NEW YORK CITY REFRIGERATION LICENSE EXAM I PRACTICE (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

VISIT US ONLINE FOR THE FULL VERSION STUDY GUIDE

https://newyorkrefrigeration1.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 type of compressor is typically controlled by a hot gas bypass valve for capacity control?

A. Reciprocating hermetic compressor

B. Centrifugal compressor

C. Scroll compressor

D. Screw compressor

2. How much additional refrigerant is allowed in a machine room?

A. 330 lbs

B. 260 lbs

C. 600 lbs

D. 120 lbs

3. Copper tubing refrigerant lines must be installed for a new system. To prevent collapse at bends, which tool should the refrigerant engineer use?

A. A lever type tubing bender

B. A hacksaw

C. A standard pliers

D. A conduit bender

4. What is the cross-sectional area, in square inches, of a pipe with a 12-inch diameter?

A. 113 square inches

B. 36 square inches

C. 72 square inches

D. 144 square inches

5. How does a cylinder unloader operate on a reciprocating compressor?

A. Keep the suction valve opened while the compressor is in the return stroke

B. Close the suction valve during the suction stroke

C. Open the discharge valve during the return stroke

D. Keep both valves closed during the return stroke

SAMPLE

6. How is the compressor safety head best described?

A. A backflow preventer

B. A spring on the valve plates

C. A high-pressure relief valve on discharge

D. A thermal fuse

7. In a refrigeration system where a low-side float valve is used, what is the primary role of that valve?

A. It acts as a metering device

B. It filters the refrigerant

C. It regulates discharge pressure

D. It stores refrigerant

8. In a multi-cylinder reciprocating compressor that uses cylinder unloaders to regulate capacity, what would occur if some unloaders fail to operate when needed?

A. The discharge pressure would drop

B. The chilled water temperature will increase

C. The compressor would run at maximum speed

D. System efficiency would double

9. Which consequence is most likely when a rotating turbine is driven through its natural frequency?

A. Turbine will accelerate uncontrollably

B. Turbine will stall

C. Turbine will vibrate violently

D. Turbine will overheat

10. What is the function of a safety head on a compressor?

A. Lubricates moving parts

B. Measures discharge temperature

C. Controls motor speed

D. Prevents liquid slugging from damaging the valve plate

SAMPLE

Answers

SAMPLE

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

SAMPLE

Explanations

SAMPLE

1. Which type of compressor is typically controlled by a hot gas bypass valve for capacity control?

A. Reciprocating hermetic compressor

B. Centrifugal compressor

C. Scroll compressor

D. Screw compressor

Capacity control in refrigeration systems can be achieved by bypassing some of the hot, high-pressure discharge gas back to the evaporator. This method works well with a reciprocating hermetic compressor because its displacement is fixed, so you can modulate the system's cooling output without changing the compressor's speed or geometry. By sending hot discharge gas into the evaporator, the evaporating temperature and suction pressure rise, which reduces the net cooling effect and lowers capacity as needed. Other compressor types use different ways to adjust capacity—such as varying flow with vanes in centrifugal units or using unloading, variable-speed drives, or other control mechanisms in scrolls and screws—so hot gas bypass isn't the typical method for them.

2. How much additional refrigerant is allowed in a machine room?

A. 330 lbs

B. 260 lbs

C. 600 lbs

D. 120 lbs

The main idea is safety: a machine room containing refrigerant equipment is allowed to hold only a limited amount of refrigerant to reduce fire risk and prevent hazardous buildup if a leak occurs. The standard limit for the amount of refrigerant in such a room is 330 pounds. This keeps the space manageable for detection and ventilation systems and minimizes the danger from released refrigerant. If more than 330 pounds were present, additional safeguards or a different arrangement would be required. That's why 330 pounds is the best answer.

3. Copper tubing refrigerant lines must be installed for a new system. To prevent collapse at bends, which tool should the refrigerant engineer use?

A. A lever type tubing bender

B. A hacksaw

C. A standard pliers

D. A conduit bender

When bending copper refrigerant tubing, you need a tool that creates a smooth bend with the correct radius without squeezing or crushing the wall of the tube. A lever-type tubing bender is designed specifically for soft copper tubing. It distributes bending force evenly and guides the tube along a controlled radius, preventing wall collapse, kinks, or thinning that could lead to leaks or reduced flow. Other tools would not be appropriate: a hacksaw would cut the tube and create burrs and improper ends; standard pliers can pinch and deform the tube walls; a conduit bender is meant for electrical conduit and can impose an unsuitable bend radius or crush the tubing.

SAMPLE

4. What is the cross-sectional area, in square inches, of a pipe with a 12-inch diameter?

A. 113 square inches

B. 36 square inches

C. 72 square inches

D. 144 square inches

For a pipe, the cross-sectional area is the area of the circular opening. Use the circle area formula A = πr^2. The radius is half the diameter, so r = 6 inches. Then A = π(6)^2 = 36π square inches, which is about 113.1. Rounding to the nearest integer gives 113 square inches, the option that matches. The exact value is 36π, not 144, 72, or 36, since those would come from misapplying the radius or skipping the π factor.

5. How does a cylinder unloader operate on a reciprocating compressor?

A. Keep the suction valve opened while the compressor is in the return stroke

B. Close the suction valve during the suction stroke

C. Open the discharge valve during the return stroke

D. Keep both valves closed during the return stroke

The concept being tested is how cylinder unloading reduces compressor capacity by preventing compression in idle cylinders. By keeping the suction valve open during the return (compression) stroke, the cylinder cannot build pressure because the gas can flow back into the suction line instead of being trapped and compressed. This means that even though the piston moves, there is no effective compression and no discharge from that cylinder, so that cylinder is effectively unloaded and requires much less motor torque. The remaining loaded cylinders still operate normally, supplying the system as demand requires. Opening the discharge valve during the return stroke would force gas out of the cylinder early but doesn't prevent compression in the unloaded state. Closing both valves would trap gas and defeat unloading. Closing the suction valve during suction would prevent gas from entering at all, which isn't how unloading is designed to work.

6. How is the compressor safety head best described?

A. A backflow preventer

B. A spring on the valve plates

C. A high-pressure relief valve on discharge

D. A thermal fuse

The compressor safety head is best described as the spring mechanism that sits on the valve plates to return and hold them closed. In a reciprocating compressor, the suction and discharge valves must open and close with each stroke, and the springs on the valve plates provide the closing force and dampen valve motion. This prevents valve flutter or hammering at high speeds and helps ensure reliable, proper sealing so the compressor can build and maintain the intended pressures. It's not a backflow preventer, a discharge relief valve, or a thermal fuse—the safety head's role is specifically to manage valve seating through springs.

SAMPLE

7. In a refrigeration system where a low-side float valve is used, what is the primary role of that valve?

A. It acts as a metering device

B. It filters the refrigerant

C. It regulates discharge pressure

D. It stores refrigerant

The main idea is controlling how much liquid refrigerant enters the evaporator. A low-side float valve acts as a simple metering device: as the evaporator fills with liquid, the float rises and gradually closes the valve, reducing inflow; when liquid is drawn off and the level falls, the float lowers and the valve opens more to let in additional liquid. This keeps a steady liquid level in the evaporator so heat can be absorbed efficiently and prevents flooding into the compressor. It isn't a filter, a pressure regulator, or a storage device.

8. In a multi-cylinder reciprocating compressor that uses cylinder unloaders to regulate capacity, what would occur if some unloaders fail to operate when needed?

A. The discharge pressure would drop

B. The chilled water temperature will increase

C. The compressor would run at maximum speed

D. System efficiency would double

Capacity control relies on unloaders to match the compressor's capacity to the cooling demand. If some unloaders fail to operate when needed, the compressor can't back off and ends up delivering near full capacity. In a chiller, excessive refrigerant flow into the evaporator can exceed what the chilled-water loop can absorb at the current flow rate, reducing heat transfer efficiency and causing the water leaving the evaporator to be warmer. That's why the chilled-water temperature would rise. The other outcomes—lower discharge pressure, a motor speeding up, or a sudden doubling of system efficiency—don't align with how unloading affects the cycle.

9. Which consequence is most likely when a rotating turbine is driven through its natural frequency?

A. Turbine will accelerate uncontrollably

B. Turbine will stall

C. Turbine will vibrate violently

D. Turbine will overheat

Resonance in rotating machinery happens when the driving force excites a natural mode of the turbine. When the system is driven through that natural frequency, energy is transferred very efficiently into that vibrational mode. With finite damping, the vibration amplitude grows, so the turbine tends to vibrate with large, even violent, oscillations. That's the immediate consequence you'd expect because the structure is being pushed at its own natural rhythm, piling energy into motion instead of quickly damping it out. Stalling or overheating aren't the direct outcomes of this resonance phenomenon, though extreme vibration can contribute to mechanical stress and warming over time.

SAMPLE

10. What is the function of a safety head on a compressor?

A. Lubricates moving parts

B. Measures discharge temperature

C. Controls motor speed

D. Prevents liquid slugging from damaging the valve plate

The function being tested is protective and focused on preventing damage from liquid slugging. A safety head provides a controlled relief path in the compressor head so that if liquid refrigerant enters the cylinder, a small amount of vapor can escape before the liquid slug can slam into the valve plate. This helps prevent bending or damage to the valve plate, which can occur when liquid refrigerant is compressed. This device isn't about lubricating moving parts, measuring discharge temperature, or controlling motor speed, which is why the other options don't fit as well.

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://newyorkrefrigeration1.examzify.com

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

SAMPLE