

FDNY COF for Flammable-Refrigerant Refrigeration Systems (B28) Practice Test (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. An emergency management plan for ESS should include which of the following?**
 - A. Risk assessment**
 - B. Training drills schedule**
 - C. Public relations plan**
 - D. Equipment replacement log**

- 2. Which of the following summarizes the key lessons learned from the first case study?**
 - A. Proper installation, regular maintenance, and immediate response to system alerts.**
 - B. Regular maintenance only, with no installation or alert response.**
 - C. Emergency shutdowns as the sole precaution.**
 - D. Ventilation and battery disposal procedures.**

- 3. Which set of tasks constitutes routine maintenance for an ESS?**
 - A. Only annual visual inspection.**
 - B. Regular inspections, battery health checks, system performance reviews, and software updates.**
 - C. Strong focus on exterior aesthetics.**
 - D. No maintenance required.**

- 4. What design requirements apply to outdoor ESS installations?**
 - A. Weatherproof enclosures, adequate spacing, fire barriers, and compliance with environmental regulations.**
 - B. Fire safety measures only.**
 - C. Ventilation only.**
 - D. Electrical infrastructure only.**

- 5. Which of the following is NOT a step in the emergency response procedures for an ESS?**
 - A. Conducting routine maintenance**
 - B. Alerting responders**
 - C. Ensuring safety**
 - D. Identifying the emergency**

- 6. Which of the following is NOT a root cause of ESS battery failures?**
- A. Mechanical damage**
 - B. Overcharging**
 - C. Software updates**
 - D. Thermal abuse**
- 7. Depth of Discharge (DoD) refers to which of the following?**
- A. DoD refers to the percentage of capacity used.**
 - B. The battery's temperature range during discharge.**
 - C. The cost per cycle of discharge.**
 - D. The maximum discharge current.**
- 8. Describe the separation distance requirements for outdoor ESS installations.**
- A. ESS must be separated by at least 5 feet from property lines, buildings, and other equipment to prevent fire spread.**
 - B. Separation is not required.**
 - C. Separation must be at least 100 feet.**
 - D. Separation must be less than 2 feet.**
- 9. Which term refers to setting up equipment in a specified location?**
- A. Maintenance**
 - B. Operating Instructions**
 - C. Installation**
 - D. Permit**
- 10. Which of the following is NOT a step in the emergency response procedures for an ESS?**
- A. Identifying the emergency**
 - B. Documenting the incident**
 - C. Executing the response plan**
 - D. Post-incident review**

Answers

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

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Explanations

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1. An emergency management plan for ESS should include which of the following?

- A. Risk assessment**
- B. Training drills schedule**
- C. Public relations plan**
- D. Equipment replacement log**

Assessing hazards and the likelihood and consequences of real events is the foundation of an effective emergency management plan for ESS. By performing a risk assessment, you identify what could go wrong with a flammable-refrigerant refrigeration system, estimate how serious each event could be, and determine which controls and response actions are needed. This step helps set priorities for prevention, protective actions, and coordination during a release or other incident, so the plan addresses the most significant threats first. Once you know the key risks, you can design appropriate drills, training, and communications, and you can establish maintenance and equipment needs accordingly. The other elements—training schedules, public relations plans, and equipment replacement logs—are important for implementing and sustaining the plan, but they rely on the risk information to be meaningful. Therefore, risk assessment is the essential starting point.

2. Which of the following summarizes the key lessons learned from the first case study?

- A. Proper installation, regular maintenance, and immediate response to system alerts.**
- B. Regular maintenance only, with no installation or alert response.**
- C. Emergency shutdowns as the sole precaution.**
- D. Ventilation and battery disposal procedures.**

The main idea is that safety with flammable-refrigerant systems comes from prevention, detection, and rapid response. When installation is done correctly, the system is wired, charged, sealed, and vented as designed, which reduces the chance of leaks or improper operation from the start. Regular maintenance keeps components, seals, detectors, and controls in good working order, so issues are found and corrected before they escalate. And when alarms or alerts go off, acting immediately to isolate the problem and address it minimizes exposure and the risk of ignition, rather than waiting and hoping the issue resolves itself. This combination is stronger than any single measure. Focusing only on maintenance misses the importance of proper setup; focusing only on emergency actions ignores the benefits of a correctly installed and well-monitored system; and relying on ventilation or battery disposal alone doesn't address the root need for sound installation, routine upkeep, and prompt alert response.

3. Which set of tasks constitutes routine maintenance for an ESS?

- A. Only annual visual inspection.
- B. Regular inspections, battery health checks, system performance reviews, and software updates.**
- C. Strong focus on exterior aesthetics.
- D. No maintenance required.

Routine maintenance for an ESS means performing a set of ongoing tasks that keep the system safe, reliable, and operating as designed. This includes regular inspections to check for wear, leaks, and enclosure integrity; battery health checks to assess state of charge, capacity, impedance, temperature behavior, and any signs of degradation that could lead to a fault or thermal issue; system performance reviews to verify that control algorithms, cooling, charging/discharging, alarms, and interlocks are functioning within spec; and software updates to install the latest firmware, safety features, and bug fixes that improve monitoring and fault response. Together, these steps catch developing problems early and keep the ESS compliant with safety requirements. Relying only on an yearly visual look misses evolving issues; focusing on appearance doesn't address safety or functionality; and saying no maintenance is required would ignore essential risk management and reliability needs.

4. What design requirements apply to outdoor ESS installations?

- A. Weatherproof enclosures, adequate spacing, fire barriers, and compliance with environmental regulations.**
- B. Fire safety measures only.
- C. Ventilation only.
- D. Electrical infrastructure only.

Outdoor ESS installations must be designed to handle exposure to the elements, control fire spread, and meet regulatory requirements. Weatherproof enclosures protect equipment from rain, snow, humidity, and temperature swings, reducing corrosion, equipment failure, and ignition risks. Adequate spacing between units and from nearby structures supports safe maintenance access, allows for heat dissipation, and helps prevent heat buildup or radiant heat from contributing to a fire or impacting neighboring equipment. Fire barriers provide separation to contain any fire to its origin, slowing spread and improving chances of containment and firefighter access. Compliance with environmental regulations covers responsible handling of refrigerants, spill and drainage controls, emissions considerations, and permits, ensuring the installation aligns with local, state, and federal rules. Other options miss critical aspects: focusing only on fire safety, ventilation only, or electrical infrastructure only would leave gaps in protection, safety, and regulatory compliance that are essential for outdoor ESS installations.

5. Which of the following is NOT a step in the emergency response procedures for an ESS?

- A. Conducting routine maintenance**
- B. Alerting responders**
- C. Ensuring safety**
- D. Identifying the emergency**

Emergency response procedures for an ESS focus on immediate actions to protect people and control the incident. Identifying the emergency quickly determines the appropriate response. Alerting responders ensures trained personnel and equipment arrive without delay. Ensuring safety covers securing the area, isolating hazards if possible, and applying necessary protective measures. Conducting routine maintenance, on the other hand, is a normal-operating activity and should not be performed during an emergency, as it can create additional hazards or delay critical actions. That's why routine maintenance is not part of emergency response procedures.

6. Which of the following is NOT a root cause of ESS battery failures?

- A. Mechanical damage**
- B. Overcharging**
- C. Software updates**
- D. Thermal abuse**

Software updates are not a root cause of ESS battery failures. The failures typically stem from physical or electrical stress on the cells: mechanical damage (impact or crushing that damages internal cell structure and can cause short circuits), overcharging (exceeding the designed voltage can drive abnormal reactions and gas buildup, leading to swelling or thermal runaway), and thermal abuse (excess heat or poor cooling accelerates aging and can trigger dangerous reactions). The battery management system uses software to control charging, temperature, and safety interlocks, and when updates are done correctly, they help prevent failures. A faulty update is not itself a fundamental cause of battery fires or degradation; the underlying issues come from damage, improper charging, or heat exposure.

7. Depth of Discharge (DoD) refers to which of the following?

- A. DoD refers to the percentage of capacity used.**
- B. The battery's temperature range during discharge.**
- C. The cost per cycle of discharge.**
- D. The maximum discharge current.**

Depth of discharge is the percentage of a battery's stored energy that has been used. It asks how much of the battery's capacity has been drawn down. For example, if a battery with 100 Ah capacity has 60 Ah drawn, the depth of discharge is 60%. DoD is the complement of the state of charge—the remaining energy in the battery is described by SoC, not DoD. This concept matters because deeper discharges generally shorten a battery's cycle life, so engineers balance acceptable energy withdrawal with desired longevity. The other options refer to different things: temperature range relates to operating conditions during discharge, cost per cycle is an economic measure, and maximum discharge current is about how fast you can pull current, not how much of the capacity has been used.

8. Describe the separation distance requirements for outdoor ESS installations.

A. ESS must be separated by at least 5 feet from property lines, buildings, and other equipment to prevent fire spread.

B. Separation is not required.

C. Separation must be at least 100 feet.

D. Separation must be less than 2 feet.

The essential idea is to keep a safe clearance around an outdoor energy storage system to limit fire spread and keep access clear for responders. The requirement is a minimum separation of five feet from property lines, buildings, and other equipment. This buffer reduces the chance that a fire in one unit or nearby components will ignite adjacent structures or gear through radiant heat or flame contact, and it provides space for firefighting operations, inspections, and maintenance without obstruction. Always verify against local codes and the equipment manufacturer's guidelines, as larger separations may be needed in some installations due to size, enclosure type, or surrounding hazards. Separated by less than that or not requiring separation would create unsafe conditions and is not consistent with standard safety practice.

9. Which term refers to setting up equipment in a specified location?

A. Maintenance

B. Operating Instructions

C. Installation

D. Permit

Setting up equipment in a specified location is installation. This term covers placing the equipment in its site, assembling components, connecting utilities (like electrical and refrigerant lines), and configuring the system so it's ready to operate. In the context of flammable-refrigerant systems, installation also involves meeting space requirements, ventilation, clearances, and code compliance to ensure safe operation from the start. Maintenance refers to ongoing care and servicing after setup, operating instructions are the user guidelines for how to run the equipment, and a permit is a formal authorization that may be needed before starting the setup but isn't the act of placing the equipment itself. Installation best captures the act of putting the system in place in the required location.

10. Which of the following is NOT a step in the emergency response procedures for an ESS?

- A. Identifying the emergency**
- B. Documenting the incident**
- C. Executing the response plan**
- D. Post-incident review**

In an ESS emergency, the actions are focused on quick, real-time response to control hazards and protect people. The first step is recognizing that an emergency is occurring so the right procedures can be activated. Next, you implement the prepared response plan—this means following established actions to shut down systems, isolate the hazard, alert others, and move to a safe state. After the situation is under control, a post-incident review helps you evaluate what happened and identify improvements for future responses. Documenting the incident is not part of the on-scene emergency response sequence. While keeping records and reporting details are important for compliance and learning, these tasks are administrative and typically occur after the immediate response or as part of the follow-up process, not as an on-scene step in the ESS procedure.

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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://fdnycofb28.examzify.com>

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

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