

CARDIOPULMONARY PHYSIOTHERAPY PRACTICE TEST (SAMPLE)

STUDY GUIDE



**SAMPLE STUDY GUIDE
WITH LIMITED QUESTIONS**

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THE FULL VERSION STUDY GUIDE**

<https://cardiopulmphysiotherapy.examzify.com>



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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. Which of the following is an example of an inotropic drug?**
 - A. Digoxin
 - B. Lisinopril
 - C. Furosemide
 - D. Metoprolol

- 2. The total flow through a venturi mask should be how many times the patient's minute volume?**
 - A. 2-3 times
 - B. 6-8 times
 - C. 8-10 times
 - D. 4-6 times

- 3. Pump handle movement increases which thoracic diameter?**
 - A. Lateral diameter
 - B. Anterior-posterior diameter
 - C. Vertical diameter
 - D. Circumference

- 4. What is the normal V/Q ratio for gas exchange in a healthy individual?**
 - A. 0.5
 - B. 1
 - C. 2
 - D. 3

- 5. Atrial switch surgery is used to treat which condition?**
 - A. Transposition of the Great Arteries
 - B. PDA
 - C. VSD with PS
 - D. Tetralogy of Fallot

- 6. What is the normal running speed of an ECG?**
 - A. 25 mm/sec
 - B. 10 mm/sec
 - C. 50 mm/sec
 - D. 5 mm/sec

- 7. At low lung volumes, the equal pressure point is located at which structure?**
- A. Trachea
 - B. Bronchi
 - C. Alveoli
 - D. Pleural space
- 8. Which statement best describes the energy expenditure of the breathing muscles during rest?**
- A. Approximately 1% of total energy
 - B. Approximately 5% of total energy
 - C. Approximately 10% of total energy
 - D. Approximately 15% of total energy
- 9. Which condition is known to shift the oxyhemoglobin dissociation curve to the right?**
- A. Decreased CO₂
 - B. Hypothermia
 - C. Acute acidosis
 - D. Alkalosis
- 10. According to the data, how many kilocalories are produced per liter of oxygen consumed in a mixed diet?**
- A. 3 kcal
 - B. 4.2 kcal
 - C. 5 kcal
 - D. 5.5 kcal

Answers

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

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Explanations

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1. Which of the following is an example of an inotropic drug?

- A. Digoxin
- B. Lisinopril
- C. Furosemide
- D. Metoprolol

Inotropic drugs change the force of heart muscle contraction. A positive inotrope like digoxin increases the strength of each heartbeat. Digoxin is a cardiac glycoside that inhibits the Na⁺/K⁺ ATPase pump in heart cells. This leads to higher intracellular calcium through the Na⁺/Ca²⁺ exchanger, which makes the heart muscle contract more forcefully. Clinically, this helps improve cardiac output in certain heart failure settings and can help control ventricular rate in atrial fibrillation. Other drugs listed don't increase contractile force: lisinopril lowers afterload by blocking the renin-angiotensin system, furosemide reduces preload via diuresis, and metoprolol lowers heart rate and contractility (negative inotropy). So digoxin best fits as an example of an inotropic drug.

2. The total flow through a venturi mask should be how many times the patient's minute volume?

- A. 2-3 times
- B. 6-8 times
- C. 8-10 times
- D. 4-6 times

The key idea is that a venturi mask delivers a fixed oxygen concentration by using a jet to entrain room air. To keep that concentration accurate, the total flow through the mask must meet and exceed the patient's inspiratory demand. If the flow is too low compared with the minute ventilation, the patient will pull in more room air, diluting the oxygen and causing variability in FiO₂. A practical guideline is to have a total flow roughly four to six times the patient's minute ventilation, which helps prevent entrainment of room air and minimizes rebreathing of exhaled gas. This balance keeps the prescribed oxygen level stable across different breathing patterns.

3. Pump handle movement increases which thoracic diameter?

- A. Lateral diameter
- B. Anterior-posterior diameter
- C. Vertical diameter
- D. Circumference

Inhalation with the pump handle pattern expands the chest mainly in the front-to-back direction. As the upper ribs move upward and forward at their joints, the sternum is pushed forward and the anterior part of the rib cage lifts, increasing the distance between the sternum and the spine. So, the anterior-posterior diameter becomes larger. By comparison, the bucket handle mechanism widens the chest laterally, and vertical height changes mainly with diaphragmatic descent. The circumference is not a separate measure that explains this specific rib movement.

4. What is the normal V/Q ratio for gas exchange in a healthy individual?

- A. 0.5
- B. 1**
- C. 2
- D. 3

Ventilation and perfusion must be matched to maximize gas exchange. In a healthy lung, the amount of air reaching the alveoli roughly equals the blood flow through the surrounding capillaries, so the V/Q ratio is about one. This balance allows oxygen to diffuse into the blood efficiently while CO₂ diffuses out for removal. regional differences exist: gravity makes more perfusion at the lower parts of the lung and relatively more ventilation at the upper parts, but when averaged across the whole lung, the ratio centers around 1. If ventilation greatly exceeds perfusion, you get a high V/Q with wasted ventilation (dead space); if perfusion greatly exceeds ventilation, you get a low V/Q with limited oxygen transfer (shunt-like physiology). Therefore, the normal ratio is approximately one.

5. Atrial switch surgery is used to treat which condition?

- A. Transposition of the Great Arteries**
- B. PDA
- C. VSD with PS
- D. Tetralogy of Fallot

When the great arteries are transposed, the normal flow of blood is disrupted because each ventricle pumps to the wrong vessel, creating parallel circulation. An atrial switch (such as the Mustard or Senning procedure) fixes this by redirecting the blood at the atrial level. The systemic venous return from the body is redirected so it goes to the left ventricle and then to the pulmonary artery, while the pulmonary venous return from the lungs is redirected so it goes to the right ventricle and then to the aorta. In effect, the two atria are used to reassign the pathways, so a functional two-ventricle circulation is restored with the right ventricle handling systemic circulation. This approach is specific to transposition of the great arteries and is not the solution for other conditions listed. Patent ductus arteriosus closes or is closed surgically for PDA, not by rerouting atrial blood. A ventral septal defect with pulmonary stenosis or Tetralogy of Fallot requires repair of the septal defect and relief of the obstruction, not an atrial switch.

6. What is the normal running speed of an ECG?

- A. 25 mm/sec**
- B. 10 mm/sec
- C. 50 mm/sec
- D. 5 mm/sec

Understanding how fast the ECG paper moves is essential because it turns the markings on the trace into actual time. The standard speed for most clinical ECGs is 25 millimeters per second. At this speed, each small box (1 mm) corresponds to 0.04 seconds and each large box (5 mm) corresponds to 0.20 seconds, so five large boxes make one second. This consistent relationship lets clinicians measure intervals like PR, QRS duration, and QT accurately and compare findings across tests. A higher speed, such as 50 mm/sec, would give more detail per second, which some settings use for precise measurements, but it isn't the routine standard. Slower speeds, like 10 or 5 mm/sec, would stretch the intervals out and are not typical for modern ECGs.

7. At low lung volumes, the equal pressure point is located at which structure?

- A. Trachea
- B. Bronchi
- C. Alveoli**
- D. Pleural space

During expiration, there is a point along the airway where the pressure inside the airway exactly equals the surrounding pleural pressure; this is the equal pressure point. When lung volume is low, the proximal airways are better supported, but the smaller, distal airways lose radial traction and are more prone to compression as pleural pressure rises during forced expiration. This causes the equal pressure point to shift farther down the airway, toward the distal airways near the alveolar region. Hence, at low lung volumes the equal pressure point occurs in the alveolar/very distal airway region. The larger airways (trachea and main bronchi) have cartilaginous support making collapse less likely there, and the pleural space is outside the airway system, not a site along the airway where pressures equalize.

8. Which statement best describes the energy expenditure of the breathing muscles during rest?

- A. Approximately 1% of total energy
- B. Approximately 5% of total energy**
- C. Approximately 10% of total energy
- D. Approximately 15% of total energy

Quiet breathing uses only a small amount of energy, because the work is mainly to gently move air against the elastic recoil of the lungs and chest wall rather than to push air through resistance. In healthy adults, the respiratory muscles collectively account for about five percent of total energy expenditure at rest. This reflects how efficient the diaphragm and intercostals are during calm breathing, plus the fact that tidal volumes and breathing rate are modest when resting. Understanding this helps explain why much of resting metabolism goes to other organs and processes, while the breathing muscles stay relatively economical. The figure would be different if the work of breathing increased—such as with high ventilation demands, airway obstruction, obesity, or lung disease—where the energy cost can rise noticeably. The other options would imply either too little cost for quiet breathing or a much higher burden than is typically seen at rest in healthy individuals.

9. Which condition is known to shift the oxyhemoglobin dissociation curve to the right?

- A. Decreased CO₂
- B. Hypothermia
- C. Acute acidosis**
- D. Alkalosis

The main concept here is how the oxyhemoglobin dissociation curve responds to conditions that affect hemoglobin's affinity for oxygen. A rightward shift means hemoglobin releases oxygen more readily to tissues (higher P₅₀) because its affinity for O₂ decreases. This shift happens when factors promote easier unloading: higher CO₂, lower pH (acidosis), higher temperature, and increased 2,3-BPG. Acute acidosis increases hydrogen ion concentration, lowering pH, and triggers the Bohr effect. This changes hemoglobin so it prefers to release O₂ to tissues that are metabolically active and producing acids, causing the curve to shift to the right. That's why this option fits best. In contrast, decreases in CO₂ reduce acidity and, along with cooler temperatures, tend to tighten O₂ binding to hemoglobin, shifting the curve to the left and making O₂ unloading harder. Alkalosis raises pH, also promoting tighter binding and a leftward shift.

10. According to the data, how many kilocalories are produced per liter of oxygen consumed in a mixed diet?

- A. 3 kcal
- B. 4.2 kcal**
- C. 5 kcal
- D. 5.5 kcal

Energy produced per liter of oxygen depends on the mix of substrates being oxidized. When the body uses a typical mix of fats and carbohydrates (a mixed diet), the caloric equivalent of oxygen is about 4.2 kcal per liter of O₂. This reflects an intermediate respiratory quotient (RQ) around 0.8: not as high as pure carbohydrate oxidation (which yields more energy per liter of O₂) and not as low as pure fat oxidation. So the data point for a mixed diet sits at roughly 4.2 kcal per liter of O₂, making that value the best match. If it were mostly carbohydrate, you'd expect closer to about 5 kcal per liter; if mostly fat, around 4.7 kcal per liter, with the given data showing 4.2 for the mixed case.

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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://cardiopulmphysiotherapy.examzify.com>

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

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