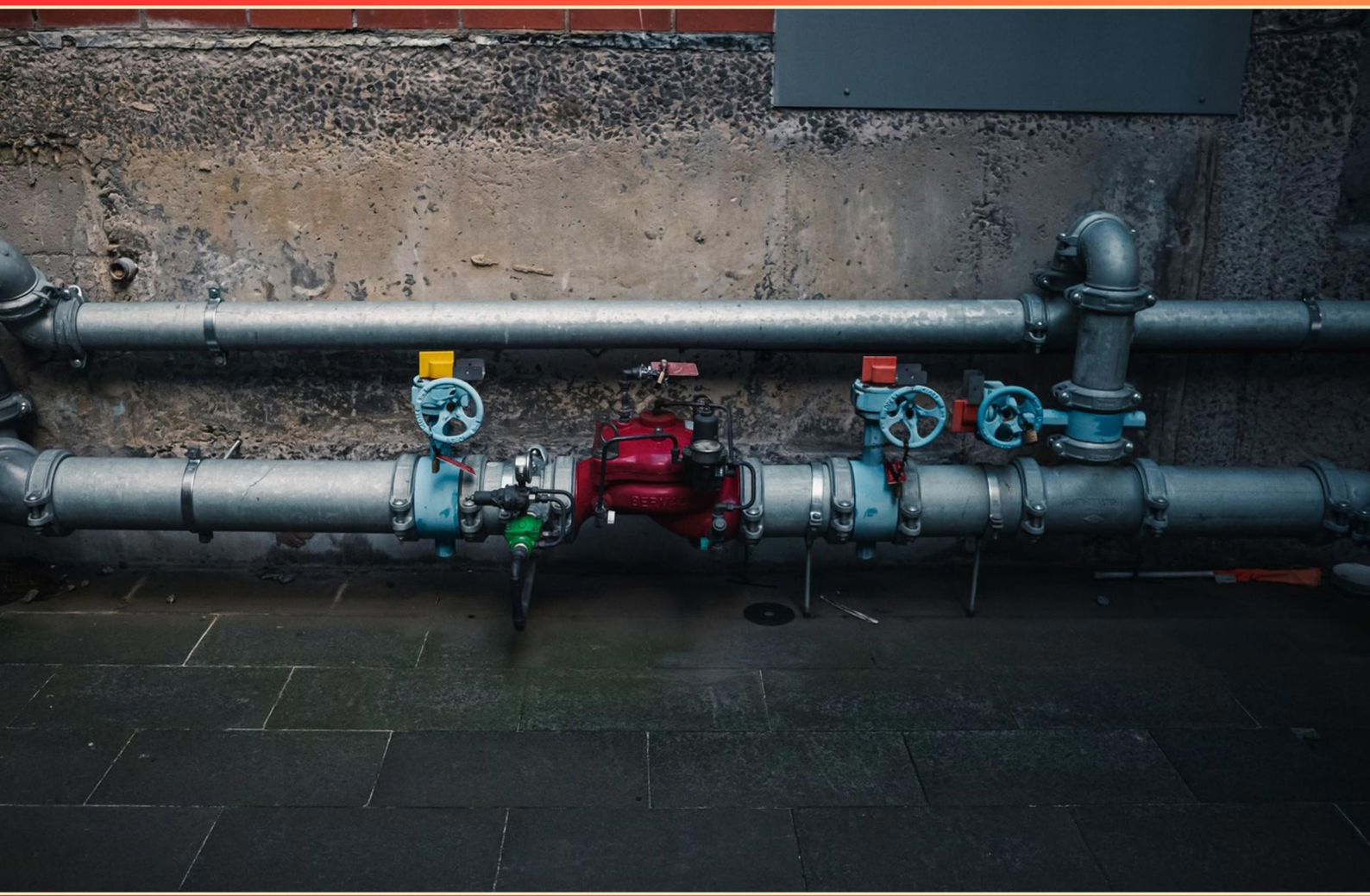
MARYLAND HVAC MASTERS PRACTICE TEST (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

VISIT US ONLINE FOR THE FULL VERSION STUDY GUIDE

https://mdhvacmasters.examzify.com

Copyright © 2026 by Examzify - A Kaluba Technologies Inc. product.

ALL RIGHTS RESERVED.

No part of this book may be reproduced or transferred in any form or by any means, graphic, electronic, or mechanical, including photocopying, recording, web distribution, taping, or by any information storage retrieval system, without the written permission of the author.

Notice: Examzify makes every reasonable effort to obtain accurate, complete, and timely information about this product from reliable sources.

SAMPLE

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

SAMPLE

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.

SAMPLE

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!

SAMPLE

Questions

SAMPLE

1. **Which standards are typically used for load calculations in HVAC installations?**

   A. NFPA 70 and ASHRAE

   B. EPA energy guidelines

   C. ISO 9001 and OSHA

   D. NEC and ASHRAE guidance

2. **Materials used in plenums shall have a flame rating of _____.**

   A. 15

   B. 25

   C. 20

   D. 30

3. **When capacitors are connected in parallel, the total capacitance is the sum of the individual capacitances.**

   A. They add

   B. They multiply

   C. They subtract

   D. They divide

4. **Explain the difference between a one-pipe and two-pipe hydronic heating system.**

   A. One-pipe has a single pipe loop for supply and return.

   B. Two-pipe uses separate supply and return lines for circulation.

   C. They differ in venting orientation

   D. They refer to electrical circuits

5. **_____ temperature determines the defrost termination on a heat pump using time initiated temperature.**

   A. Supply air temperature

   B. Ambient temperature

   C. Indoor temperature

   D. Outdoor temperature

SAMPLE

6. What is the maximum operating pressure in an air duct system?

A. 5.0 IWC

B. 10.0 IWC

C. 15.0 IWC

D. 20.0 IWC

7. For IMC metallic ducts installed in/under concrete, which option is not a required compliance?

A. Encased on all sides with minimum of 2 inches concrete

B. Properly secured before pouring concrete

C. Sloped to an excessive plenum for drainage

D. Accessible for cleaning

8. What does the acronym HSPF stand for?

A. Heating Seasonal Performance Factor

B. Hybrid System Power Factor

C. High Speed Pressure Factor

D. Healing Seasonal Performance Factor

9. The unobstructed passageway around a boiler on all sides should be at least _____ inches.

A. 12 Inches

B. 18 Inches

C. 24 Inches

D. 30 Inches

10. The amount of makeup air is what in relation to the exhaust air in a kitchen exhaust system?

A. Make up air should be equal to exhaust air

B. Make up air should be greater than exhaust air

C. Make up air should be less than exhaust air

D. There is no relation between makeup and exhaust air

SAMPLE

Answers

SAMPLE

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

SAMPLE

Explanations

SAMPLE

1. Which standards are typically used for load calculations in HVAC installations?

A. NFPA 70 and ASHRAE

B. EPA energy guidelines

C. ISO 9001 and OSHA

D. NEC and ASHRAE guidance

Understanding load calculations in HVAC design relies on standards that ensure both accurate thermal sizing and the electrical support for the equipment. ASHRAE provides the guidance for calculating heating and cooling loads, using climate data, building envelope, occupancy, ventilation, and internal gains to determine what the system must handle. The electrical side is governed by the NEC, which specifies how conductors, overcurrent protection, and service equipment must be sized to safely carry the calculated load. Together, NEC and ASHRAE guidance ensure the system is sized correctly and wired safely to meet performance and safety requirements.

2. Materials used in plenums shall have a flame rating of _____.

A. 15

B. 25

C. 20

D. 30

Materials used in plenums must resist flame spread along surfaces, because plenums are air-handling spaces where a fire can quickly travel through ducts and over ceilings if the materials burn or allow flames to spread. Setting a flame-spread rating limit keeps the fire from propagating rapidly through the entire HVAC system, giving more time for containment and occupant safety. The standard limit used in many codes for materials in plenums is a flame-spread rating of 25 or less, measured by tests that assess how quickly flames travel across a material's surface. A higher rating, like 30, would permit more rapid flame propagation, while lower ratings like 15 or 20 are more restrictive than the code requires. That's why 25 is the correct requirement.

3. When capacitors are connected in parallel, the total capacitance is the sum of the individual capacitances.

A. They add

B. They multiply

C. They subtract

D. They divide

In a parallel connection, the voltage across each capacitor is the same, and the total charge stored is the sum of the individual charges. Since each capacitor has Q = C V, the total charge is Q_total = C1 V + C2 V + ... = V (C1 + C2 + ...). The equivalent capacitance is defined as Ceq = Q_total / V, which gives Ceq = C1 + C2 + ... So the total capacitance adds up when capacitors share the same voltage, effectively increasing the ability to store charge at that voltage. This isn't about multiplying the values; multiplying would imply a different relationship between charge and voltage that doesn't occur in a parallel arrangement. Subtracting or dividing the capacitances doesn't reflect how charges accumulate across capacitors connected in parallel.

SAMPLE

4. Explain the difference between a one-pipe and two-pipe hydronic heating system.

A. One-pipe has a single pipe loop for supply and return.

B. Two-pipe uses separate supply and return lines for circulation.

C. They differ in venting orientation

D. They refer to electrical circuits

In a one-pipe system, hot water travels through a single pipe loop and returns to the boiler through the same pipe. Radiators tap into that same loop in sequence, so the water that leaves the boiler gets progressively cooler as it passes through each radiator. This setup is simple and uses less piping, but heating can be uneven along the loop and balancing is done by adjusting radiator valves. In a two-pipe system, there are separate supply and return lines for each radiator, so hot water is delivered to each radiator through its own supply and returns through a separate line. This parallel arrangement keeps the supply temperature more consistent, makes balancing and zoning easier, and allows more flexible system design, at the cost of more piping and a bit more complexity.

5. _____ temperature determines the defrost termination on a heat pump using time initiated temperature.

A. Supply air temperature

B. Ambient temperature

C. Indoor temperature

D. Outdoor temperature

In a time-initiated, temperature-terminated defrost control, the system starts defrost after a set time, but stops defrost when outdoor ambient temperature reaches a defined setpoint. This uses the outdoor air as the signal that conditions are now favorable enough for ice to melt and for normal heating to resume, so you don't waste time defrosting longer than needed. Indoor temperature or supply-air temperature don't reflect the conditions on the outdoor coil, so they aren't used to end defrost. The ambient outdoor temperature is the key indicator used to terminate the cycle.

6. What is the maximum operating pressure in an air duct system?

A. 5.0 IWC

B. 10.0 IWC

C. 15.0 IWC

D. 20.0 IWC

The key idea is that maximum operating pressure is the highest positive static pressure the duct system is designed to withstand during normal operation, measured in inches of water column (IWC). This rating depends on the duct materials, joints, and components, as well as the fan and system layout. For many standard air-duct installations, 10.0 IWC provides enough headroom to handle typical fan pressures and losses across ducts, fittings, and filters without stressing seams or causing leaks. Lower values like 5.0 IWC are sometimes insufficient for longer runs or more complex layouts, while higher values such as 15.0 or 20.0 IWC are reserved for specialized, high-velocity industrial systems with heavier-duty construction. Therefore, 10.0 IWC is the commonly accepted maximum operating pressure for many duct systems.

SAMPLE

7. For IMC metallic ducts installed in/under concrete, which option is not a required compliance?

A. Encased on all sides with minimum of 2 inches concrete

B. Properly secured before pouring concrete

C. Sloped to an excessive plenum for drainage

D. Accessible for cleaning

When ducts are installed in or under concrete, the emphasis is on protecting the duct, keeping it in place, and managing moisture, not on accessibility for routine cleaning. The duct must be encased on all sides with a minimum of two inches of concrete to shield it from damage and to provide a stable, continuous barrier. It also must be properly secured before pouring the concrete so it doesn't shift or create gaps during placement. Sloping the duct toward a drainage path helps prevent condensate or moisture from pooling inside the duct, reducing the risk of corrosion or blockages. Accessibility for cleaning isn't required in this scenario because buried ducts aren't practically reachable for cleaning after installation; any needed maintenance would be addressed by access cuts or design considerations, not by a cleaning-access requirement.

8. What does the acronym HSPF stand for?

A. Heating Seasonal Performance Factor

B. Hybrid System Power Factor

C. High Speed Pressure Factor

D. Healing Seasonal Performance Factor

HSPF is a seasonal efficiency rating for heating performance of heat pumps. It stands for Heating Seasonal Performance Factor. The value is found by dividing the total heat delivered by the system over the heating season (in BTUs) by the total electrical energy consumed (in watt-hours) during that same period. A higher HSPF means the unit provides more heat per unit of electricity, so it's a key way to compare how efficient different heat pumps are in real heating conditions. The other options don't reflect the standard HVAC term, while Heating Seasonal Performance Factor is the recognized designation.

9. The unobstructed passageway around a boiler on all sides should be at least _____ inches.

A. 12 Inches

B. 18 Inches

C. 24 Inches

D. 30 Inches

Having enough space around a boiler for unobstructed access is essential for safe servicing and proper operation. The minimum clearance of 18 inches on all sides gives technicians room to open panels, reach controls and shutoffs, and work with connected gas, water, and vent pipes without crowding or forcing space. It also allows enough room for safe movement around the unit during maintenance, which helps prevent accidental contact with hot surfaces and ensures that any combustion air and exhaust paths aren't blocked. While some installations may require more space based on the specific boiler model or manufacturer recommendations, 18 inches is the standard minimum to keep the area serviceable and safe. Clearances smaller than this hinder maintenance and can create safety or performance issues, whereas larger clearances are only necessary if the appliance manual or local codes call for them.

SAMPLE

10. The amount of makeup air is what in relation to the exhaust air in a kitchen exhaust system?

A. Make up air should be equal to exhaust air

B. Make up air should be greater than exhaust air

C. Make up air should be less than exhaust air

D. There is no relation between makeup and exhaust air

To keep the space balanced, the amount of makeup air should match the exhaust air. When the hood vents air out, an equal amount of outdoor air must be supplied to the room so the pressure stays neutral and the indoor environment remains comfortable. If makeup air is too little, negative pressure can pull in unconditioned air, odors, or moisture from around cracks and fittings. If makeup air is excessive, positive pressure can push conditioned air out and waste energy. In practice, makeup air is sized to roughly equal the exhaust rate and is often tempered or conditioned to fit the space's comfort needs.

SAMPLE

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://mdhvacmasters.examzify.com

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

SAMPLE