

FDNY COF – USE OF LPG OR CNG IN ENGINE FUEL SYSTEMS (G-22) 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	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. What is the maximum allowable distance for LPG tanks from a building?**
 - A. Within 5 feet of the building
 - B. At least 10-25 feet depending on tank size
 - C. There is no specific requirement
 - D. At least 30 feet from any structure
- 2. What are the environmental benefits of using LPG over gasoline?**
 - A. Increased fuel costs
 - B. Higher greenhouse gas emissions
 - C. Lower greenhouse gas emissions and reduced air pollutants
 - D. No significant benefits
- 3. What factors can affect the operation of engines using LPG or CNG?**
 - A. Fuel color and engine size
 - B. Temperature, pressure, and fuel quality
 - C. Car model and driver experience
 - D. Time of day and altitude
- 4. What is the minimum working pressure design for non-metallic hoses used outdoors?**
 - A. 150 psi
 - B. 250 psi
 - C. 300 psi
 - D. 350 psi
- 5. What is the typical pressure range for LPG delivery systems?**
 - A. Between 1 to 50 psi
 - B. Between 10 to 100 psi
 - C. Between 5 to 200 psi
 - D. Between 250 to 500 psi
- 6. What does CNG stand for?**
 - A. Compressed Natural Gas
 - B. Compressed Nitrogen Gas
 - C. Clean Natural Gas
 - D. Controlled Natural Gas

- 7. Which substance is primarily detected by gas detectors used in LPG and CNG applications?**
- A. Propane and methane
 - B. Butane and ethane
 - C. Carbon dioxide and nitrogen
 - D. Hydrogen and oxygen
- 8. What can excessive pressure in a CNG tank lead to?**
- A. Increased fuel efficiency
 - B. Safe temperatures
 - C. Tank rupture and potential explosion
 - D. Reduced engine power
- 9. What should be regularly checked to ensure safe operation of LPG tanks?**
- A. Tank color and branding
 - B. Pressure relief valves and safety lines
 - C. Visual aesthetics of the storage area
 - D. Fuel mileage of the vehicle
- 10. Natural gas is compared to air in terms of weight. Is it heavier or lighter?**
- A. Heavier
 - B. Lighter
 - C. Equal
 - D. More dense

Answers

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

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Explanations

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1. What is the maximum allowable distance for LPG tanks from a building?

- A. Within 5 feet of the building
- B. At least 10-25 feet depending on tank size**
- C. There is no specific requirement
- D. At least 30 feet from any structure

The maximum allowable distance for LPG tanks from a building is based on safety regulations designed to minimize the risk of fire and explosion. The correct answer indicates that the required distance is at least 10 to 25 feet, which varies depending on the size of the tank. Smaller tanks may have a shorter distance requirement, while larger tanks necessitate a greater separation from structures to mitigate the hazards associated with potential leaks. This regulation is in place to ensure adequate safety measures are followed, as LPG is a highly flammable substance. Keeping the tanks at a specified distance helps to protect buildings and occupants from the risks associated with gas accumulation and potential ignition sources. The emphasis on tank size reflects that larger quantities of flammable gas pose greater risks, thus necessitating more stringent distance regulations. In contrast, the other options do not accurately reflect the established safety standards. For instance, suggesting a distance within 5 feet would not provide sufficient safety clearance for any LPG tank. A statement that there is no specific requirement disregards the regulatory framework intended to protect both structures and people. Lastly, a minimum distance of at least 30 feet might be excessively cautious for smaller tanks, which do have established minimum distances much lower. Thus, the guidelines are in place to factor in the

2. What are the environmental benefits of using LPG over gasoline?

- A. Increased fuel costs
- B. Higher greenhouse gas emissions
- C. Lower greenhouse gas emissions and reduced air pollutants**
- D. No significant benefits

The choice highlighting lower greenhouse gas emissions and reduced air pollutants as the environmental benefits of using LPG over gasoline is based on the inherent characteristics of LPG. LPG, or liquefied petroleum gas, burns more cleanly than gasoline, leading to lower emissions of harmful pollutants such as carbon monoxide, nitrogen oxides, and particulates. This cleaner combustion process results in a lower overall carbon footprint when comparing it to conventional gasoline. Specifically, combustion of LPG produces less carbon dioxide, a significant greenhouse gas, thereby contributing to a reduction in greenhouse gas emissions. Furthermore, the reduced pollutants associated with LPG can improve air quality, which is particularly beneficial in urban areas. This can lead to better health outcomes for the population as well as reduced environmental impact. Therefore, LPG is often viewed as a greener alternative to gasoline, making it a favorable choice for those concerned with environmental sustainability and the effects of combustion emissions on climate change.

3. What factors can affect the operation of engines using LPG or CNG?

- A. Fuel color and engine size
- B. Temperature, pressure, and fuel quality**
- C. Car model and driver experience
- D. Time of day and altitude

The operation of engines using Liquefied Petroleum Gas (LPG) or Compressed Natural Gas (CNG) can be significantly influenced by temperature, pressure, and fuel quality. Temperature affects the vaporization of the fuel. LPG, for instance, needs to be at a certain temperature to convert from liquid to gas effectively for combustion. If the temperature is too low, it may not vaporize properly, leading to poor engine performance or starting issues. Pressure is crucial for gas fuels because it is stored at high pressure and needs to be regulated during operation. Variations in pressure can impact fuel delivery to the engine, resulting in suboptimal combustion and efficiency. Fuel quality is also a critical factor; impurities or variations in composition can lead to incomplete combustion, engine knocking, or increased emissions. Higher quality fuels typically lead to better engine performance and lower maintenance issues. These factors collectively play a vital role in ensuring that engines function efficiently and safely when using LPG or CNG.

4. What is the minimum working pressure design for non-metallic hoses used outdoors?

- A. 150 psi
- B. 250 psi**
- C. 300 psi
- D. 350 psi

The ideal choice for the minimum working pressure design for non-metallic hoses used outdoors is based on safety and operational effectiveness. A minimum working pressure of 250 psi ensures that the hose can withstand outdoor conditions and the pressures commonly experienced in LPG or CNG applications. This pressure rating provides a suitable margin for safety and performance, considering factors such as potential temperature fluctuations and exposure to environmental elements. It also accommodates the dynamics involved in the transfer of gases, preventing the risk of hose failure under typical operating conditions. While minimum working pressure values lower than 250 psi might be suitable for certain applications, they do not offer the reliability and safety needed for outdoor use where conditions can be more unpredictable. Establishing a higher standard, like 250 psi, reduces the likelihood of failure and ensures that the hoses maintain their integrity when exposed to elements like UV radiation and varying temperatures.

5. What is the typical pressure range for LPG delivery systems?

- A. Between 1 to 50 psi
- B. Between 10 to 100 psi
- C. Between 5 to 200 psi**
- D. Between 250 to 500 psi

The typical pressure range for LPG (liquefied petroleum gas) delivery systems is between 5 to 200 psi. This range is critical for ensuring the safe and effective operation of LPG systems. In practical applications, LPG is stored in liquid form under pressure, and when it is released, it vaporizes and flows to the engine or equipment using the gas. The specified pressure range allows for efficient delivery while maintaining control over the fuel supply. Operating within this range helps to prevent issues related to fuel delivery, combustion efficiency, and potential safety hazards. Understanding this pressure range is essential for safe handling and operation of LPG systems, ensuring compliance with safety standards and regulations. Systems operating outside of this specified range may face operational challenges or safety risks, thus highlighting the importance of adhering to the typical pressure guidelines.

6. What does CNG stand for?

- A. Compressed Natural Gas
- B. Compressed Nitrogen Gas
- C. Clean Natural Gas
- D. Controlled Natural Gas

CNG stands for Compressed Natural Gas. This term refers to natural gas that has been compressed to less than 1% of its volume at standard atmospheric pressure. CNG is primarily composed of methane and is utilized as a cleaner alternative to gasoline and diesel in vehicles. It is favored for its lower emissions compared to traditional fossil fuels, making it an environmentally friendly option for fuel in transportation. The other options, while they contain terms related to natural gas or gases, do not accurately describe what CNG stands for. Compressed Nitrogen Gas refers to nitrogen that has been compressed for various industrial applications but is not relevant in the context of fuel for vehicles. Clean Natural Gas might imply a notion of natural gas being environmentally friendly, but it is not an established acronym. Controlled Natural Gas suggests some management or regulation aspect of natural gas but lacks precision in defining what CNG actually represents in the context of fuel systems.

7. Which substance is primarily detected by gas detectors used in LPG and CNG applications?

- A. Propane and methane
- B. Butane and ethane
- C. Carbon dioxide and nitrogen
- D. Hydrogen and oxygen

Gas detectors used in LPG (Liquefied Petroleum Gas) and CNG (Compressed Natural Gas) applications are specifically designed to identify hydrocarbons, primarily propane and methane. These gases are the main constituents of LPG and CNG, respectively, and are lighter than air, which makes them hazardous when they leak in enclosed spaces. Propane, which is commonly used in heating, cooking, and as engine fuel, is significant for detection because of its flammability and potential for explosion. Methane, the primary component of natural gas, is also crucial to monitor due to similar safety concerns. Both gases are typically odorless, but manufacturers often add odorants to them to ensure leaks can be detected by smell. The other options listed consist of substances that either do not play a direct role in LPG and CNG applications or are not typically the focus of gas detection efforts. For instance, while butane and ethane may be present in LPG, they are not the primary gases detected. Carbon dioxide and nitrogen are often outputs of combustion processes but are not the primary fuels being monitored. Hydrogen and oxygen are crucial for combustion reactions but are not typically detected in the context of LPG and CNG leak detection.

8. What can excessive pressure in a CNG tank lead to?

- A. Increased fuel efficiency
- B. Safe temperatures
- C. Tank rupture and potential explosion
- D. Reduced engine power

Excessive pressure in a CNG (Compressed Natural Gas) tank can lead to tank rupture and potential explosion because CNG is stored at very high pressures, often over 3,000 psi. Each tank is designed to withstand a certain maximum pressure. If the pressure exceeds this limit, it can compromise the structural integrity of the tank. The combination of high-pressure gas and a compromised tank can result in catastrophic failure, leading to rupture. This can create a significant hazard, possibly causing explosions and fire risks in the vicinity. Proper monitoring and regulation of tank pressure are crucial to ensure safety and prevent such dangerous outcomes.

9. What should be regularly checked to ensure safe operation of LPG tanks?

- A. Tank color and branding
- B. Pressure relief valves and safety lines**
- C. Visual aesthetics of the storage area
- D. Fuel mileage of the vehicle

Regular checks of pressure relief valves and safety lines are essential for the safe operation of LPG tanks because these components are critical for the safe handling and use of gases. Pressure relief valves are designed to release gas in the event that the pressure within the tank exceeds safe levels, thus preventing potential explosions or ruptures. Safety lines, or fittings, provide additional assurance that the tank remains securely connected to its fuel system and that gas escapes can be effectively managed. Ensuring that these systems are functioning correctly directly impacts safety by mitigating risks associated with overpressure situations and leaks. Regular maintenance and inspections can identify any potential issues before they escalate, ensuring both the integrity of the tank and the safety of personnel. The other options, while they may have their own importance in different contexts, do not hold the same level of direct relevance to the safety of LPG tanks and their proper operation. Tank color and branding may help to identify the type of gas and ensure compliance with regulations, but they do not affect the operational safety of the tanks themselves. Visual aesthetics of the storage area relate more to organization and cleanliness rather than safety. The fuel mileage of the vehicle is primarily concerned with efficiency and performance, not the operational safety of the LPG tanks.

10. Natural gas is compared to air in terms of weight. Is it heavier or lighter?

- A. Heavier
- B. Lighter**
- C. Equal
- D. More dense

Natural gas is indeed lighter than air. This is an important characteristic that affects how it behaves when released into the atmosphere. When natural gas leaks, it tends to rise and disperse into the air due to its lower density. This behavior is crucial for safety considerations, as it minimizes the risk of accumulating in low-lying areas, which can create explosive conditions. Understanding the properties of natural gas in relation to air is essential for designing safety protocols in environments where this fuel is utilized. By recognizing that natural gas is lighter, individuals and professionals can implement measures to vent leaks effectively and prevent hazardous situations. This knowledge is foundational in fields that involve the use of LPG or CNG in engine fuel systems, such as safety management and emergency response planning.

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:

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

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