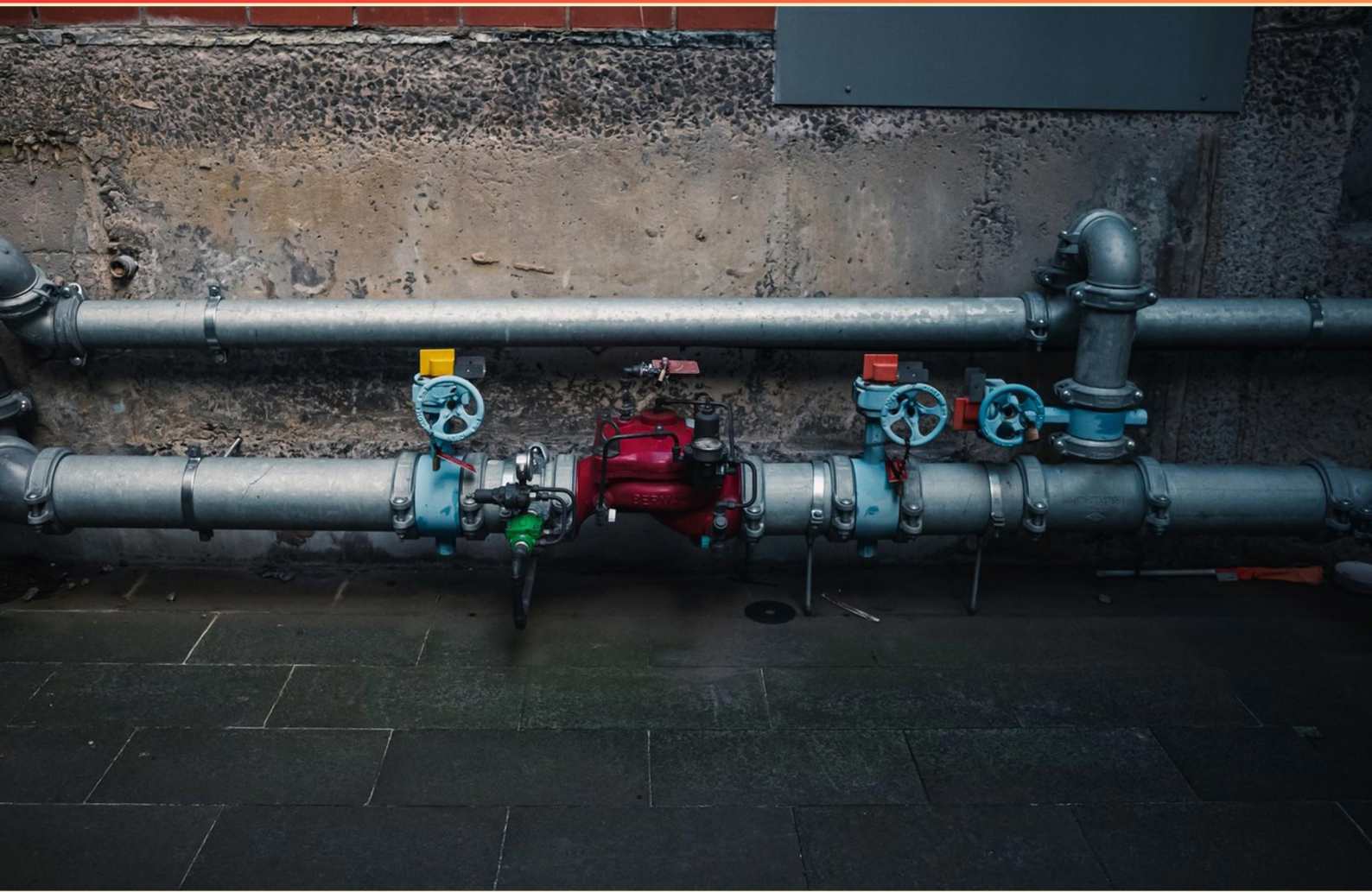


MARYLAND HVAC MASTERS PRACTICE TEST (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

VISIT US ONLINE FOR
THE FULL VERSION STUDY GUIDE

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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. An insulation that has absorbed moisture _____.**
 - A. Has gained insulation value
 - B. Has not changed
 - C. Has lost some of its insulation value
 - D. Becomes fireproof
- 2. 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
- 3. What is the minimum distance from the edge for a roof-mounted refrigeration condenser without a roof guard?**
 - A. 6 feet
 - B. 8 feet
 - C. 10 feet
 - D. 12 feet
- 4. The unit IWC stands for inches of water column and is used to measure pressure in HVAC duct systems.**
 - A. PSI
 - B. kPa
 - C. IWC
 - D. BAR
- 5. 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

- 6. What is ventilation air in a building?**
- A. Air recirculated within rooms
 - B. Outdoor air introduced to dilute pollutants and improve indoor air quality
 - C. Air that is exhausted to outdoors only
 - D. Air cooled by the chiller
- 7. A dielectric fitting is used in piping systems to connect different metals.**
- A. To connect different metals while preventing corrosion
 - B. To adjust pressure
 - C. To seal leaks
 - D. To increase flow
- 8. Any appliance in which the products of combustion at the point of entrance to the flue under normal operating conditions have a temperature of 1000 degrees is a _____ appliance.**
- A. High-efficiency appliance
 - B. Low-heat appliance
 - C. Medium-heat appliance
 - D. Standard appliance
- 9. What is the purpose of a vent stack and venting clearances for gas appliances?**
- A. To vent sewer gases into living spaces
 - B. To channel air from the outdoors into the living space
 - C. To vent refrigerants into the atmosphere
 - D. To safely expel combustion byproducts to the outdoors and prevent backdrafting or CO exposure
- 10. A control circuit in HVAC equipment is often powered through an isolation transformer to limit the voltage to a maximum of _____ volts.**
- A. 100
 - B. 150
 - C. 230
 - D. 480

Answers

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

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Explanations

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1. An insulation that has absorbed moisture _____.

- A. Has gained insulation value
- B. Has not changed
- C. Has lost some of its insulation value**
- D. Becomes fireproof

Moisture in insulation reduces its ability to resist heat flow. The effectiveness of most insulation relies on trapped air pockets that limit heat transfer. When the material absorbs moisture, those air spaces are filled with water, and water conducts heat much better than air. Water also can cause fibers to clump or compress, further reducing the dead-air spaces that provide insulation. As a result, the material's overall ability to slow heat transfer declines, so it has lost some of its insulation value. It doesn't gain insulation value, and it isn't unchanged or fireproof simply by absorbing moisture.

2. 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.

3. What is the minimum distance from the edge for a roof-mounted refrigeration condenser without a roof guard?

- A. 6 feet
- B. 8 feet
- C. 10 feet**
- D. 12 feet

Creating a safe working buffer from the roof edge is the main idea here. When a roof-mounted refrigeration condenser sits without a protective roof guard, you want enough space so technicians can access, open panels, and maneuver around the unit without risking a fall or being too close to the edge. Ten feet provides a generous margin that helps prevent accidental slips toward the edge and gives room for service tasks, hoses, and connections to be handled safely. If a guard rail or parapet is present, the required setback is typically reduced because the guard provides protection, but without any guard, the ten-foot distance is the practical safety standard.

4. The unit IWC stands for inches of water column and is used to measure pressure in HVAC duct systems.

- A. PSI
- B. kPa
- C. IWC**
- D. BAR

In HVAC ductwork, the pressures are typically quite small, so the most practical way to express them is with inches of water column. This unit directly reflects the pressure exerted by a one-inch-high column of water, which is about 0.036 psi or roughly 0.249 kPa. Using inches of water column keeps readings intuitive for balancing fans, measuring duct losses, and setting dampers, because the values fall into a convenient, familiar range for the field. Other units like PSI or BAR represent much larger pressures and don't provide the same easy, precise scale for duct work, while kPa is correct but less commonly used in everyday HVAC practice. So the phrase described aligns with the standard HVAC convention for measuring duct pressure.

5. 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 $Q_{\text{total}} = C_1 V + C_2 V + \dots = V (C_1 + C_2 + \dots)$. The equivalent capacitance is defined as $C_{\text{eq}} = Q_{\text{total}} / V$, which gives $C_{\text{eq}} = C_1 + C_2 + \dots$. 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.

6. What is ventilation air in a building?

- A. Air recirculated within rooms
- B. Outdoor air introduced to dilute pollutants and improve indoor air quality**
- C. Air that is exhausted to outdoors only
- D. Air cooled by the chiller

Ventilation air is outdoor air introduced into a building to dilute pollutants and improve indoor air quality. This fresh air is brought in through outside-air dampers and mixed with return air to reach a healthy balance for occupants. It's different from air recirculated within rooms, which stays inside and doesn't provide new outdoor contaminants are diluted, and from air that is exhausted to the outdoors, which leaves the building rather than entering it. While cooling can be a part of the system, ventilation specifically means supplying outside air to dilute contaminants like CO₂, odors, and VOCs to maintain good IAQ.

7. A dielectric fitting is used in piping systems to connect different metals.

A. To connect different metals while preventing corrosion

B. To adjust pressure

C. To seal leaks

D. To increase flow

Dielectric fittings provide electrical isolation between dissimilar metals in a piping system to prevent galvanic corrosion. By inserting a non-conductive barrier between the metals, they stop electrical current from flowing through the metal connections, which slows or prevents the electrochemical corrosion that occurs when different metals are in contact in the presence of water or other electrolytes. This lets you safely join metals like steel and copper without the accelerated deterioration that would otherwise occur. They aren't intended to adjust pressure, seal leaks beyond maintaining a seal in normal operation, or increase flow, so those functions aren't what dielectric fittings are used for.

8. Any appliance in which the products of combustion at the point of entrance to the flue under normal operating conditions have a temperature of 1000 degrees is a _____ appliance.

A. High-efficiency appliance

B. Low-heat appliance

C. Medium-heat appliance

D. Standard appliance

The main idea is how much heat the appliance actually delivers into the living space versus how much goes out with the exhaust. When the products of combustion enter the flue very hot—around extremely high temperatures—the heat exchanger isn't capturing much of that energy. Most of the fuel's energy leaves with the exhaust, so the appliance is delivering relatively little heat to the house. That's described as a low-heat appliance. In contrast, high-efficiency units pull more heat from the combustion gases, so the exhaust leaving the appliance is much cooler. Intermediate categories would fall between these extremes. So, a condition where the flue entrance temperature is very high indicates a low-heat appliance.

9. What is the purpose of a vent stack and venting clearances for gas appliances?

A. To vent sewer gases into living spaces

B. To channel air from the outdoors into the living space

C. To vent refrigerants into the atmosphere

D. To safely expel combustion byproducts to the outdoors and prevent backdrafting or CO exposure

The main idea is to safely remove combustion byproducts from a gas appliance and keep them from re-entering the living space. A vent stack provides a dedicated path for exhaust gases to exit outdoors, directing the heat and combustion products away from people and interior openings. Venting clearances establish safe distances between the vent outlet and doors, windows, air intakes, or property lines, helping prevent backdrafting and avoiding CO exposure. If exhaust is blocked or the outlet is too close to an opening, gases can spill back into the home, which is dangerous. This concept isn't about venting sewer gases, bringing outdoor air in, or venting refrigerants—those are unrelated functions.

10. A control circuit in HVAC equipment is often powered through an isolation transformer to limit the voltage to a maximum of _____ volts.

- A. 100
- B. 150**
- C. 230
- D. 480

Isolation transformers used with HVAC control circuits keep the control-side voltage within a safe, manageable level. By limiting the maximum voltage that can appear on the control side, they protect people and equipment from high line voltages while still providing enough voltage for relays, sensors, and thermostats to operate reliably. The 150-volt ceiling is a practical standard for this purpose, balancing safety with the needs of typical control devices. A voltage limit of 100 volts would be unusually low for standard control components, while 230 and 480 volts are high line voltages that would defeat the purpose of isolating and protecting the control circuitry.

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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://mdhvacmasters.examzify.com>

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

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