

Scuba Diving International (SDI) Computer Nitrox Practice Exam (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. What factor can influence the choice of Nitrox mix for a dive?**
 - A. Personal experience level**
 - B. Size of the dive boat**
 - C. Water temperature**
 - D. Dive depth and planned duration**
- 2. What is the most common health risk associated with using Nitrox?**
 - A. Decompression sickness**
 - B. Barotrauma**
 - C. Nitrogen narcosis**
 - D. Oxygen toxicity**
- 3. What is the main goal during a dive with Nitrox?**
 - A. To go deeper than regular air dives.**
 - B. To enhance energy and reduce nitrogen buildup.**
 - C. To minimize oxygen exposure.**
 - D. To extend bottom time without limits.**
- 4. What is the recommended first aid for decompression sickness?**
 - A. Giving them cold water to drink**
 - B. Controlling their temperature and administering pure oxygen**
 - C. Massaging the affected areas**
 - D. Giving them aspirin for pain relief**
- 5. What is a safe practice regarding PO2 to avoid oxygen toxicity during Nitrox dives?**
 - A. Keep PO2 below 1.3**
 - B. Limit dives to less than 18 meters**
 - C. Maintain a deep dive profile**
 - D. Use only pure oxygen**

6. What type of dive profile helps minimize nitrogen absorption?

- A. Flat ascent profiles**
- B. Steep descent profiles**
- C. Variable depth profiles**
- D. Shallow dive profiles**

7. What is the importance of pre-dive checks in Nitrox diving?

- A. To ensure eligibility for deeper dives**
- B. To confirm equipment compatibility**
- C. To enhance the overall diving experience**
- D. To prevent diving with incorrect mixes**

8. How can a diver calculate the maximum operating depth for a given Nitrox mix?

- A. MOD = (Partial Pressure of Oxygen / 0.21) - 1**
- B. MOD = (0.8 / 0.21) + 1**
- C. MOD = (Pressure - 0.21) / 2**
- D. MOD = (Oxygen % - 21) / 0.07**

9. Why are some dive groups equipped with Nitrox divers only?

- A. To restrict the number of divers**
- B. To enhance safety and increase bottom times**
- C. To use less air**
- D. To comply with legal regulations**

10. What additional equipment might be necessary when using Nitrox?

- A. Standard air tank**
- B. Technical diving trimix**
- C. Oxygen analyzer**
- D. Surface marker buoy**

Answers

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

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Explanations

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1. What factor can influence the choice of Nitrox mix for a dive?

- A. Personal experience level**
- B. Size of the dive boat**
- C. Water temperature**
- D. Dive depth and planned duration**

The choice of Nitrox mix for a dive is significantly influenced by dive depth and planned duration. This is primarily because different Nitrox mixes have varying percentages of oxygen and nitrogen, which affect the diver's exposure to these gases at different depths. As depth increases, the partial pressure of gases also increases, which impacts how nitrogen is absorbed into the body and influences the risk of nitrogen narcosis and decompression sickness. Planning for the duration of the dive is equally crucial, as extended exposure to higher amounts of oxygen can lead to oxygen toxicity, particularly at depths below a certain threshold. This is why divers must calculate and select an appropriate Nitrox blend that optimally balances oxygen and nitrogen levels, considering their specific dive profile to minimize risks. While personal experience level can influence a diver's comfort with a specific Nitrox mix, adept training and knowledge of dive planning and gas exposure are far more critical when determining the appropriate mix. The size of the dive boat and water temperature, while potentially relevant to other aspects of diving logistics and comfort, do not directly impact the choice of Nitrox mix in relation to the dive profile.

2. What is the most common health risk associated with using Nitrox?

- A. Decompression sickness**
- B. Barotrauma**
- C. Nitrogen narcosis**
- D. Oxygen toxicity**

Oxygen toxicity is a significant health risk associated with using Nitrox because Nitrox is a breathing gas that contains a higher percentage of oxygen than atmospheric air. While standard air consists of approximately 21% oxygen and 79% nitrogen, Nitrox mixtures can vary, commonly containing 32% to 36% oxygen. As the percentage of oxygen increases, so does the risk of oxygen toxicity, particularly at greater depths. The partial pressure of oxygen increases with depth, which can lead to symptoms including visual disturbances, tinnitus, and convulsions if the partial pressure exceeds safe limits, typically around 1.4 ATA (atmospheres absolute) for recreational diving. This makes it crucial for divers using Nitrox to understand their gas mixture and monitor their depth to avoid exposure to elevated partial pressures of oxygen. The other options such as decompression sickness, barotrauma, and nitrogen narcosis, while they can occur in various diving situations, are less directly associated with the use of Nitrox specifically. Decompression sickness is related to nitrogen saturation and off-gassing; barotrauma is related to pressure changes; and nitrogen narcosis occurs with increased nitrogen in the body, which is less of a concern when using Nitrox since it replaces some

3. What is the main goal during a dive with Nitrox?

- A. To go deeper than regular air dives.
- B. To enhance energy and reduce nitrogen buildup.**
- C. To minimize oxygen exposure.
- D. To extend bottom time without limits.

The primary objective during a dive with Nitrox is to enhance energy and reduce nitrogen buildup. By using a gas mixture that has a higher proportion of oxygen and a lower concentration of nitrogen than regular air, divers benefit from several physiological advantages. The increased oxygen fraction helps improve the diver's overall energy levels and can lead to a more efficient oxygen exchange in the lungs. This can improve circulation and reduce fatigue during and after the dive. Furthermore, with the reduced nitrogen percentage in the gas mix, the body absorbs less nitrogen, which decreases the chances of nitrogen narcosis and reduces the risk of decompression sickness upon ascent. This understanding of gas mixtures reinforces the importance of managing nitrogen exposure and promotes safer diving practices while also emphasizing the efficiency and well-being of the diver during the activity.

4. What is the recommended first aid for decompression sickness?

- A. Giving them cold water to drink
- B. Controlling their temperature and administering pure oxygen**
- C. Massaging the affected areas
- D. Giving them aspirin for pain relief

The recommended first aid for decompression sickness emphasizes controlling the patient's body temperature and administering pure oxygen as quickly as possible. This approach is critical because decompression sickness, also known as "the bends," occurs when nitrogen bubbles form in the tissues and bloodstream during or after a dive due to rapid changes in pressure. Administering pure oxygen helps reduce the size of the nitrogen bubbles and enhances the elimination of nitrogen from the body. Controlling the patient's temperature is equally important, as maintaining a stable and normal body temperature can prevent further complications and help improve the effectiveness of oxygen therapy. Both of these actions are vital in the initial management of decompression sickness before professional medical help can be obtained. Considering the other options, providing cold water to drink could lead to hypothermia and is not beneficial in treating decompression sickness. Massaging the affected areas may risk causing more harm as it could potentially dislodge the bubbles or worsen the condition. Giving aspirin is not advisable as it does not address the underlying issue of nitrogen bubbles and could lead to unnecessary side effects. Overall, administering pure oxygen and controlling temperature are the most effective initial responses and are critical for the patient's recovery.

5. What is a safe practice regarding PO2 to avoid oxygen toxicity during Nitrox dives?

- A. Keep PO2 below 1.3**
- B. Limit dives to less than 18 meters**
- C. Maintain a deep dive profile**
- D. Use only pure oxygen**

Keeping the partial pressure of oxygen (PO2) below 1.3 is a vital practice to prevent oxygen toxicity during Nitrox dives. Oxygen toxicity can occur when divers are exposed to high levels of oxygen, which can lead to various adverse effects, including convulsions and other neurological issues. By staying below a PO2 of 1.3, divers reduce the risk of such toxic reactions, especially during deeper dives where the pressure increases the partial pressure of gases. This practice is particularly important as divers plan their Nitrox mixtures; the mixture's oxygen content, combined with depth and the corresponding increase in pressure, determines the actual partial pressure experienced. Understanding this principle helps divers make informed decisions about their dive profiles, ensuring both safety and enjoyment while maximizing the benefits of using enriched air Nitrox.

6. What type of dive profile helps minimize nitrogen absorption?

- A. Flat ascent profiles**
- B. Steep descent profiles**
- C. Variable depth profiles**
- D. Shallow dive profiles**

A flat ascent profile is effective in minimizing nitrogen absorption because it allows the diver to gradually release nitrogen from their body tissue back to the environment at a controlled rate. When divers ascend too quickly, they risk increasing the partial pressure of nitrogen in their tissues, which can lead to decompression sickness. A flat ascent provides the body with adequate time to off-gas nitrogen safely, resulting in a lower likelihood of nitrogen-related complications. In contrast, steep descent profiles typically involve rapid changes in pressure and may cause divers to absorb nitrogen more quickly, increasing the risk of nitrogen narcosis and other issues. Variable depth profiles can also introduce complications, as changes in depth might mean fluctuating pressures that can lead to unpredicted nitrogen absorption patterns. Shallow dive profiles do not inherently minimize nitrogen absorption efficiently; while they can reduce overall exposure, the ascent rate is crucial in the broader context of dive safety. Thus, maintaining a flat ascent profile is key to mitigating nitrogen absorption effectively during dives.

7. What is the importance of pre-dive checks in Nitrox diving?

- A. To ensure eligibility for deeper dives
- B. To confirm equipment compatibility
- C. To enhance the overall diving experience
- D. To prevent diving with incorrect mixes**

Pre-dive checks in Nitrox diving are crucial for preventing diving with incorrect gas mixes. Nitrox, which is a blend of oxygen and nitrogen, has specific properties that can significantly affect a diver's safety and performance. If a diver uses a gas mix that does not match the planned dive profile or exceeds the maximum operating depth, it can lead to serious health risks, such as oxygen toxicity or decompression sickness. Conducting a thorough pre-dive check allows divers to verify that the gas mixtures in their tanks are correct and that their equipment is functioning properly. This is especially important for Nitrox dives, where the concentrations of oxygen can be higher than those in regular air. Miscalculating or misidentifying the gas mix can have immediate and dangerous consequences underwater. By ensuring that divers are using the right mix before they enter the water, pre-dive checks mitigate the risks associated with Nitrox diving, ultimately enhancing safety and permitting a more enjoyable dive experience. This awareness and attention to detail reduce the potential for accidents and contribute to the overall integrity of the dive.

8. How can a diver calculate the maximum operating depth for a given Nitrox mix?

- A. MOD = (Partial Pressure of Oxygen / 0.21) - 1**
- B. MOD = (0.8 / 0.21) + 1
- C. MOD = (Pressure - 0.21) / 2
- D. MOD = (Oxygen % - 21) / 0.07

The maximum operating depth (MOD) for a given Nitrox mix is calculated using the equation that combines the partial pressure of oxygen and atmospheric pressure. The correct formula reflects how to determine the depth at which the partial pressure of oxygen remains within safe limits for the diver. In this case, the formula provided indicates that to find the MOD, you divide the specified partial pressure of oxygen by the percentage of oxygen in the atmosphere (in this case, standard air is considered to have 21% oxygen, which corresponds to 0.21 when represented as a decimal). By then subtracting 1, this formula effectively converts the partial pressure of oxygen into a depth measure in terms of atmosphere (ATA), allowing you to determine the maximum depth limit for safe diving with that specific Nitrox blend. This approach is crucial because as a diver descends, the pressure increases, and it is essential to maintain the partial pressure of oxygen within safe levels to avoid oxygen toxicity. The formula comprehensively integrates these principles, ensuring divers can calculate their limits accurately based on their gas mixture.

9. Why are some dive groups equipped with Nitrox divers only?

- A. To restrict the number of divers**
- B. To enhance safety and increase bottom times**
- C. To use less air**
- D. To comply with legal regulations**

Selecting Nitrox divers only for certain dive groups primarily centers around the enhancement of safety and the ability to extend bottom times. Nitrox is a breathing gas that contains a higher percentage of oxygen than standard air, which typically comprises about 21% oxygen and 79% nitrogen. When divers utilize Nitrox, they can benefit from a reduced accumulation of nitrogen in their bodies during a dive. This is particularly advantageous because lower nitrogen levels can contribute to a decreased risk of decompression sickness, allowing for safer ascending and decreased intervals before subsequent dives. Additionally, using Nitrox can extend bottom times at given depths compared to air, as divers can stay submerged longer without exceeding no-decompression limits. This increased bottom time allows divers more opportunities to explore and engage with the underwater environment, enhancing the overall diving experience while maintaining safety. While it does limit the group to those trained specifically in Nitrox, the primary focus remains on safety and maximizing dive opportunities through effectively managing nitrogen exposure.

10. What additional equipment might be necessary when using Nitrox?

- A. Standard air tank**
- B. Technical diving trimix**
- C. Oxygen analyzer**
- D. Surface marker buoy**

When using Nitrox, an oxygen analyzer is essential because it allows divers to accurately measure the oxygen content of their gas mixture. Understanding the precise ratio of oxygen to nitrogen is crucial for safe diving, as the increased percentage of oxygen in Nitrox compared to regular air can have significant implications for both safety and dive planning. By analyzing the tank contents, divers ensure they do not exceed safe limits for oxygen exposure, which can lead to toxicity at elevated pressures. While other equipment listed may be useful in various diving scenarios, they do not specifically pertain to the necessary checks and balances involved in using Nitrox. A standard air tank is not suitable for Nitrox, as it contains a different gas blend. Technical diving trimix is typically reserved for deeper dives where different gas mixes are employed, and a surface marker buoy, while helpful in signaling and navigation, does not directly relate to the use of Nitrox or gas composition monitoring.

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://sdi-computernitrox.examzify.com>

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

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