BOMA-HVAC PRACTICE TEST (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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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. Heat which causes a change of state is _____.

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

2. Which of the following types of fans are classified as centrifugal fans?

A. Axial fans
B. Forward curved, radial, and backward curved fans
C. Portable fans
D. Exhaust fans

3. What is a key advantage of using a flooded type evaporator?

A. Increased energy consumption
B. Better heat transfer
C. Lower initial cost
D. Simpler installation

4. Why might an organization choose to implement BAS?

A. To maintain outdated technology
B. To improve HVAC efficiency and reduce operational costs
C. To enable manual controls
D. To limit system capabilities

5. Which statement does NOT apply to backward inclined fans?

A. They have a higher efficiency
B. They are self-cleaning
C. They can handle varying air volumes
D. They have an overloading BHP horsepower curve

6. What factors can affect the efficiency of an HVAC system?

A. Only proper sizing
B. Proper sizing, duct design, insulation levels, and regular maintenance
C. Only duct design
D. Insulation levels and duct design only

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7. The most common type of heat pump used is the _____ heat pump?

A. Geothermal

B. Air to air

C. Water source

D. Ground source

8. Limit controls are generally wired into the circuit in _____.

A. Parallel

B. Series

C. Sub-circuits

D. Multiple layers

9. What crucial factor does human well-being largely depend on?

A. Daily activity levels

B. Physical appearance

C. Body's metabolism

D. Social interactions

10. The quantity of air moving through a fan system is expressed in _____?

A. CFM

B. RPM

C. BTU

D. Wattage

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Answers

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

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Explanations

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1. 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.

2. Which of the following types of fans are classified as centrifugal fans?

A. Axial fans

B. Forward curved, radial, and backward curved fans

C. Portable fans

D. Exhaust fans

Centrifugal fans are specifically designed to move air or gases at a right angle to the intake. They accomplish this by utilizing a rotating impeller that throws the air outward, generating a higher pressure compared to axial fans, which move air along the same axis as the impeller. The correct classification of centrifugal fans includes forward curved, radial, and backward curved fans. Each of these types has a unique construction and operational mechanism. Forward curved fans are typically used in applications requiring high airflow at low pressure, while backward curved and radial fans are favored for their efficiency at higher pressures. These designs allow centrifugal fans to be versatile in various HVAC applications, from air conditioning systems to industrial ventilation. Other types like axial fans, portable fans, and exhaust fans serve different purposes and function through different mechanisms. Axial fans move air parallel to the shaft and are generally used for larger air movement at lower pressures. Portable fans are typically small, movable units designed for convenience rather than high performance typically associated with centrifugal types. Exhaust fans are designed mainly to expel air from a space but do not inherently define a centrifugal mechanism since they can utilize axial or centrifugal designs depending on the specific type. Thus, the classification of centrifugal fans correctly identifies the types that utilize the principles of

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3. What is a key advantage of using a flooded type evaporator?

A. Increased energy consumption

B. Better heat transfer

C. Lower initial cost

D. Simpler installation

A flooded type evaporator utilizes a larger volume of refrigerant in contact with the evaporator coils, which allows for more efficient heat transfer. This is due to the fact that a flooded evaporator maintains a liquid refrigerant in the evaporator section, optimizing the phase change from liquid to vapor. The continuous contact between the liquid refrigerant and the surface area of the coils enhances the heat transfer coefficient, leading to greater efficiency and improved cooling performance. This advantage makes flooded evaporators particularly beneficial in applications where maximum cooling performance is required, such as in large commercial refrigeration systems. The increased heat transfer capability contributes directly to the system's overall efficiency, which can lead to lower operational costs over time.

4. Why might an organization choose to implement BAS?

A. To maintain outdated technology

B. To improve HVAC efficiency and reduce operational costs

C. To enable manual controls

D. To limit system capabilities

An organization might choose to implement a Building Automation System (BAS) primarily to improve HVAC efficiency and reduce operational costs. BAS integrates various building systems, including heating, ventilation, and air conditioning, allowing for optimized control and management of these systems. By using a BAS, facilities can monitor performance in real-time, implement automated scheduling, and adjust systems based on occupancy or time of day, which contributes to significant energy savings. This enhanced efficiency not only leads to decreased utility costs but also extends the lifespan of equipment through more controlled operation. Furthermore, a BAS often provides data analytics capabilities, allowing organizations to make informed decisions about energy usage and building operations, further enhancing cost-effectiveness and sustainability initiatives. Overall, the adoption of a BAS aligns with efforts to modernize building management and achieve better environmental performance.

5. Which statement does NOT apply to backward inclined fans?

A. They have a higher efficiency

B. They are self-cleaning

C. They can handle varying air volumes

D. They have an overloading BHP horsepower curve

The statement regarding backward inclined fans having an overloading BHP horsepower curve is not accurate. Backward inclined fans are designed to operate more efficiently across a range of conditions, and their horsepower requirements don't exponentially increase with decreasing airflow. Instead, they generally maintain their efficiency and performance, which is a hallmark of their design. Options that indicate higher efficiency, self-cleaning properties, and the ability to handle varying air volumes highlight the beneficial aspects of backward inclined fans. Higher efficiency means they consume less power for the same output, while self-cleaning is due to their design minimizing dust and debris accumulation. Additionally, their ability to handle varying air volumes makes them versatile for different applications, distinguishing them from fans that might struggle with similar conditions.

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6. What factors can affect the efficiency of an HVAC system?

A. Only proper sizing

B. Proper sizing, duct design, insulation levels, and regular maintenance

C. Only duct design

D. Insulation levels and duct design only

Efficiency in an HVAC system is influenced by a combination of several key factors, including proper sizing, duct design, insulation levels, and regular maintenance. Proper sizing is critical; if an HVAC system is too large or too small for the space it is intended to serve, it can lead to inefficient operation. A system that is too large will cycle on and off frequently, wasting energy and not effectively regulating temperature. Conversely, an undersized system may run continuously, struggling to maintain comfort levels. Duct design also plays a significant role in efficiency. Well-designed ductwork minimizes resistance to airflow, ensuring that conditioned air reaches its destination effectively. Poor duct design can lead to air leaks, increased energy consumption, and uneven temperature distribution within the building. Insulation levels are another essential factor. Adequate insulation helps prevent heat loss in the winter and keeps heat out in the summer, allowing the HVAC system to work more efficiently. Poor insulation can force the system to work harder to maintain desired indoor temperatures, again leading to higher energy consumption. Regular maintenance is crucial as well; routine checks and servicing can prevent issues that might decrease system efficiency over time. Maintenance tasks such as cleaning filters, checking refrigerant levels, and ensuring all parts are functioning correctly help to keep

7. The most common type of heat pump used is the _____ heat pump?

A. Geothermal

B. Air to air

C. Water source

D. Ground source

The most common type of heat pump used is the air-to-air heat pump. This type operates by transferring heat between the air inside a building and the air outside. Air-to-air heat pumps are popular due to their relatively lower installation costs and simpler installation processes compared to other types of heat pumps, like geothermal or ground source systems which require more extensive ground work and can be more expensive to install. Air-to-air heat pumps are also versatile, providing both heating and cooling functions depending on the season. They work efficiently in moderate climates and are suitable for residential applications, contributing to their widespread adoption. The technology has advanced over the years, improving their performance even in colder temperatures. Thus, their combination of efficiency, cost-effectiveness, and ease of use has made them the predominant choice for many homeowners and commercial buildings.

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8. Limit controls are generally wired into the circuit in _____.

A. Parallel

B. Series

C. Sub-circuits

D. Multiple layers

Limit controls are safety devices designed to prevent equipment from exceeding predetermined operating conditions. They are typically wired into the circuit in series with the operating components, which ensures that any interruption or change in the status of the limit control directly affects the operation of the entire system. When limit controls are wired in series, they act as a safeguard that disconnects the controlling component (like a motor or heating element) when a limit is reached, such as a maximum temperature or pressure. This series configuration ensures that the circuit is complete only when all conditions are within safe limits. If a limit condition is triggered, the series circuit is broken, effectively shutting down the equipment to prevent damage or unsafe operating conditions. In contrast, parallel wiring would allow the main component to continue operating even if a limit control is triggered, which could lead to unsafe conditions. Thus, wiring limit controls in series is crucial for safety and operational integrity in HVAC systems.

9. What crucial factor does human well-being largely depend on?

A. Daily activity levels

B. Physical appearance

C. Body's metabolism

D. Social interactions

The well-being of individuals is significantly influenced by the body's metabolism because metabolism encompasses the biochemical processes that convert food into energy. An efficient metabolism is essential for maintaining energy levels, managing weight, and supporting overall health. When metabolism functions effectively, it aids in the regulation of bodily functions such as sleep, digestion, and even mood, which all contribute to a person's well-being. While daily activity levels, physical appearance, and social interactions can also play roles in well-being, they are often connected to metabolic health. For instance, regular physical activity can enhance metabolic rate and improve energy balance, while social interactions can impact stress levels and mental health, which are indirectly related to metabolic processes. However, the core physiological factor underpinning overall well-being is the body's ability to effectively utilize energy through metabolism.

10. The quantity of air moving through a fan system is expressed in _____?

A. CFM

B. RPM

C. BTU

D. Wattage

The quantity of air moving through a fan system is expressed in CFM, which stands for Cubic Feet per Minute. This measurement indicates the volume of air that is moved by the fan within a minute and is crucial for understanding the capacity of ventilation and air distribution in a building or space. CFM is a key parameter in HVAC systems, as it helps to determine whether the system can adequately supply fresh air, maintain proper airflow, and ensure comfort conditions. In contrast, RPM, or Revolutions Per Minute, measures the speed at which the fan blades are spinning but does not directly indicate the volume of air being moved. BTU, or British Thermal Unit, is a measurement of thermal energy and is used to describe heating and cooling capacity, but it does not relate to airflow. Wattage is a measure of electrical power consumed by a fan but does not provide information about the air movement itself. Thus, CFM is the most appropriate unit for expressing the quantity of air in a fan system.

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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:

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

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