

NEW YORK CITY REFRIGERATION LICENSE EXAM I PRACTICE (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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THE FULL VERSION STUDY GUIDE

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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

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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. Which document would you consult to understand the hazards, safe handling, and first aid measures for a chemical used in the refrigeration plant?**
 - A. Safety Data Sheet
 - B. Material Safety Data Sheet
 - C. Product Safety Bulletin
 - D. Operational Manual
- 2. What is the minimum frequency for an engineer to log readings during a shift?**
 - A. Once per shift
 - B. Once per hour
 - C. Twice per shift
 - D. Once per day
- 3. If a condenser water pump shows noise, fluctuating gauge readings, and the motor runs hot, the recommended action is:**
 - A. Turn on Pump #2, Shut off Pump #1, and Troubleshoot Pump #1
 - B. Replace the Pump Completely
 - C. Increase the Motor Voltage
 - D. Ignore It
- 4. To isolate a dual pressure relief valve while the system remains in service, which valve type should be used?**
 - A. Gate valve
 - B. Three way valve
 - C. Ball valve
 - D. Check valve
- 5. Inlet moisture in a steam turbine should be kept low primarily to minimize wear on:**
 - A. Condenser blades
 - B. Boiler tubes
 - C. Turbine blades
 - D. Pitch control gears

- 6. R-123 refrigerant is classified as which type of refrigerant?**
- A. CFC
 - B. HFC
 - C. HCFC
 - D. HFO
- 7. Under which arrangement of evaporator and condenser temperatures would the BTU transfer be the greatest?**
- A. High evaporator temperature, high condenser temperature
 - B. Low evaporator temperature, low condenser temperature
 - C. High evaporator temperature, low condenser temperature
 - D. Low evaporator temperature, high condenser temperature
- 8. During charging, what is the primary reason for performing a thorough evacuation?**
- A. Remove moisture and air and non-condensables
 - B. Increase system pressure
 - C. Lubricate moving parts
 - D. Clean the refrigerant
- 9. With a 75 degree dry bulb and a 73 degree wet bulb the relative humidity is?**
- A. Very high
 - B. High
 - C. Moderate
 - D. Low
- 10. Which event would indicate that the cooling tower is not being air-cooled effectively?**
- A. Higher return water temperature
 - B. Lower return water temperature
 - C. No change in temperature
 - D. Decreased head pressure

Answers

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

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Explanations

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1. Which document would you consult to understand the hazards, safe handling, and first aid measures for a chemical used in the refrigeration plant?

- A. Safety Data Sheet
- B. Material Safety Data Sheet**
- C. Product Safety Bulletin
- D. Operational Manual

The document that provides the hazards, safe handling, and first aid measures for a chemical used in the refrigeration plant is the Safety Data Sheet. This sheet gathers all essential safety details about a chemical in one place, including the hazards it poses, recommended protective equipment, precautions for handling and storage, and exact first aid steps in case of exposure. In a refrigeration setting, you rely on it to understand risks from refrigerants and cleaning agents, how to ventilate properly, what PPE to wear, and what to do if there's a spill, leak, or accidental contact. Note that this is the same document historically called a Material Safety Data Sheet. The current standard term is Safety Data Sheet, but many places still use the older MSDS name. The other options don't carry the same comprehensive safety information: a Product Safety Bulletin is a product-focused notice, and an Operational Manual covers equipment operation rather than chemical hazards and first aid.

2. What is the minimum frequency for an engineer to log readings during a shift?

- A. Once per shift**
- B. Once per hour
- C. Twice per shift
- D. Once per day

Documentation during a shift must happen at least once. Recording readings at least once per shift creates a verifiable snapshot of system conditions for that period, helping you confirm that checks were performed and giving you a traceable point to investigate if any readings later deviate. This minimum keeps a consistent record without requiring constant logging, yet ensures you don't miss issues that could arise over the course of a shift. In practice, technicians often log more frequently for critical equipment, but the standard minimum is one entry per shift. Readings typically include temperatures, pressures, equipment status, and other pertinent safety or performance data, and should be time-stamped and signed for accountability.

3. If a condenser water pump shows noise, fluctuating gauge readings, and the motor runs hot, the recommended action is:

- A. Turn on Pump #2, Shut off Pump #1, and Troubleshoot Pump #1**
- B. Replace the Pump Completely
- C. Increase the Motor Voltage
- D. Ignore It

When a condenser water pump shows distress signals like noise, fluctuating gauge readings, and a hot-running motor, the priority is to keep the system cooling with the available standby pump while isolating and inspecting the faulty unit. In a dual-pump setup, you don't press on with the problematic pump because the symptoms point to a developing issue—mechanical wear, cavitation, air entrainment, a clogged impeller, or bearing problems—that can worsen if operated. By turning on the second pump to maintain flow, shutting off the first pump to stop the worsening condition, and then troubleshooting the first pump, you preserve system performance and prevent further damage. Replacing the pump completely isn't the immediate move when a backup is available and you can diagnose the issue first. Increasing the motor voltage would risk overloading and further damage, and ignoring the problem could lead to a pump failure and potential condenser inefficiency.

4. To isolate a dual pressure relief valve while the system remains in service, which valve type should be used?

- A. Gate valve
- B. Three way valve**
- C. Ball valve
- D. Check valve

To isolate a dual pressure relief valve without taking the system offline, you need a valve that can redirect the flow around the valve while keeping the process running. A three-way valve can do this by providing a bypass path. In one position it routes flow through the normal line around the relief valve, and in another position it connects the supply to a bypass so the relief valve can be isolated and serviced without interrupting service to the rest of the system. Gate valves or ball valves can shut off flow, but using them alone would interrupt the process and don't provide a built-in bypass path. A check valve prevents reverse flow but does not offer a way to bypass or isolate the relief valve while keeping the system in operation.

5. Inlet moisture in a steam turbine should be kept low primarily to minimize wear on:

- A. Condenser blades
- B. Boiler tubes
- C. Turbine blades**
- D. Pitch control gears

Wet steam can cause erosive wear on turbine blades. When liquid water droplets ride along with the steam, they strike the moving blades at high speed, transferring kinetic energy and gradually eroding the metal surface. Over time this leads to pitting, roughness, and reduced blade life and efficiency. The turbine blades are the components directly exposed to the high-velocity, moisture-laden steam, so they experience the most wear from inlet moisture. Other parts like condenser blades, boiler tubes, or pitch control gears don't encounter the same impact conditions, so the primary concern with moisture in the inlet is protecting the turbine blades.

6. R-123 refrigerant is classified as which type of refrigerant?

- A. CFC
- B. HFC
- C. HCFC**
- D. HFO

R-123 is HCFC. This family is defined by having hydrogen in the molecule in addition to chlorine and fluorine. HCFCs were developed to replace CFCs because the hydrogen presence reduces ozone depletion potential compared with pure chlorofluorocarbons. R-123 contains chlorine and hydrogen (along with fluorine), so it fits the hydrochlorofluorocarbon category rather than the chlorine-free HFCs or the newer, low-GWP HFOs. In contrast, CFCs have chlorine but no hydrogen, HFCs have no chlorine, and HFOs are hydrofluoroolefins with typically very low GWP.

7. Under which arrangement of evaporator and condenser temperatures would the BTU transfer be the greatest?

- A. High evaporator temperature, high condenser temperature
- B. Low evaporator temperature, low condenser temperature
- C. High evaporator temperature, low condenser temperature
- D. Low evaporator temperature, high condenser temperature**

Heat transfer in a refrigeration cycle is driven by the temperature difference between the cold side (evaporator) and the hot side (condenser). The larger that difference, the stronger the driving force for heat flow, so more heat can be moved per unit time. If the evaporator is very cold and the condenser is very hot, you create the largest temperature lift in the cycle. For the same refrigerant flow and heat exchanger size, this means more heat can be absorbed from the space in the evaporator and more heat can be rejected to the surroundings in the condenser, increasing the BTU transfer rate. If the evaporator and condenser temperatures are close, the driving force is small and less heat is moved. If the evaporator is high while the condenser is low, the lift is reduced, and so is the heat transfer. Therefore, the arrangement with a low evaporator temperature and a high condenser temperature yields the greatest BTU transfer. Note that this also increases the compressor work required, but the question focuses on the transfer rate.

8. During charging, what is the primary reason for performing a thorough evacuation?

- A. Remove moisture and air and non-condensables**
- B. Increase system pressure
- C. Lubricate moving parts
- D. Clean the refrigerant

Removing air, moisture, and non-condensables from the system before charging is essential to get an accurate refrigerant charge and efficient operation. Air and non-condensables raise head pressure and hinder heat transfer, which can skew readings and reduce performance. Moisture in the system can react with refrigerant and oil to form acids, and water can freeze in metering devices, causing blockages. A thorough evacuation pulls these unwanted gases and water out, allowing the system to be charged properly and operate reliably. This isn't about increasing pressure, lubricating moving parts, or cleaning the refrigerant, so those outcomes aren't achieved by evacuation.

9. With a 75 degree dry bulb and a 73 degree wet bulb the relative humidity is?

A. Very high

B. High

C. Moderate

D. Low

When the dry-bulb and wet-bulb temperatures are very close, the air is nearly saturated with moisture. The dry-bulb is the actual air temperature, while the wet-bulb temperature shows how cool the air would get if evaporation could occur freely. A small difference between them means evaporation is limited, which happens as relative humidity approaches 100%. With a 75°F dry-bulb and a 73°F wet-bulb, the gap is only 2°F, signaling very high humidity. In practical terms, relative humidity would be in the upper ranges, around the mid-to-high 80s or higher, which is why this option is the best choice.

10. Which event would indicate that the cooling tower is not being air-cooled effectively?

A. Higher return water temperature

B. Lower return water temperature

C. No change in temperature

D. Decreased head pressure

Cooling towers remove heat from system water by letting it air cool and then returning cooler water to the equipment. The temperature of the water as it comes back to the system shows how well that heat rejection is working. If the cooling tower isn't air cooling effectively, it won't remove as much heat, so the water returning to the system stays warmer than it should. That higher return water temperature means the chiller or condenser has to work harder, signaling reduced cooling performance. In contrast, a lower return water temperature means the tower is doing a good job cooling the water, and no change would suggest the performance is unchanged. A decreased head pressure doesn't directly indicate poor air cooling of the tower; it points to different refrigerant or system issues.

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://newyorkrefrigeration1.examzify.com>

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

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