

HVAC D-2 LICENSE 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.

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. A 6-inch diameter vent measures 20 feet vertical; what is the maximum horizontal length of the 6-inch, single-wall connector?
 - A. 10'
 - B. 20'
 - C. 12'
 - D. 15'
2. A _____ is a strap with means for securing it about the waist and for attaching it to a lanyard, or deceleration device.
 - A. Safety harness
 - B. Waist strap
 - C. Body belt
 - D. Lanyard clip
3. The products of which process are exhausted by an induced-draft blower in many HVAC systems?
 - A. Condensation
 - B. Ventilation
 - C. Combustion
 - D. Evaporation
4. A single rooftop unit with 20,000 CFM supplies a three-story building. How many smoke detectors are needed?
 - A. 2
 - B. 3
 - C. 4
 - D. 5
5. The cad cell on an oil burner detects what?
 - A. Pressure
 - B. Light
 - C. Noise
 - D. Flame

- 6. What is the required ventilation for a 15,000 square foot auditorium?**
- A. 33,750 CFM
 - B. 6,000 CFM
 - C. 15,000 CFM
 - D. 50,000 CFM
- 7. If a burner rated at 1.25 gph is installed in an enclosure with two combustion air openings, each 175 square inches free area, what is the total free area?**
- A. 300 sq inches
 - B. 350 sq inches
 - C. 400 sq inches
 - D. 450 sq inches
- 8. There are four classes of air systems.**
- A. True
 - B. False
 - C. Depends on jurisdiction
 - D. Not specified
- 9. In a confined space, the upper opening supplying combustion air to fuel burning appliance must be a maximum of how many inches from the ceiling?**
- A. 6 inches
 - B. 18 inches
 - C. 24 inches
 - D. 12 inches
- 10. What is the maximum deflection angle of each miter joint in ductwork?**
- A. 45 degree
 - B. 90 degree
 - C. 135 degree
 - D. 180 degree

Answers

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

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Explanations

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1. A 6-inch diameter vent measures 20 feet vertical; what is the maximum horizontal length of the 6-inch, single-wall connector?

- A. 10'
- B. 20'
- C. 12'
- D. 15'**

The key idea is how far a horizontal run of a single-wall vent connector can be while still maintaining adequate draft. For a 6-inch diameter vent, the common rule used in practice is that the horizontal length should not exceed about 75% of the vertical rise. With a vertical rise of 20 feet, 0.75×20 equals 15 feet. So the maximum horizontal length allowed is 15 feet. This keeps enough buoyant draft and helps prevent backdraft or condensation problems in the vent system. Shorter horizontals (like 10 or 12 feet) would still be acceptable, but they aren't the maximum allowed. A 20-foot horizontal would exceed the recommended limit.

2. A _____ is a strap with means for securing it about the waist and for attaching it to a lanyard, or deceleration device.

- A. Safety harness
- B. Waist strap
- C. Body belt**
- D. Lanyard clip

A body belt is designed to be worn around the waist and to provide an attachment point for a lanyard or a deceleration device. This matches the description exactly: a strap that secures at the waist and has a way to connect the fall-arrest equipment. A safety harness, by contrast, is a full-body system with shoulder and leg straps that distribute fall-arrest forces across the body, not just at the waist. A waist strap alone is just a belt and may not provide the proper attachment points for a lanyard or deceleration device. A lanyard clip is just a hardware connector, not the belt itself.

3. The products of which process are exhausted by an induced-draft blower in many HVAC systems?

- A. Condensation
- B. Ventilation
- C. Combustion**
- D. Evaporation

Induced-draft blowers are used to remove the gases produced when fuel is burned in the furnace or boiler. The combustion process creates hot, buoyant exhaust that must be vented outdoors to prevent buildup and to keep the system safe and efficient. By pulling these combustion byproducts through the vent stack, the blower carries out the products of combustion—primarily carbon dioxide and water vapor, along with any trace gases—out of the building. The other options aren't what the blower is designed to exhaust: condensation is moisture that can form in some systems, ventilation refers to general air exchange, and evaporation is a phase change, not the specific exhaust function of the device.

4. A single rooftop unit with 20,000 CFM supplies a three-story building. How many smoke detectors are needed?

- A. 2
- B. 3**
- C. 4
- D. 5

Smoke detectors in HVAC systems are installed to quickly shut down the air handling unit when smoke is detected, preventing smoke from being spread through the building. When a single rooftop unit serves multiple floors, each floor ideally represents a separate zone that needs monitoring. This ensures that if smoke is detected on one floor, the system can respond appropriately for that zone without unnecessarily shutting down airflow to all floors. In this setup, there are three floors served by the unit, so one detector per floor is required, totaling three detectors. The unit's size or airflow (20,000 CFM) doesn't determine the number of detectors; it's the number of separate zones or floors that matters.

5. The cad cell on an oil burner detects what?

- A. Pressure
- B. Light
- C. Noise
- D. Flame**

The cad cell is a flame detector. It works as a photoelectric sensor that responds to the light emitted by the flame. When a flame is present, the light lowers the cadmium sulfide cell's resistance and sends a signal to the burner control to keep the fuel flowing. If the flame goes out, the signal changes and the control shuts off the fuel to prevent unburned oil. It's not measuring pressure or noise, and it's not reacting to general ambient light—it's specifically detecting the flame's light.

6. What is the required ventilation for a 15,000 square foot auditorium?

- A. 33,750 CFM**
- B. 6,000 CFM
- C. 15,000 CFM
- D. 50,000 CFM

Ventilation for a large assembly space is often set using a rate per square foot to ensure enough fresh outdoor air for many people. A common design target for auditoriums is about 2.25 CFM per square foot. Multiplying by the floor area gives $15,000 \text{ ft}^2 \times 2.25 \text{ CFM/ft}^2 = 33,750 \text{ CFM}$. That supply rate helps dilute contaminants and maintain comfort for peak occupancy. If you assume a typical ceiling height around 10 ft, the volume would be about $150,000 \text{ ft}^3$, which yields roughly 13.5 air changes per hour with this ventilation rate—reasonable for an auditorium during active use. The other stated rates are either too low to provide adequate outdoor air or unnecessarily high; the 33,750 CFM figure aligns with common practice for this size of space. In real design, exact values come from building codes and ASHRAE standards, but this rule-of-thumb explains why 33,750 CFM is the appropriate choice here.

7. If a burner rated at 1.25 gph is installed in an enclosure with two combustion air openings, each 175 square inches free area, what is the total free area?

- A. 300 sq inches
- B. 350 sq inches**
- C. 400 sq inches
- D. 450 sq inches

Total free area is the sum of all openings' free areas. With two openings each providing 175 square inches, you add them together: $175 + 175 = 350$ square inches. The burner's rating of 1.25 gph isn't needed for this calculation; it's information that can influence air requirements in other contexts, but the arithmetic here is simply additive. So the total free area is 350 square inches.

8. There are four classes of air systems.

- A. True**
- B. False
- C. Depends on jurisdiction
- D. Not specified

In HVAC licensing material, air systems are typically grouped into four broad delivery configurations to capture the main ways conditioned air is supplied and circulated in buildings. This four-class framework is a common, widely taught convention, which is why the statement that there are four classes is considered true. While exact terminology can vary by code or region, the underlying idea is that there are four main categories, and exams use that standard framework to test your ability to recognize and compare different system layouts. The other options imply ambiguity or jurisdictional variation that isn't how these exam materials are usually presented, so they don't fit the standard four-class approach.

9. In a confined space, the upper opening supplying combustion air to fuel burning appliance must be a maximum of how many inches from the ceiling?

- A. 6 inches
- B. 18 inches
- C. 24 inches
- D. 12 inches**

In a confined space, air for combustion must be provided from outdoors through openings placed at high and low points to create a reliable flow path. The upper opening is kept within 12 inches of the ceiling so air can enter from the top of the space where buoyancy helps move fresh air toward the appliance and away from the hot exhaust. This placement reduces the risk of backdraft and ensures the appliance receives adequate combustion air. If the upper opening were farther from the ceiling, the airflow could be restricted, potentially causing incomplete combustion or dangerous gas buildup.

10. What is the maximum deflection angle of each miter joint in ductwork?

- A. 45 degree
- B. 90 degree**
- C. 135 degree
- D. 180 degree

A miter joint forms a bend by cutting each piece at equal angles so the two pieces meet to make a corner. For a standard miter elbow, each cut is 45 degrees, and when they come together they create a bend of 90 degrees. This is the largest turn you can achieve with a single miter joint, because making a sharper turn would require cuts steeper than 45 degrees, which isn't practical for a clean, tight fit and would lead to leaks or distortion. To get deflections greater than 90 degrees, you'd use additional joints or a curved elbow rather than a single miter joint.

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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://hvacd2license.examzify.com>

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

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