

RETA Ammonia Refrigeration Practice Exam (Sample)

Study Guide



Everything you need from our exam experts!

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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. **Trapped ammonia liquid will increase in pressure between ___ and ___ psi for each degree Fahrenheit the temperature is increased.**
 - A. 100 and 150
 - B. 50 and 100
 - C. 150 and 200
 - D. 200 and 250

2. **Heat transfer by electromagnetic waves is known as?**
 - A. Conduction
 - B. Convection
 - C. Evaporation
 - D. Radiation

3. **Latent heat of Vaporization is associated with which phase change?**
 - A. Solid to liquid
 - B. Vapor to solid
 - C. Vapor to liquid
 - D. Liquid to Vapor

4. **Current flow of how many milliamps can be painful, cause muscular paralysis, and breathing difficulties?**
 - A. 5 mA
 - B. 10 mA
 - C. 15 mA
 - D. 20 mA

5. **As the temperature difference increases, the rate of heat flow ___**
 - A. Remains constant
 - B. Decreases
 - C. Increases
 - D. Oscillates

- 6. The pressure of the air exerted over a square inch area at the surface of the earth at sea level is?**
- A. 1 atm**
 - B. 101.3 kPa**
 - C. 14.7 pounds per square inch**
 - D. 1 bar**
- 7. Which description applies to a liquid at a temperature lower than its saturation temperature?**
- A. Saturation**
 - B. Boiling**
 - C. Subcooling**
 - D. Superheating**
- 8. Which ratio corresponds to a high speed reciprocating compressor?**
- A. 6:1**
 - B. 12:1**
 - C. 8:1**
 - D. 20:1**
- 9. Which component rejects heat to the surroundings and condenses refrigerant?**
- A. Evaporator**
 - B. Condenser**
 - C. Expansion device**
 - D. Float switch**
- 10. The process by which heat is exchanged through the emission of photons, without requiring matter, is known as what?**
- A. Convection**
 - B. Radiation**
 - C. Conduction**
 - D. Evaporation**

Answers

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

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Explanations

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1. Trapped ammonia liquid will increase in pressure between ___ and ___ psi for each degree Fahrenheit the temperature is increased.

- A. 100 and 150**
- B. 50 and 100**
- C. 150 and 200**
- D. 200 and 250**

When ammonia liquid is trapped in a sealed, non-vented part of the system, any rise in temperature has to be accommodated by a rise in pressure because the liquid can't freely vaporize or expand to relieve that pressure. Ammonia's liquid and its tendency to reach a higher vapor pressure with increasing temperature mean the trapped liquid pushes the system pressure up very quickly. In practice, this build-up is about 100 to 150 psi for every 1°F increase in temperature, a rule-of-thumb used in safety and training to highlight how dangerous a small temperature rise can be in a closed liquid-containing section. This is why trapped liquid can become a major pressure hazard, and why venting or relief devices are critical.

2. Heat transfer by electromagnetic waves is known as?

- A. Conduction**
- B. Convection**
- C. Evaporation**
- D. Radiation**

Radiation is the transfer of heat by electromagnetic waves. It can happen through empty space, so no medium is needed—think of the Sun warming the Earth or a fire warming your hands without touching them. This differs from conduction, which requires direct contact between substances for energy to pass from molecule to molecule, and from convection, which involves the bulk movement of a fluid carrying heat. Evaporation is a phase-change process that involves energy transfer but is not the mechanism described by electromagnetic waves. So the term for heat transfer by electromagnetic waves is radiation.

3. Latent heat of Vaporization is associated with which phase change?

- A. Solid to liquid**
- B. Vapor to solid**
- C. Vapor to liquid**
- D. Liquid to Vapor**

Latent heat of vaporization is the energy required to transform a liquid into a gas at a given pressure. This phase change—liquid turning into vapor—requires energy to overcome intermolecular forces and separates the molecules, so the temperature stays the same during the process. The absorbed energy goes into changing the phase, not increasing kinetic energy. When vapor becomes liquid again, the energy is released in the form of latent heat of condensation. Other phase changes involve different latent heats (for example, solid to liquid is fusion), but the latent heat of vaporization specifically corresponds to liquid changing into vapor.

4. Current flow of how many milliamps can be painful, cause muscular paralysis, and breathing difficulties?

- A. 5 mA
- B. 10 mA**
- C. 15 mA
- D. 20 mA

The big idea here is how body response to electrical current ramps up with increasing magnitude. At very small currents you might feel a slight tingling, but as current climbs into the few-milliamp range the shock becomes painful and muscles begin to react strongly. Around 10 mA, those muscle contractions are significant enough that you can have trouble trying to let go of the source, and the muscles involved in breathing can be affected, making breathing more difficult. This combination—pain, strong muscular response, and potential breathing difficulty—fits best with a current near 10 mA. Higher currents increase the risk even more, but 10 mA is the threshold where those specific effects start to appear together.

5. As the temperature difference increases, the rate of heat flow ____

- A. Remains constant
- B. Decreases
- C. Increases**
- D. Oscillates

The driving force for heat transfer is the temperature difference between the two sides. With the material properties, area, and transfer mode held constant, the heat flow rate scales with that difference. In conduction, this is shown by Fourier's law, and in convection by Newton's cooling law—both formulas have the temperature difference as a multiplier. So when you increase the temperature difference, the rate at which heat moves through the system increases, roughly in direct proportion. If you double the ΔT under the same conditions, you'll double the heat flow rate. It wouldn't stay constant or decrease or oscillate unless some other factor changed.

6. The pressure of the air exerted over a square inch area at the surface of the earth at sea level is?

- A. 1 atm
- B. 101.3 kPa
- C. 14.7 pounds per square inch**
- D. 1 bar

At sea level, the air exerts a weight per unit area that defines atmospheric pressure. The standard value is 1 atmosphere, which equals 101.3 kilopascals. When you express that same pressure in pounds per square inch, it comes out to about 14.7 psi. So the pressure over a square inch at sea level is 14.7 psi. (1 bar is close, about 14.5 psi, and 101.3 kPa is the same pressure expressed in kilopascals, but for per-square-inch terms the 14.7 psi value is the direct match.)

7. Which description applies to a liquid at a temperature lower than its saturation temperature?

- A. Saturation**
- B. Boiling**
- C. Subcooling**
- D. Superheating**

Subcooling means a liquid is cooled below its saturation temperature for the given pressure. In this state the liquid stays fully in the liquid phase and won't vaporize until it absorbs enough heat to reach the saturation temperature. If a liquid were at the saturation temperature, it would be at the boiling point for that pressure and could begin to boil; boiling is the actual transition to vapor. Superheating would place the liquid above the saturation temperature, where it would be warmer than the boiling point and could vaporize more readily. Since the condition described is a temperature lower than the saturation temperature, subcooling is the correct description.

8. Which ratio corresponds to a high speed reciprocating compressor?

- A. 6:1**
- B. 12:1**
- C. 8:1**
- D. 20:1**

When a piston compressor runs at high speed, the most efficient and reliable operation comes from keeping the pressure rise per stage at a moderate level. For high-speed reciprocating units, about 8:1 per stage is typical. This balance keeps discharge temperatures within what the cylinders, valves, and lubricants can handle, avoids excessive heat that would require heavy cooling or intercooling, and avoids unnecessarily large and costly hardware. If you push the stage ratio higher, like 12:1 or 20:1, discharge temperatures climb and cooling demands rise, making the design less practical. If you go lower, like 6:1, you'd need more stages or bigger cylinders to reach the same overall pressure, increasing complexity and cost. So 8:1 is the standard compromise for high-speed reciprocating compressors.

9. Which component rejects heat to the surroundings and condenses refrigerant?

- A. Evaporator**
- B. Condenser**
- C. Expansion device**
- D. Float switch**

In a refrigeration cycle, heat is rejected at the condenser. The condenser receives high-pressure, high-temperature vapor from the compressor and transfers that heat to the surroundings, causing the vapor to shed energy and condense into a liquid. This phase change from vapor to liquid is essential for restarting the cycle, since the liquid then goes on to the expansion device where its pressure is lowered and it can again absorb heat in the evaporator. The evaporator, in contrast, is the place where heat is absorbed from the space or product being kept cold, turning liquid refrigerant into vapor. The expansion device lowers the refrigerant's pressure to enable this cooling effect. The float switch is simply a level sensor used to monitor liquid in a container and does not participate in heat transfer. Therefore, the component that rejects heat to the surroundings and condenses the refrigerant is the condenser.

10. The process by which heat is exchanged through the emission of photons, without requiring matter, is known as what?

- A. Convection**
- B. Radiation**
- C. Conduction**
- D. Evaporation**

Heat transfer via electromagnetic waves carried by photons does not require any matter to mediate the transfer. This is radiation, which can carry energy through empty space, as when sunlight warms the Earth. Conduction, by contrast, needs direct contact and transfers energy through molecular interactions or electron movement within a substance. Convection relies on the bulk movement of a fluid to transport heat. Evaporation involves a phase change and is a way energy can move as liquids turn to vapor, but it's not the general mechanism for transferring heat across a distance. Therefore, the process described is radiation.

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://retaammoniarefrigeration.examzify.com>

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

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