

FDNY COF – SUPERVISION OF FIRE ALARM SYSTEMS (Q-01) PRACTICE TEST (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	16

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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 wound-rotor induction motor with external resistance typically functions as what type of motor?**
 - A. Multispeed motor
 - B. Constant-speed motor
 - C. Single-speed motor
 - D. Waterproof cover
- 2. What indicates that the huddling chamber design is effective?**
 - A. It has a smaller diameter than the pipe
 - B. It has a greater diameter than the pipe
 - C. It is located at the compressor discharge
 - D. It operates under zero pressure
- 3. Where can a butterfly valve be used?**
 - A. Only on the outlet of a water pump
 - B. Can be used on the inlet and outlet of a water pump
 - C. Only in high-pressure applications
 - D. Only in refrigeration systems
- 4. What is a common consequence of moisture in a refrigeration system?**
 - A. Decreased efficiency
 - B. Increased pressure
 - C. Increased cooling capacity
 - D. Enhanced operation
- 5. According to ASHRAE Standard R15, what can an Oxygen Deprivation Sensor be used as?**
 - A. An automatic purger
 - B. A breathing apparatus
 - C. A refrigeration leak detector
 - D. Mechanical ventilation

- 6. If brine becomes saturated with ammonia in a small compression plant, what should you do?**
- A. Run the brine through the cooling tower and treat it with lime.
 - B. Treat the brine with lime.
 - C. Run it to the sewer and make a new batch.
 - D. Pay no attention to the problem since it will correct itself.
- 7. In which refrigerant is the solubility of refrigerant oil lowest?**
- A. R-22
 - B. NH₃
 - C. R-12
 - D. CO₂
- 8. Which electrical motor protection device automatically resets itself?**
- A. The thermal protector
 - B. The circuit breaker
 - C. The fuse
 - D. The overload relay
- 9. In an absorption system, what medium is typically used to vaporize refrigerant?**
- A. Water
 - B. Propane
 - C. Steam
 - D. Ethylene
- 10. If a piece of equipment can be isolated, what must be installed as a safety measure?**
- A. A safety gauge must be present
 - B. A safety valve must be installed
 - C. Valves must be locked
 - D. The system must be able to run without it

Answers

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

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Explanations

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1. A wound-rotor induction motor with external resistance typically functions as what type of motor?

A. Multispeed motor

B. Constant-speed motor

C. Single-speed motor

D. Waterproof cover

A wound-rotor induction motor with external resistance typically functions as a multispeed motor. This type of motor allows for the adjustment of the rotor resistance, which in turn affects the slip and speed characteristics of the motor. By varying the resistance connected to the rotor circuit, it is possible to control the motor's starting torque and speed, achieving multiple operational speeds. The ability to fine-tune the rotor resistance leads to flexibility in applications requiring different speed operations, making it suitable for scenarios where variable speed control is necessary. This is particularly useful in industrial applications where diverse processes demand different speeds for optimal performance. Such capabilities are not present in constant-speed or single-speed motors, which operate at fixed speeds without the capacity for speed variation or adjustment.

2. What indicates that the huddling chamber design is effective?

A. It has a smaller diameter than the pipe

B. It has a greater diameter than the pipe

C. It is located at the compressor discharge

D. It operates under zero pressure

In evaluating the effectiveness of a huddling chamber design, it is crucial to understand its role in a system, particularly in refrigeration or air conditioning applications. The purpose of a huddling chamber is to optimize the separation of gas and liquid phases after a refrigerant has undergone phase changes. Having a greater diameter than the pipe is key for the huddling chamber's effectiveness because it allows for proper separation of the liquid refrigerant from the vapor. The larger diameter reduces the velocity of the refrigerant as it enters the chamber, enabling gravity to assist in draining the liquid back into the system while allowing the gas to exit freely. This design enhances efficiency by ensuring that the compressor receives only vapor, which is critical for its operation, avoiding liquid slugging and potential damage to the compressor. Moreover, a smaller diameter could impede the effective separation process by causing higher velocities that could disturb the liquid-vapor separation, whereas being located at the compressor discharge does not inherently mean the chamber is effective unless it is designed appropriately. Operating under zero pressure is not typical for a functional huddling chamber, as some pressure is required to maintain the refrigerant in the desired state. Thus, a huddling chamber functioning properly should indeed have a greater diameter than the connected

3. Where can a butterfly valve be used?

- A. Only on the outlet of a water pump
- B. Can be used on the inlet and outlet of a water pump**
- C. Only in high-pressure applications
- D. Only in refrigeration systems

A butterfly valve is designed to regulate or isolate fluid flow in various piping systems, making it highly versatile. Its unique design incorporates a disc that rotates within the pipe to control the flow of liquid or gas. One of the most significant advantages of butterfly valves is their ability to maintain an effective seal while allowing for efficient flow in both directions. Using a butterfly valve on the inlet and outlet of a water pump helps ensure proper flow control and pressure regulation, which is critical for maintaining optimal operation of the pump. The valve can be positioned either before the pump (inlet) to control the flow entering the pump or after (outlet) to regulate the flow of water being discharged. This flexibility in use makes them ideal for a variety of applications, extending beyond just water pumps. In contrast, other options focus on more restrictive usages or specific applications, which do not capture the broader functionality of butterfly valves. For example, limiting their use to only the outlet of a water pump or associating them solely with high-pressure applications or refrigeration systems overlooks their versatility in general plumbing and fluid delivery systems.

4. What is a common consequence of moisture in a refrigeration system?

- A. Decreased efficiency**
- B. Increased pressure
- C. Increased cooling capacity
- D. Enhanced operation

Moisture in a refrigeration system typically leads to decreased efficiency. When moisture enters the system, it can cause a number of problems, including the formation of ice within the evaporator or other components. This ice can obstruct proper airflow and lead to a decline in the system's ability to cool effectively. Additionally, moisture can react with refrigerants, forming acids that can corrode components and create further inefficiencies. As a result, the overall performance of the refrigeration system diminishes, leading to higher energy consumption and increased operational costs. The other options do not accurately reflect the consequences of moisture in a refrigeration system. Increased pressure is a potential concern, but the primary effect is inefficiency rather than a straightforward increase in pressure. Increased cooling capacity and enhanced operation are both outcomes that would be contrary to the effect of moisture, as moisture disrupts the optimal functioning of the system rather than improving it.

5. According to ASHRAE Standard R15, what can an Oxygen Deprivation Sensor be used as?

- A. An automatic purger
- B. A breathing apparatus
- C. A refrigeration leak detector**
- D. Mechanical ventilation

An Oxygen Deprivation Sensor, as defined by ASHRAE Standard R15, is used primarily in applications to detect low levels of oxygen in the air, which can indicate a risk for asphyxiation or other safety hazards. As a refrigeration leak detector, the sensor plays a crucial role in identifying leaks of refrigerants that can displace oxygen in an enclosed environment, creating unsafe conditions for occupants. When a refrigeration leak occurs, the natural concentration of oxygen can be reduced, and the sensor will activate to alert building management or safety personnel to the potentially hazardous situation. The effective use of oxygen deprivation sensors in this capacity is critical for ensuring the safety of building occupants by preventing conditions that may lead to oxygen deficiency. Other options like an automatic purger, a breathing apparatus, or mechanical ventilation pertain to different functionalities and systems. An automatic purger is more about the active removal of contaminants, a breathing apparatus is used to supply breathable air to individuals, and mechanical ventilation focuses on controlling the air change rate within a space. None of these serve the detection purpose that an Oxygen Deprivation Sensor is designed for in the context of refrigeration systems.

6. If brine becomes saturated with ammonia in a small compression plant, what should you do?

- A. Run the brine through the cooling tower and treat it with lime.
- B. Treat the brine with lime.
- C. Run it to the sewer and make a new batch.**
- D. Pay no attention to the problem since it will correct itself.

If brine becomes saturated with ammonia in a small compression plant, the appropriate course of action is to run it to the sewer and make a new batch. This choice is correct because allowing the brine to remain saturated with ammonia can lead to a range of operational and environmental issues. Saturation indicates that the brine has reached its maximum capacity for ammonia, which could result in reduced performance in the cooling process or may potentially overheat equipment and cause corrosion. By diverting the brine to the sewer, you effectively eliminate the concentration of ammonia that could hinder operational efficiency and compliance with environmental regulations. Making a new batch allows you to maintain the proper chemical balance necessary for optimal functioning of the system. The other options, while they may offer some treatment alternatives, do not effectively address the immediate saturation problem. Running brine through a cooling tower or treating it with lime can manage ammonia levels, but such methods may not be sufficient to resolve the saturation issue thoroughly. In the case of ensuring the integrity and safety of the system, making a fresh batch is the most reliable solution.

7. In which refrigerant is the solubility of refrigerant oil lowest?

- A. R-22
- B. NH₃
- C. R-12
- D. CO₂**

The solubility of refrigerant oil is lowest in carbon dioxide (CO₂) compared to the other refrigerants listed. This characteristic is crucial in applications such as cooling systems, where oil circulation and lubrication must function effectively without mixing excessively with the refrigerant. When oil is less soluble in the refrigerant, it remains in the compressor and other parts of the system where lubrication is needed, ensuring proper operation without the risk of impairing heat transfer efficiency. In practical terms, refrigerants like R-22, ammonia (NH₃), and R-12 tend to have higher solubility of oil, which can lead to challenges in maintaining adequate lubrication and potentially result in efficiency losses or mechanical issues in the cooling system. Understanding solubility is important for system design and performance, particularly in ensuring that the oil can do its job without the risk of flooding or reduced lubrication caused by excessive mixing with the refrigerant.

8. Which electrical motor protection device automatically resets itself?

- A. The thermal protector**
- B. The circuit breaker
- C. The fuse
- D. The overload relay

The thermal protector is an electrical device designed to safeguard motors from overheating due to excessive current. When a thermal protector senses a rise in temperature beyond a predetermined limit, it interrupts the circuit to prevent damage to the motor. The key feature of many thermal protectors is that they automatically reset once the temperature drops back to a safe level. This allows the motor to restart without the need for manual intervention, enhancing operational efficiency and reducing downtime. Circuit breakers and overload relays often require manual reset after tripping, making them less convenient in scenarios where automatic restoration is desirable. Fuses, on the other hand, must be replaced once they've blown, as they cannot be reset. Understanding the characteristics and behaviors of these protective devices is crucial for effective supervision of fire alarm systems and electrical installations.

9. In an absorption system, what medium is typically used to vaporize refrigerant?

- A. Water
- B. Propane
- C. Steam**
- D. Ethylene

In an absorption system, steam is typically used as the medium to vaporize refrigerant. This process leverages the heat content of steam to facilitate the phase change of the refrigerant from a liquid to a vapor state. The absorption refrigeration cycle relies on a combination of an absorbent and a refrigerant. The heat provided by steam assists in driving the absorption cycle forward by helping release the refrigerant from the absorbent, enabling it to circulate and create the cooling effect. Choosing steam is particularly advantageous due to its efficiency and effectiveness in transferring heat. It can provide a consistent and high-quality source of thermal energy, making the absorption refrigeration system work optimally. The use of water or other substances like propane and ethylene would typically not serve the same purpose, as they do not provide the necessary heat transfer characteristics or compatibility required for efficient vaporization in this context.

10. If a piece of equipment can be isolated, what must be installed as a safety measure?

- A. A safety gauge must be present
- B. A safety valve must be installed**
- C. Valves must be locked
- D. The system must be able to run without it

When a piece of equipment can be isolated, installing a safety valve is essential as a precautionary measure. A safety valve is designed to prevent overpressure situations that can lead to equipment failure or hazardous conditions. It serves as a critical component in maintaining safe operational parameters. By ensuring that a safety valve is in place, it allows for the safe venting of excess pressure, thereby protecting personnel and property from potential dangers associated with the isolated equipment. This necessity arises from safety regulations that mandate protective measures for equipment that can be taken offline or has parts that can operate independently. In this context, while safety gauges and locked valves play roles in various safety protocols, they do not directly address the need for immediate pressure relief in the event of isolation. The system's ability to run without the piece of equipment is not a sufficient safety measure by itself. Therefore, the installation of a safety valve is crucial in ensuring overall system integrity and safety when isolation occurs.

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://fdnyq01.examzify.com>

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

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