contaminants from the air

The function of the compressor in an HVAC system is to compress refrigerant gas and raise its temperature and pressure. This is a critical process in the refrigeration cycle. When the refrigerant gas enters the compressor, it is at a low pressure and temperature. The compressor then uses mechanical energy to compress the gas, which increases both its pressure and temperature. This transformation is essential because it allows the refrigerant to circulate through the rest of the HVAC system, facilitating heat exchange. As the refrigerant moves through the system, it will eventually release heat to the outside environment as it condenses, becoming a liquid again. The entire cycle relies on this crucial process of the compressor to efficiently move thermal energy from inside a building to the outside, thus helping to regulate indoor temperatures. The other options refer to different functions within an HVAC system. Distributing cold air pertains to the role of air handlers and ducts, regulating humidity involves the system's dehumidifying capabilities, and filtering contaminants is the responsibility of air filters within the system. These aspects complement the overall HVAC function but are not the primary role of the compressor itself.

3. What is the partial pressure due to air in a centrifugal unit operating with R11 at 8.8 PSIG condensing pressure?

- A. 4.5
- B. 5.6**
- C. 6.7
- D. 7.8

To determine the partial pressure due to air in a centrifugal unit operating with R11 at a condensing pressure of 8.8 PSIG, it is important to understand the relationship between pressure and the presence of air in the refrigerant system. The condensing pressure of 8.8 PSIG indicates the pressure at which the refrigerant (R11) is condensing in the system. To find the partial pressure of air, one needs to convert the PSIG reading to PSIA (absolute pressure), which involves adding the atmospheric pressure (approximately 14.7 PSIA at sea level) to the PSIG reading. This is crucial for accurately assessing the total pressure in the system. Once the absolute pressure of the refrigerant is calculated, you can apply appropriate equations and thermodynamic principles relevant to the specific system and conditions to evaluate the partial pressure resulting from the air content. In many HVAC systems, the partial pressure of non-condensable gases (like air) is closely related to operational pressures. Based on these calculations and the physical principles involved, the reading that corresponds to the typical behavior of air in such systems, given the conditions indicated, leads to the conclusion that the correct answer is 5.6. This reflects the expected partial

4. What is defined as the amount of moisture in the air compared to how much it can hold?

- A. Absolute humidity
- B. Relative humidity**
- C. Specific humidity
- D. Vapor pressure

The term that accurately describes the amount of moisture in the air compared to how much moisture that air can actually hold is relative humidity. This measurement is expressed as a percentage and indicates how close the air is to being fully saturated with moisture. For example, if the relative humidity is 50%, it means the air is holding half of the moisture it is capable of holding at a certain temperature. Relative humidity is a critical concept in HVAC because it affects both thermal comfort and the efficiency of air conditioning systems. When relative humidity is too high or too low, it can lead to discomfort, problems with condensation, and potential damage to building materials. This term is distinct from absolute humidity, which measures the total amount of water vapor in the air regardless of temperature, specific humidity, which is the mass of water vapor per unit mass of air (including the water vapor), and vapor pressure, which refers to the pressure exerted by water vapor in the air. Each of these measures describes different aspects of moisture in the air but does not capture the concept of moisture relative to the maximum amount the air can hold like relative humidity does.

5. Which factor controls the low side float in a refrigeration system?

- A. Condensation of refrigerant in the condenser
- B. Evaporation of refrigerant in the evaporator**
- C. Expansion of refrigerant in the expansion valve
- D. Compression of refrigerant in the compressor

The factor that controls the low side float in a refrigeration system is the evaporation of refrigerant in the evaporator. The evaporator is where the refrigerant absorbs heat from the environment, leading to its phase change from liquid to gas. This process allows the refrigerant to cool the surrounding area effectively. In a refrigeration cycle, as the refrigerant evaporates in the evaporator, it creates a low-pressure condition on the low side of the system. This low pressure is crucial because it directly influences the system's capacity to maintain proper cooling. If the refrigerant does not evaporate efficiently, the pressure in the low side may rise, which can disrupt the balance and efficiency of the refrigeration cycle. Therefore, the evaporation process plays a pivotal role in controlling the float level in systems equipped with float switches or similar mechanisms, as it ensures that the refrigerant maintains appropriate levels in the evaporator, optimizing overall system operation.

6. What is one benefit of monitoring HVAC systems through automation?

- A. Increased manual labor
- B. Delayed response to system failures
- C. Improved energy efficiency and performance**
- D. Higher energy consumption

Monitoring HVAC systems through automation provides the significant benefit of improved energy efficiency and performance. Automated systems can continuously track various parameters, such as temperature, humidity, and airflow rates. This data allows for real-time adjustments, optimizing system operation and reducing energy waste. Automation can identify inefficiencies by analyzing trends and patterns over time, enabling proactive adjustments rather than reactive measures. For instance, if a system is using more energy than necessary to maintain temperature, the automated system can make corrections, adjust set points, or switch to energy-saving modes. Additionally, by ensuring that HVAC systems operate within their designed parameters, automated monitoring can enhance overall system longevity and reliability, leading to better performance and lower operational costs. This approach effectively aligns system output with real demand, supporting both environmental goals and cost savings.

7. What is the purpose of using low-emission materials in buildings?

- A. To reduce electricity costs
- B. To improve structural integrity
- C. To enhance indoor air quality**
- D. To lower noise levels

The use of low-emission materials in buildings primarily aims to enhance indoor air quality. These materials are designed to release fewer volatile organic compounds (VOCs) and other harmful pollutants into the air, which can improve the health and comfort of building occupants. By reducing the concentration of indoor air contaminants, such as formaldehyde, benzene, and other toxic substances, low-emission materials contribute to a healthier living and working environment. Improved indoor air quality has been linked to better respiratory health, reduced allergy symptoms, and overall enhanced well-being for those who occupy the space. While reducing electricity costs, improving structural integrity, and lowering noise levels are important aspects of building design and construction, they are not the primary focus of utilizing low-emission materials. These materials are specifically formulated with the intention of minimizing harmful emissions, rather than addressing energy efficiency, structural performance, or sound control.

8. What does BOMA stand for in the context of HVAC?

- A. Building Operations and Maintenance Association
- B. Building Owners and Managers Association**
- C. Building Optimization and Management Agency
- D. Building Organization and Maintenance Association

BOMA stands for Building Owners and Managers Association. This organization plays a crucial role in the property management and commercial real estate sectors, providing resources, advocacy, and standards for building owners and managers. BOMA focuses on enhancing the operational efficiency, sustainability, and financial performance of commercial properties, which directly impacts HVAC systems among other building systems. Understanding BOMA's focus helps professionals in the HVAC field align their practices with industry standards and operational guidelines set forth by the association, enhancing their practices in building management and maintenance. This is particularly important in understanding how HVAC systems should be operated and maintained in accordance with best practices for energy efficiency, occupant comfort, and regulatory compliance.

9. As the temperature of refrigerants increases, how does it affect the rate of heat transfer?

- A. Increases
- B. Decreases**
- C. Remains constant
- D. Varies randomly

The relationship between the temperature of refrigerants and the rate of heat transfer is important in the HVAC field. As the temperature of refrigerants increases, the ability of the refrigerant to absorb and transfer heat typically decreases. This is because higher temperatures result in a lower temperature differential between the refrigerant and the surrounding environment. The efficiency of heat transfer is largely dictated by this temperature difference; when the refrigerant is warmer, it is less effective at absorbing additional heat from the environment due to the diminished driving force for heat exchange. Moreover, at higher temperatures, the refrigerant may begin to approach its critical temperature, which can further impact its phase characteristics and heat transfer capabilities. In practical applications, this concept is essential for designing and operating cooling systems efficiently, as maintaining optimal refrigerant temperatures is crucial to maximizing heat transfer rates.

10. Heat which causes a change of state is ____.

- A. Latent heat**
- B. Sensible heat
- C. Specific heat
- D. Convection heat

The term "latent heat" refers to the heat energy required to change the state of a substance without changing its temperature. This phenomenon occurs during phase transitions, such as when ice melts into water or when water vaporizes into steam. In these processes, heat is added to or removed from the substance, but the temperature remains constant throughout the transition until the entire substance has changed state. For example, when ice melts, it absorbs latent heat from the environment to break the bonds between the water molecules, resulting in the transformation to liquid water. Understanding latent heat is crucial in HVAC systems, as it plays a vital role in processes like evaporation and condensation, which are fundamental to refrigeration and air conditioning systems. The other concepts such as sensible heat, specific heat, and convection heat involve different mechanisms of heat transfer or storage and do not specifically relate to changes in state.

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://bomahvac.examzify.com>

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

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