

CITY & GUILDS LEVEL 2 AWARD IN F-GAS PRACTICE EXAM (SAMPLE)

STUDY GUIDE



**SAMPLE STUDY GUIDE
WITH LIMITED QUESTIONS**

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THE FULL VERSION STUDY GUIDE**

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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. How is the system compression ratio calculated?**
 - A. Subtract discharge pressure from suction pressure
 - B. Add discharge pressure to suction pressure
 - C. Divide discharge pressure by suction pressure (gauge)
 - D. Multiply discharge pressure by suction pressure
- 2. What is a significant environmental impact of F-gases?**
 - A. They deplete the ozone layer
 - B. They have a high global warming potential (GWP)
 - C. They contribute to groundwater contamination
 - D. They increase air pollutants
- 3. What does the term 'flammability' mean in refrigerant context?**
 - A. The ability of a refrigerant to cool efficiently
 - B. Resistance to pressure
 - C. The ability of a refrigerant to ignite and burn in air
 - D. The ability of a refrigerant to condense
- 4. What type of training is required for handlers of F-gases?**
 - A. On-the-job training only
 - B. Certification under the relevant competency standards
 - C. Informal training provided by suppliers
 - D. Online courses without practical assessments
- 5. Why is proper ventilation critical when servicing F-Gas systems?**
 - A. To enhance machinery performance
 - B. To avoid exposure to refrigerants
 - C. To reduce maintenance costs
 - D. To increase CO2 levels
- 6. Why is the proper disposal of F-Gas products critical?**
 - A. To recover costs of production
 - B. To prevent environmental damage and ensure compliance with regulations
 - C. To decrease energy consumption in facilities
 - D. To extend the life of refrigeration systems

- 7. What is the primary purpose of the F-Gas certification?**
- A. To allow untrained personnel to handle refrigerants
 - B. To ensure technicians are knowledgeable and compliant with regulations
 - C. To increase the sale of refrigerant products
 - D. To mandate the use of older refrigerants
- 8. If the running discharge pressure of a refrigeration system with R134a is 8 barg and the saturation temperature is approximately 35 degrees, what state will the refrigerant be in if the condenser outlet temperature is 40 degrees?**
- A. A saturated liquid
 - B. A superheated vapor
 - C. A mixture of liquid and vapor
 - D. A compressed liquid
- 9. Which agency is responsible for enforcing F-gas regulations in the UK?**
- A. The Environment Agency
 - B. The Health and Safety Executive
 - C. The Food Standards Agency
 - D. The Department for Business and Trade
- 10. What is a potential consequence of failing to comply with F-Gas regulations?**
- A. Increased energy efficiency
 - B. Legal penalties and fines
 - C. Improved public perception
 - D. Partnership opportunities

Answers

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

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Explanations

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1. How is the system compression ratio calculated?

- A. Subtract discharge pressure from suction pressure
- B. Add discharge pressure to suction pressure
- C. Divide discharge pressure by suction pressure (gauge)**
- D. Multiply discharge pressure by suction pressure

The calculation of the system compression ratio is determined by dividing the discharge pressure by the suction pressure, both measured in gauge pressure. The compression ratio is a key aspect of a refrigeration or air conditioning system as it indicates how much the refrigerant gas is compressed from its low-pressure state (suction) to its high-pressure state (discharge). By using gauge pressure for both measurements, the calculation helps to focus on the effective pressures that the system operates under, excluding atmospheric pressure influences. This ratio is critical for assessing the efficiency and performance of a refrigeration system, enabling technicians to understand how much work the compressor is doing in terms of raising the pressure of the refrigerant. Using this method provides a clear numerical representation of the compression that occurs within the system, allowing for better diagnostics and maintenance planning.

2. What is a significant environmental impact of F-gases?

- A. They deplete the ozone layer
- B. They have a high global warming potential (GWP)**
- C. They contribute to groundwater contamination
- D. They increase air pollutants

F-gases, which include hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF₆), and nitrogen trifluoride (NF₃), are known for their high global warming potential (GWP). This means that, when released into the atmosphere, they have a significantly greater capacity to trap heat compared to carbon dioxide (CO₂). For example, some F-gases can have a GWP thousands of times greater than CO₂ over a 100-year period. Their use in refrigeration, air conditioning, and foam-blowing agents has contributed to their prevalence in emissions, prompting regulatory efforts to reduce their use to combat climate change. The other options touch on other environmental issues but are not applicable in the context of F-gases. Ozone layer depletion is primarily associated with chlorofluorocarbons (CFCs) and halons, rather than F-gases. Groundwater contamination can result from various chemicals but is not a significant impact attributed to F-gases. Similarly, while air pollutants are a valid environmental concern, F-gases are specifically linked to global warming rather than general air pollution. Thus, the defining impact of F-gases is

3. What does the term 'flammability' mean in refrigerant context?

- A. The ability of a refrigerant to cool efficiently
- B. Resistance to pressure
- C. The ability of a refrigerant to ignite and burn in air**
- D. The ability of a refrigerant to condense

In the context of refrigerants, 'flammability' refers to the ability of a substance to ignite and burn when exposed to a source of ignition in the presence of air. This characteristic is crucial for assessing the safety of refrigerants, as flammable materials pose a significant risk in environments where they are used, especially in refrigeration and air conditioning systems. Understanding the flammability of a refrigerant helps technicians and engineers choose appropriate chemicals that operate safely in various applications without posing fire hazards. The other options describe different properties of refrigerants but do not relate directly to their ability to catch fire. For instance, the efficiency of cooling or the condensation process does not inherently indicate a refrigerant's flammability, nor does resistance to pressure. Therefore, the term 'flammability' is specifically aligned with the capacity to ignite and sustain a fire in the presence of air, making it essential for safe handling and application in the refrigeration industry.

4. What type of training is required for handlers of F-gases?

- A. On-the-job training only
- B. Certification under the relevant competency standards**
- C. Informal training provided by suppliers
- D. Online courses without practical assessments

Handlers of F-gases are required to obtain certification under relevant competency standards, as this ensures that they have the necessary knowledge and skill set to safely handle and manage these substances. This certification process is designed to meet specific regulations and industry standards that govern the handling of fluorinated gases, which can be hazardous if not managed correctly. It usually includes theoretical training and practical assessments to confirm the handler's competence in dealing with refrigerants and other F-gases effectively. This requirement for formal certification highlights the importance of safety and regulatory compliance in industries that work with these gases. It also serves to minimize risks to both the environment and human health, given the potential for harmful greenhouse gas emissions from improper handling. The training received through certification addresses critical topics such as safe handling practices, leak detection, and proper recovery methods, equipping handlers with a comprehensive understanding of the responsibilities associated with managing F-gases. In contrast, on-the-job training, informal training by suppliers, or online courses without practical assessments do not provide the structured and recognized learning environment required to ensure that handlers are fully competent and compliant with legal obligations. Such approaches may lack the rigor and validation needed to effectively ensure safety in the handling of F-gases.

5. Why is proper ventilation critical when servicing F-Gas systems?

- A. To enhance machinery performance
- B. To avoid exposure to refrigerants**
- C. To reduce maintenance costs
- D. To increase CO2 levels

Proper ventilation is critical when servicing F-Gas systems primarily to avoid exposure to refrigerants. Refrigerants can be harmful to health, and inadequate ventilation can lead to the accumulation of these gases in the working environment, posing a risk of inhalation or exposure. By ensuring effective ventilation, the concentration of any leaked or released refrigerants is kept at safe levels, thereby protecting technicians and personnel from potential health hazards associated with their exposure. Other aspects such as enhancing machinery performance, reducing maintenance costs, and increasing CO2 levels are not directly related to the necessity of proper ventilation in the context of F-Gas systems. The primary focus should always be on safety and the prevention of harmful exposure, which is where proper ventilation plays a crucial role.

6. Why is the proper disposal of F-Gas products critical?

- A. To recover costs of production
- B. To prevent environmental damage and ensure compliance with regulations**
- C. To decrease energy consumption in facilities
- D. To extend the life of refrigeration systems

The proper disposal of F-Gas products is critical primarily because it helps prevent environmental damage and ensures compliance with regulations. F-gases, which include hydrofluorocarbons (HFCs), are potent greenhouse gases that can contribute significantly to climate change if released into the atmosphere. Proper disposal methods such as recycling or destruction in accordance with the laws and guidelines set forth by environmental agencies lessen this potential damage. Additionally, there are specific regulations governing the management and disposal of these substances aimed at reducing their environmental impact. Compliance with these regulations promotes responsible management of F-Gases, ensuring that businesses operate within legal guidelines while contributing to broader environmental protection efforts. While other aspects such as cost recovery, energy consumption, and system longevity are relevant to the overall management of refrigerants and HVAC systems, they do not encompass the primary environmental focus and regulatory compliance that underline the necessity of proper disposal of F-Gas products.

7. What is the primary purpose of the F-Gas certification?

- A. To allow untrained personnel to handle refrigerants
- B. To ensure technicians are knowledgeable and compliant with regulations**
- C. To increase the sale of refrigerant products
- D. To mandate the use of older refrigerants

The primary purpose of the F-Gas certification is to ensure that technicians are knowledgeable and compliant with regulations related to the handling of fluorinated greenhouse gases (F-gases) used in refrigeration, air conditioning, and heat pump systems. This certification provides the necessary training and assessment to equip technicians with an understanding of the environmental impact of these gases, the legal obligations surrounding their use, and the best practices for their safe handling. By having certified technicians, the industry can minimize the risk of emissions, ensure safety standards are met, and promote environmentally responsible practices. Understanding this certification's role is vital, as it establishes a baseline level of training and competence, which is essential for maintaining the integrity and compliance of the industry.

8. If the running discharge pressure of a refrigeration system with R134a is 8 barg and the saturation temperature is approximately 35 degrees, what state will the refrigerant be in if the condenser outlet temperature is 40 degrees?

- A. A saturated liquid
- B. A superheated vapor**
- C. A mixture of liquid and vapor
- D. A compressed liquid

In evaluating the state of the refrigerant R134a in this scenario, consider the relationship between pressure, temperature, and the properties of refrigerants. The running discharge pressure of 8 barg corresponds to a saturation temperature of approximately 35 degrees Celsius, indicating that at this pressure, the refrigerant transitions between its liquid and vapor phases. When the temperature of the condenser outlet is 40 degrees Celsius, which exceeds the saturation temperature of 35 degrees Celsius at the same pressure, it signifies that the refrigerant is no longer in the saturated state. Instead, the increased temperature implies that the refrigerant must be in a superheated state since it is above the saturation temperature associated with its existing pressure. Being in a superheated vapor state means that the refrigerant is entirely vapor without any liquid present. This condition is desirable in the condenser, allowing for effective heat transfer as the refrigerant dissipates heat before transitioning to the liquid state within the condenser coils. The other potential states, like saturated liquid, a mixture of liquid and vapor, or a compressed liquid, do not apply here as they would imply that the refrigerant is either at or below the saturation point or under excessive pressure without being superheated. Being aware of these thermal dynamics is essential for proper

9. Which agency is responsible for enforcing F-gas regulations in the UK?

- A. The Environment Agency**
- B. The Health and Safety Executive
- C. The Food Standards Agency
- D. The Department for Business and Trade

The Environment Agency is the body responsible for enforcing F-gas regulations in the UK. This agency plays a crucial role in the management and protection of the environment, particularly concerning the use and emissions of fluorinated gases, which have a significant impact on climate change. The Environment Agency oversees compliance with the legislative framework set by the F-gas regulations, ensuring that businesses follow proper practices for handling, recovery, and disposal of these substances. The enforcement includes monitoring industry practices, investigating compliance failures, and imposing penalties for non-compliance. Their focus is primarily on environmental protection and climate change mitigation, which aligns directly with the goals of the F-gas regulations to reduce greenhouse gas emissions.

10. What is a potential consequence of failing to comply with F-Gas regulations?

- A. Increased energy efficiency
- B. Legal penalties and fines**
- C. Improved public perception
- D. Partnership opportunities

Failing to comply with F-Gas regulations can lead to legal penalties and fines. These regulations are in place to ensure the safe handling and disposal of fluorinated gases, which can be harmful to the environment due to their potential to contribute to global warming. Non-compliance not only jeopardizes public health and safety but can also result in significant financial penalties from regulatory bodies. This serves as a strong deterrent for individuals and businesses, emphasizing the importance of adhering to legal requirements to protect both the environment and their operations. In contrast, the other options do not directly stem from non-compliance. Increased energy efficiency and improved public perception are positive outcomes of responsible practices, while partnership opportunities typically arise from adherence to standards and regulations, rather than from violations.

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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://cityandguildslvl2fgas.examzify.com>

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

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