

TANKER FAMILIARIZATION LIQUEFIED NATURAL GAS (LNG) 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. Methane's vapor density relative to air is 0.55, indicating it is lighter than air. What does this imply about its buoyancy compared with air?**
 - A. It is lighter than air
 - B. It is heavier than air
 - C. It has the same density as air
 - D. It cannot mix with air
- 2. If the flammable range for LNG is above 15% range, what does this mean?**
 - A. Too lean to burn
 - B. Too rich to burn
 - C. It can burn at any concentration
 - D. It is non-flammable
- 3. What are mutagens?**
 - A. Affects only somatic cells
 - B. Affects only plant cells
 - C. Affects viral DNA
 - D. Affects genetic cells both egg and sperm
- 4. What is the specific gravity of LNG?**
 - A. 0.45
 - B. 0.60
 - C. 0.30
 - D. 0.50
- 5. Which term is used to measure heat energy in English units?**
 - A. Calorie
 - B. BTU (British Thermal Unit)
 - C. Watt
 - D. Joule
- 6. What is the primary purpose of a peak shaving plant and load station?**
 - A. Supplement for the ups and downs in demand for heating in cold cities year round
 - B. A method to store LNG for long-term use
 - C. A system to compress gas for pipelines
 - D. A facility for generating electricity for the grid

- 7. What is the process by which LNG is heated, converting it into its gaseous state?**
- A. Liquefaction
 - B. Regasification
 - C. Vaporization
 - D. Condensation
- 8. LEL stands for what in gas safety terms?**
- A. Lower Emission Level
 - B. Lower Explosive Limit
 - C. Least Explosive Level
 - D. Liquefied Expansion Limit
- 9. Which temperature scale is used to express the LN2 boiling point in the material?**
- A. Fahrenheit
 - B. Celsius
 - C. Kelvin
 - D. Rankine
- 10. Freeboard is defined as which of the following?**
- A. The height between the main deck and waterline
 - B. The height from the waterline to the bottom of the hull
 - C. The distance from waterline to the top of the deck
 - D. The vertical distance from keel to deck

Answers

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

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Explanations

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1. Methane's vapor density relative to air is 0.55, indicating it is lighter than air. What does this imply about its buoyancy compared with air?

- A. It is lighter than air**
- B. It is heavier than air
- C. It has the same density as air
- D. It cannot mix with air

Buoyancy depends on density relative to the surrounding air. If a gas is lighter than air, it displaces air that weighs more than the gas itself, producing a net upward force. Methane having a density of 0.55 times that of air means it is lighter than air, so it experiences positive buoyancy and rises. It will generally move upward and disperse, rather than sinking or staying at the same level. The other ideas don't fit because a heavier-than-air gas would sink, a gas with the same density would be neutrally buoyant, and gases do mix with air rather than staying completely separate.

2. If the flammable range for LNG is above 15% range, what does this mean?

- A. Too lean to burn
- B. Too rich to burn**
- C. It can burn at any concentration
- D. It is non-flammable

The concept here is the flammable range, which is the range of vapor concentrations in air that can sustain combustion. For LNG (primarily methane), that range is roughly from 5% to 15% by volume in air. If the concentration is above the upper limit—about 15%—the mixture is too rich to burn because there isn't enough oxygen to support the flame. So, a vapor cloud with LNG concentration higher than 15% won't ignite or sustain combustion. The other options describe concentrations outside the range differently (too lean would be below the lower limit; being able to burn at any concentration isn't true; non-flammable is too vague).

3. What are mutagens?

- A. Affects only somatic cells
- B. Affects only plant cells
- C. Affects viral DNA
- D. Effects genetic cells both egg and sperm**

Mutagens are agents that cause changes in DNA, producing mutations. They can affect many cell types, but mutations in germ cells—the eggs and the sperm—are the ones that can be passed to offspring. That's why describing mutagens as affecting genetic cells in eggs and sperm best captures their potential to create heritable changes. The other statements are incomplete: mutagens are not limited to somatic cells, nor to plant cells, and while they can influence viral DNA in some contexts, their defining idea is DNA mutations in any organism, especially germ cells that can be inherited.

4. What is the specific gravity of LNG?

- A. 0.45**
- B. 0.60
- C. 0.30
- D. 0.50

Specific gravity tells you how heavy LNG is compared with water. LNG is kept cryogenically cold and mainly consists of methane, giving it a density around 450 kg per cubic meter. With water at about 1000 kg per cubic meter, the LNG specific gravity is roughly 0.45. Because it's less dense than water, LNG would float on a water surface as a liquid, which influences how it behaves in spills and how cargo tanks affect buoyancy during loading and unloading. The exact value can vary with the gas blend and temperature, but 0.45–0.50 is a typical range used in practice; exams often use 0.45 as the standard figure. Values like 0.60 would be much denser than LNG usually is, and 0.30 would be too light for this liquid.

5. Which term is used to measure heat energy in English units?

- A. Calorie
- B. BTU (British Thermal Unit)**
- C. Watt
- D. Joule

In LNG practice, measuring heat energy in English units uses the British Thermal Unit. A BTU is the amount of heat required to raise the temperature of one pound of water by one degree Fahrenheit. It's the standard energy unit in the English engineering system for fuels and heating calculations, which is why it's the appropriate choice here. Watt reflects power (rate of energy transfer), not total energy. Joule is an SI unit of energy, not an English unit. Calorie is also an energy unit but is mainly used in nutrition and some scientific contexts, not the typical English engineering standard for fuel energy content.

6. What is the primary purpose of a peak shaving plant and load station?

- A. Supplement for the ups and downs in demand for heating in cold cities year round**
- B. A method to store LNG for long-term use
- C. A system to compress gas for pipelines
- D. A facility for generating electricity for the grid

Peak shaving plants are used to level fluctuations in gas demand, especially for heating loads in cold cities. They store LNG during periods of low demand and then vaporize and feed it into the distribution system when demand spikes, such as on cold days, helping to keep supply steady and avoid stressing pipelines. This smoothing of the load is the main purpose, enabling reliable heat supply without needing oversized infrastructure. Long-term LNG storage, compression for pipelines, or electricity generation aren't the primary roles here—the plant's job is to balance and shave peak demand.

7. What is the process by which LNG is heated, converting it into its gaseous state?

- A. Liquefaction
- B. Regasification**
- C. Vaporization
- D. Condensation

Regasification is the process of heating LNG to turn it back into natural gas. LNG is produced by cooling natural gas to about -162°C , so it becomes a dense liquid for transport. At receiving terminals, LNG is passed through vaporizers where heat is added—often from seawater or another heat source—until it warms and returns to a gaseous state suitable for pipeline distribution. This term is used specifically for converting LNG back to gas; other terms describe different steps in the cycle, such as liquefaction (cooling to liquid) or condensation/gas to liquid, but regasification refers to returning LNG to its gaseous form for use.

8. LEL stands for what in gas safety terms?

- A. Lower Emission Level
- B. Lower Explosive Limit**
- C. Least Explosive Level
- D. Liquefied Expansion Limit

It's about the flammable range of a gas in air and the threshold at which ignition is possible. Lower Explosive Limit is the term for the lowest concentration of a flammable gas or vapor in air that can sustain a flame if an ignition source is present. Below this limit, the mixture is too lean to burn; above it, the mixture becomes capable of ignition and flame propagation up to the upper explosive limit. This concept is why detectors and safety systems reference a percentage of LEL to gauge risk. The other options don't describe this ignition threshold—Lower Emission Level, Least Explosive Level, and Liquefied Expansion Limit aren't standard terms in gas safety.

9. Which temperature scale is used to express the LN2 boiling point in the material?

- A. Fahrenheit**
- B. Celsius
- C. Kelvin
- D. Rankine

Understanding which temperature scale is used for cryogenic data is essential. Liquid nitrogen boils at -196°C , which is 77 K. In LNG work and most scientific contexts, temperatures for cryogenic substances are given in Celsius or Kelvin because these scales align with SI units and make it easy to relate temperature changes to physical properties. Fahrenheit is not the standard for expressing LN2's boiling point at these low temperatures, as its numbers are inconvenient and less consistent for scientific calculations (-196°C is about -321°F). So the material you're studying is likely using either Celsius or Kelvin; if it uses Celsius, you'd read -196°C , and if it uses Kelvin, you'd read 77 K. The main point is that Celsius or Kelvin are the appropriate scales for LN2 data, not Fahrenheit.

10. Freeboard is defined as which of the following?

- A. The height between the main deck and waterline
- B. The height from the waterline to the bottom of the hull**
- C. The distance from waterline to the top of the deck
- D. The vertical distance from keel to deck

Freeboard is the vertical distance from the waterline to the top of the deck that is intended to stay above water. This measure helps define how much hull remains dry and contributes to stability and regulatory load considerations. The distance from the waterline down to the keel is called the draft, which tells you how deeply the hull sits in the water. The distance from keel to deck is essentially the ship's overall height, not the amount of hull above the water. So the standard definition is the vertical span from the waterline up to the top of the deck.

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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://tankerfamlng.examzify.com>

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

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