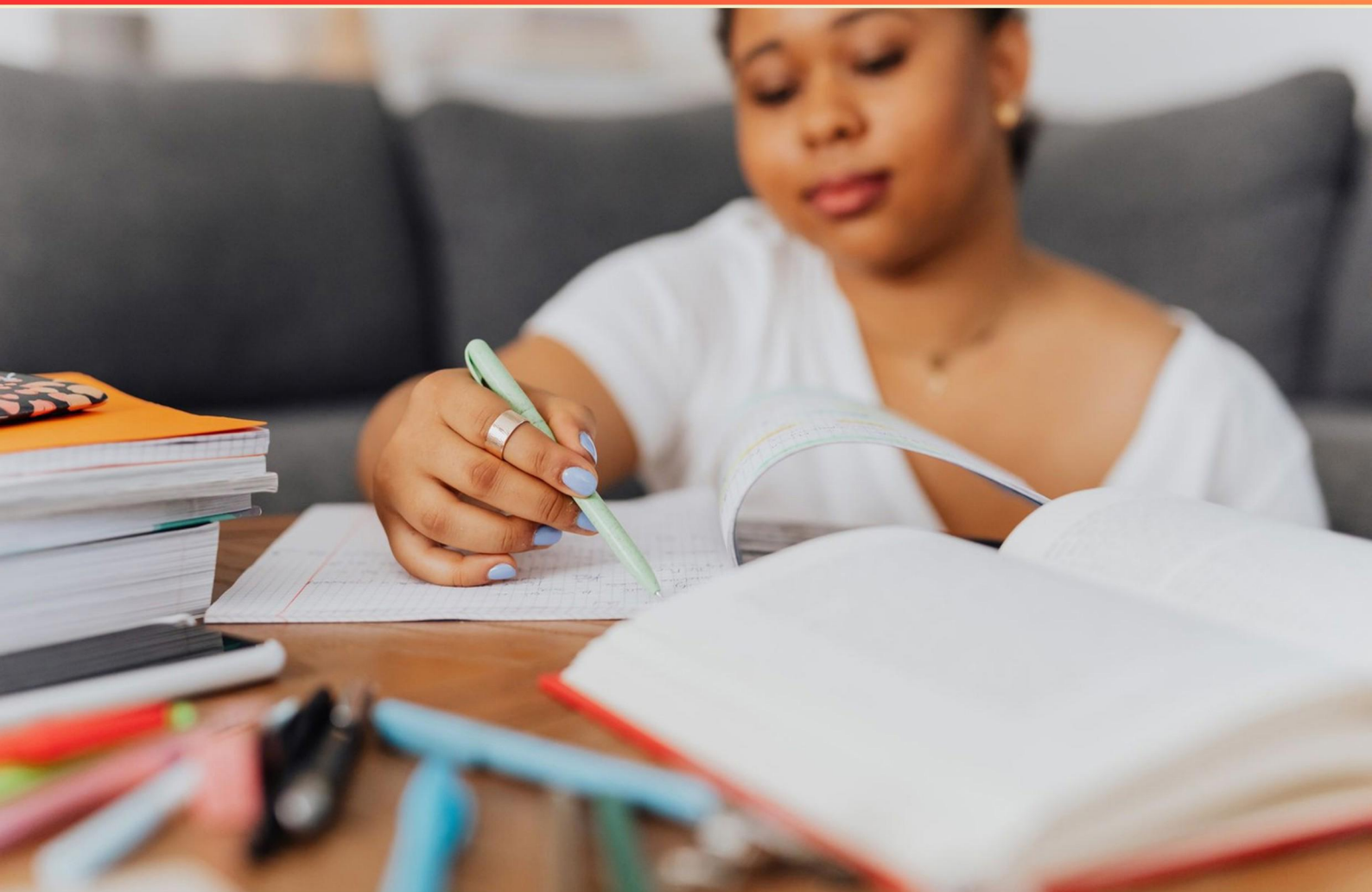


NCLEX OXYGENATION PRACTICE TEST (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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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. A chest X-ray shows a left lower-lobe consolidation. Which condition is most likely?**
 - A. Pneumonia
 - B. Pulmonary edema
 - C. Atelectasis
 - D. Lung cancer

- 2. In suspected pulmonary embolism, which describes the role of D-dimer testing?**
 - A. D-dimer is used as a screening test; a positive result prompts imaging.
 - B. D-dimer alone confirms PE.
 - C. D-dimer is not useful in evaluating PE.
 - D. D-dimer replaces the need for imaging when suspicion is high.

- 3. Before suctioning an intubated patient, what is a key nursing action to prevent hypoxemia?**
 - A. Administer bronchodilator
 - B. Preoxygenate with 100% oxygen for 1-2 minutes
 - C. Increase tidal volume for 2 minutes
 - D. Provide humidified dry air

- 4. If pH is low and PaCO₂ is high on ABG, which acid-base disturbance is most likely?**
 - A. Metabolic acidosis
 - B. Respiratory acidosis
 - C. Metabolic alkalosis
 - D. Respiratory alkalosis

- 5. Which phenomenon describes perfusion without ventilation in atelectasis, leading to a right-to-left shunt?**
 - A. Diffusion impairment
 - B. Perfusion without ventilation leading to a right-to-left shunt
 - C. Hypercapnic respiratory failure
 - D. Ventilation-perfusion mismatch

6. Which imaging modality can provide more detail than a chest X-ray when evaluating ARDS progression?
- A. MRI
 - B. Ultrasound
 - C. CT scan
 - D. Nuclear medicine scan
7. Which measurement is used along with hemoglobin to estimate arterial oxygen content (CaO₂)?
- A. PaO₂
 - B. Dissolved oxygen in plasma
 - C. SaO₂
 - D. Hematocrit
8. What does HCO₃⁻ relate to in arterial blood gas analysis?
- A. Oxygen carrying capacity.
 - B. Alveolar ventilation.
 - C. Acid-base status.
 - D. Hematologic status.
9. Which factor does NOT contribute to atelectasis?
- A. Inadequate ventilation
 - B. Surfactant deficiency
 - C. Airway obstruction
 - D. Adequate coughing and deep breathing
10. In a healthy adult, what is the normal arterial oxygen tension (PaO₂) range?
- A. 60-80 mmHg
 - B. 80-100 mmHg
 - C. 100-120 mmHg
 - D. 40-60 mmHg

Answers

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

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Explanations

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1. A chest X-ray shows a left lower-lobe consolidation. Which condition is most likely?

- A. Pneumonia**
- B. Pulmonary edema
- C. Atelectasis
- D. Lung cancer

When a chest radiograph shows consolidation in a lung lobe, it means the airspaces are filled with fluid, pus, or inflammatory exudate, making that area appear denser than normal. This pattern in a single lobe, such as the left lower lobe, is most commonly due to pneumonia, where infection fills the alveolar spaces and creates a homogeneous, dense area. Air may still move through the bronchi, so you can sometimes see air-filled bronchi—air bronchograms—within the dense region, which is a classic sign of alveolar consolidation from pneumonia. Pulmonary edema tends to present with more diffuse or perihilar/basilar markings and signs of fluid overload, often with a cardiomegaly background, rather than a focal lobar consolidation. Atelectasis involves loss of lung volume, leading to elevation of the diaphragm and crowding of the fissures, producing linear or wedge-shaped densities rather than the dense alveolar consolidation typical of pneumonia. Lung cancer might appear as a mass or nodular lesion and can cause post-obstructive atelectasis, but a localized, dense consolidation is most characteristic of an infection. So, the left lower-lobe consolidation on chest X-ray most strongly suggests pneumonia.

2. In suspected pulmonary embolism, which describes the role of D-dimer testing?

- A. D-dimer is used as a screening test; a positive result prompts imaging.**
- B. D-dimer alone confirms PE.
- C. D-dimer is not useful in evaluating PE.
- D. D-dimer replaces the need for imaging when suspicion is high.

D-dimer testing is a highly sensitive, but nonspecific, screening tool for suspected PE. The main idea is to use it to rule out disease in patients with low to intermediate pretest probability. If the D-dimer is negative in this context, PE is unlikely and imaging can often be avoided. However, a positive D-dimer does not confirm PE because many conditions can raise D-dimer levels, so imaging—usually CT pulmonary angiography—is needed to make a definitive diagnosis. D-dimer by itself cannot confirm PE and cannot replace imaging when clinical suspicion remains high, but it is still useful as a rule-out test in the appropriate patients.

3. Before suctioning an intubated patient, what is a key nursing action to prevent hypoxemia?

- A. Administer bronchodilator
- B. Preoxygenate with 100% oxygen for 1-2 minutes**
- C. Increase tidal volume for 2 minutes
- D. Provide humidified dry air

Starting with a full oxygen reservoir right before the suctioning helps prevent hypoxemia. Suctioning can briefly interrupt ventilation and remove oxygen from the lungs, leading to rapid drops in oxygen saturation. By preoxygenating with 100% oxygen for about 1–2 minutes, you maximize the alveolar oxygen content and extend the safe window for suctioning, reducing the chance of desaturation during the procedure. In an intubated patient, you can deliver that 100% oxygen through the ventilator circuit or with a bag-valve mask connected to the endotracheal tube. Other options don't directly address the risk of desaturation during suctioning: a bronchodilator helps with bronchospasm but doesn't guard oxygenation during the procedure; increasing tidal volume isn't indicated and can risk lung injury; humidified dry air isn't protective and isn't used to prevent hypoxemia during suctioning.

4. If pH is low and PaCO₂ is high on ABG, which acid-base disturbance is most likely?

- A. Metabolic acidosis
- B. Respiratory acidosis**
- C. Metabolic alkalosis
- D. Respiratory alkalosis

Interpreting ABG begins with identifying whether the pH indicates acidemia or alkalemia. In this scenario, the pH is low, so the patient has acidemia. To find the primary disturbance, look at the PaCO₂. A high PaCO₂ means carbon dioxide is accumulating, which forms carbonic acid and lowers pH—this points to a respiratory origin. Therefore, the most likely acid-base disturbance is respiratory acidosis. If it were metabolic acidosis, the PaCO₂ would typically be low due to respiratory compensation (hyperventilation). If it were respiratory alkalosis, the PaCO₂ would be low, not high. If it were metabolic alkalosis, the pH would be high. So the combination of acidemia with a high PaCO₂ fits respiratory acidosis best.

5. Which phenomenon describes perfusion without ventilation in atelectasis, leading to a right-to-left shunt?

- A. Diffusion impairment
- B. Perfusion without ventilation leading to a right-to-left shunt**
- C. Hypercapnic respiratory failure
- D. Ventilation-perfusion mismatch

Intrapulmonary shunt is the idea being tested here. In atelectasis, portions of the lung collapse and stop receiving air, so ventilation to those regions is essentially zero, while blood flow through the surrounding capillaries continues. That means blood passes through the lung without coming into contact with air for oxygen to diffuse in and carbon dioxide to diffuse out. The result is blood that remains deoxygenated by the time it reaches the left heart—a right-to-left shunt. This is a specific form of a ventilation-perfusion problem: V is zero in the affected units, so it behaves as a shunt. Diffusion impairment would involve a problem across the alveolar-capillary membrane, not the complete absence of ventilation. Hypercapnic respiratory failure arises from overall hypoventilation and CO₂ retention, not the selective perfusion of nonventilated alveoli. Ventilation-perfusion mismatch is broader and includes scenarios where some ventilation and perfusion are mismatched, but the described phenomenon is the classic shunt where perfusion occurs without ventilation.

6. Which imaging modality can provide more detail than a chest X-ray when evaluating ARDS progression?

- A. MRI
- B. Ultrasound
- C. CT scan**
- D. Nuclear medicine scan

In ARDS, you need detailed visualization of the lung tissue to see how much of the parenchyma is affected and how the pattern is changing over time. Chest X-ray often misses subtle or early changes because it's a 2D projection with overlapping structures, making it hard to distinguish edema, inflammation, and atelectasis. A CT scan provides cross-sectional, high-resolution images of the lungs, revealing the exact extent and distribution of injury. It can clearly show edema versus consolidation, identify ground-glass opacities, and quantify how much of the lung is aerated versus collapsed. This level of detail allows clinicians to track progression or improvement in ARDS more accurately than a chest X-ray. Other modalities have limitations for this purpose. MRI isn't ideal for lungs due to how air and tissue interact with imaging, and ultrasound mainly helps detect pleural effusions and some surface changes rather than full parenchymal detail. Nuclear medicine scans offer functional information but lack the spatial detail needed to assess structural progression of ARDS. So, CT scan is the modality that offers the most detailed assessment of lung injury progression in ARDS.

7. Which measurement is used along with hemoglobin to estimate arterial oxygen content (CaO₂)?

- A. PaO₂
- B. Dissolved oxygen in plasma
- C. SaO₂**
- D. Hematocrit

Oxygen content in arterial blood reflects both what's bound to hemoglobin and the small amount dissolved in plasma. The part bound to hemoglobin depends on how much hemoglobin you have and how saturated it is with oxygen, which is shown by the arterial oxygen saturation (SaO₂). To estimate CaO₂, you use the hemoglobin amount multiplied by its saturation (the bound portion), plus a small contribution from dissolved oxygen that comes from PaO₂. So the measurement that goes with hemoglobin to estimate CaO₂ is SaO₂. If SaO₂ drops, CaO₂ drops even if hemoglobin is normal, highlighting why saturation is key for this calculation.

8. What does HCO_3^- relate to in arterial blood gas analysis?

- A. Oxygen carrying capacity.
- B. Alveolar ventilation.
- C. Acid-base status.**
- D. Hematologic status.

Bicarbonate in arterial blood gas analysis is all about acid-base status. It's the main metabolic buffer in extracellular fluid, so its level tells you about the metabolic component of the acid-base balance. In ABG interpretation, pH reflects the balance between two opposing factors: the amount of dissolved carbon dioxide (PaCO_2 , which represents respiration) and the bicarbonate available to neutralize acids (HCO_3^- , which represents metabolism). The relationship is often described by Henderson-Hasselbalch: pH increases if the ratio of HCO_3^- to CO_2 rises, and decreases if that ratio falls. If HCO_3^- is high, you may see metabolic alkalosis or a compensatory change for a primary respiratory acidosis. If HCO_3^- is low, you may see metabolic acidosis or a compensatory response to a primary respiratory alkalosis. Normal HCO_3^- is roughly 22–26 mEq/L. Kidney function regulates HCO_3^- , and this adjustment happens more slowly (hours to days) compared with respiratory changes, which are rapid. This topic is about acid-base balance, not about oxygen carrying capacity (which depends on hemoglobin and oxygen content), alveolar ventilation (which affects PaCO_2), or hematologic status.

9. Which factor does NOT contribute to atelectasis?

- A. Inadequate ventilation
- B. Surfactant deficiency
- C. Airway obstruction
- D. Adequate coughing and deep breathing**

Atelectasis occurs when alveoli collapse because they aren't kept open by enough air or surfactant. Inadequate ventilation means air doesn't reach the alveoli, so they deflate. Surfactant deficiency raises surface tension, making alveoli easier to collapse. Airway obstruction blocks air flow to distal airways, leading to gas absorption and collapse of the affected alveoli. Adequate coughing and deep breathing, by contrast, helps reopen and maintain inflated alveoli, preventing atelectasis. So this factor does not contribute to atelectasis.

10. In a healthy adult, what is the normal arterial oxygen tension (PaO_2) range?

- A. 60–80 mmHg
- B. 80–100 mmHg**
- C. 100–120 mmHg
- D. 40–60 mmHg

PaO_2 is the amount of oxygen dissolved in arterial blood and shows how well oxygen moves from the lungs into the blood. In a healthy adult breathing room air at sea level, the alveolar PO_2 is about 100 mmHg, and the arterial PO_2 tends to be around that value because gas exchange is efficient. Clinically, a normal PaO_2 is about 80–100 mmHg, which corresponds to an oxygen saturation of roughly 95–100%. Values lower than 80 indicate some degree of hypoxemia, while values above 100 can occur with supplemental oxygen but aren't considered normal resting levels. So the range 80–100 mmHg best represents normal arterial oxygen tension.

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://nclexoxygenation.examzify.com>

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

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