

CIEMT MEDICAL AND PHYSIOLOGY PRACTICE EXAM (SAMPLE)

STUDY GUIDE



**SAMPLE STUDY GUIDE
WITH LIMITED QUESTIONS**

**VISIT US ONLINE FOR
THE FULL VERSION STUDY GUIDE**

<https://ciemtmedicalphysiology.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. Normal Blood pH range is

- A. 7.0-7.3
- B. 7.5-7.8
- C. 7.35-7.45
- D. 6.8-7.2

2. Which mnemonic is used to guide pain assessment?

- A. DCAP-BTLS
- B. OPQRST
- C. SAMPLE
- D. AVPU

3. Which term refers to an imbalance between air and blood flow in the lungs?

- A. Oxygen Therapy
- B. Ventilation-Perfusion Mismatch
- C. Spontaneous Pneumothorax
- D. Pleural Space

4. Which chamber pumps blood to the body?

- A. Right Ventricle
- B. Right Atrium
- C. Left Ventricle
- D. Left Atrium

5. Which term is defined as blood clot blocking the pulmonary artery?

- A. Spontaneous Pneumothorax
- B. Pleural Space
- C. Pulmonary Embolism
- D. Oxygen Therapy

6. Which term means exposure to radiation energy?

- A. Acute Radiation Syndrome
- B. Irradiation
- C. Contamination
- D. Toxicology

- 7. Which term describes the anatomical area between the vagina and the anus?**
- A. Vestibule
 - B. Pelvic floor
 - C. Perineum
 - D. Anus
- 8. Which hormone is the primary stress hormone that increases heart rate and blood pressure?**
- A. Epinephrine
 - B. Cortisol
 - C. Insulin
 - D. Aldosterone
- 9. Which stage of shock is characterized by maintaining blood pressure through compensatory mechanisms?**
- A. Decompensated Shock
 - B. Shock
 - C. Compensated Shock
 - D. Cellular Hypoxia
- 10. Ischemia is best defined as which?**
- A. Inadequate blood supply
 - B. Excessive blood flow
 - C. Complete tissue death
 - D. Intermittent chest pain

Answers

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

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Explanations

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1. Normal Blood pH range is

- A. 7.0-7.3
- B. 7.5-7.8
- C. 7.35-7.45**
- D. 6.8-7.2

Blood pH must be tightly regulated because even small changes alter enzyme activity, protein structure, and the excitability of nerves and muscles. The body keeps arterial pH in a narrow window, about 7.35 to 7.45, through buffering systems (like the bicarbonate buffer), respiratory control of CO₂, and renal handling of H⁺ and bicarbonate. If pH drops below this range (acidemia), the central nervous system and heart can be suppressed, leading to confusion, lethargy, or worse. If pH rises above this range (alkalemia), neurons become more excitable, which can cause tingling, muscle spasms or arrhythmias. The normal range 7.35–7.45 reflects this delicate balance; values outside indicate clinically significant disorders.

2. Which mnemonic is used to guide pain assessment?

- A. DCAP-BTLS
- B. OPQRST**
- C. SAMPLE
- D. AVPU

The main idea behind this question is understanding how to systematically gather information about a patient's pain using a concise, practical framework. The OPQRST mnemonic guides you through six essential aspects: Onset (when did the pain begin, was it sudden or gradual), Provocation and Palliation (what makes it worse or better, what relieves it), Quality (what the pain feels like—sharp, dull, burning, throbbing), Region and Radiation (where the pain is and whether it spreads), Severity (how intense the pain is, often on a 0–10 scale), and Timing (how long the pain lasts and whether it's intermittent or constant). This structure ensures you obtain a complete clinical picture of the pain, which is critical for diagnosis, choosing appropriate treatment, and monitoring response. Why this is the best fit: OPQRST directly addresses the core elements needed to characterize pain quickly and consistently, so you can tailor management and compare changes over time. The other mnemonics serve different purposes in patient assessment. DCAP-BTLS is a trauma-focused head-to-toe check for injuries, SAMPLE collects medical history and context, and AVPU rapidly screens level of consciousness. While useful in their contexts, they don't provide the focused, multidimensional pain assessment framework that OPQRST offers.

3. Which term refers to an imbalance between air and blood flow in the lungs?

- A. Oxygen Therapy
- B. Ventilation-Perfusion Mismatch**
- C. Spontaneous Pneumothorax
- D. Pleural Space

Ventilation-perfusion mismatch is the idea that gas exchange in the lungs depends on two closely matched processes: ventilation, the flow of air into the alveoli, and perfusion, the blood flow through the surrounding pulmonary capillaries. When these aren't aligned, oxygen uptake and carbon dioxide removal become inefficient. If air reaches alveoli that aren't well supplied with blood, you have high ventilation relative to perfusion (increased dead space). The alveoli are ventilated but not effectively used for gas exchange. If blood flows through alveoli that aren't getting enough air, you have low ventilation relative to perfusion (low V/Q), which means blood passes through without getting adequately oxygenated. Both situations disrupt normal gas exchange and can lead to hypoxemia. Normal V/Q isn't a perfect 1:1 because different lung regions have varying ventilation and perfusion, but overall there's a balance that maximizes oxygen uptake and carbon dioxide elimination. Conditions like pulmonary embolism or emphysema create imbalances that fall under this umbrella of V/Q mismatch, illustrating how crucial matched airflow and blood flow are for proper oxygenation. Oxygen therapy, spontaneous pneumothorax, and the pleural space describe treatments or anatomical features, not the imbalance between air and blood flow in the lungs.

4. Which chamber pumps blood to the body?

- A. Right Ventricle
- B. Right Atrium
- C. Left Ventricle**
- D. Left Atrium

The left ventricle is the chamber that sends blood to the body. It receives oxygen-rich blood from the left atrium and then contracts with high pressure to eject it into the aorta, sending it through the systemic circulation to all tissues. Its thick, muscular wall is built for this job, providing the force needed to overcome the body's resistance. The right ventricle, in contrast, pumps blood to the lungs for oxygenation, while the atria mainly receive blood and feed it to the ventricles.

5. Which term is defined as blood clot blocking the pulmonary artery?

- A. Spontaneous Pneumothorax
- B. Pleural Space
- C. Pulmonary Embolism**
- D. Oxygen Therapy

A clot blocking the pulmonary artery is called a pulmonary embolism. It happens when a thrombus—often that starts in a deep vein of the leg—travels through the veins, reaches the right heart, and lodges in the pulmonary arteries. That blockage stops blood from reaching portions of the lung, leading to a mismatch between ventilation and perfusion and reduced oxygen in the blood. Clinically, this condition can present with sudden shortness of breath and chest pain and can vary in severity depending on the size and location of the blockage. The other terms refer to different issues: spontaneous pneumothorax is air in the pleural space causing the lung to collapse, the pleural space is the thin potential space around the lungs, and oxygen therapy is a treatment used to improve oxygen levels rather than a condition itself.

6. Which term means exposure to radiation energy?

- A. Acute Radiation Syndrome
- B. Irradiation**
- C. Contamination
- D. Toxicology

Exposure to radiation energy is called irradiation. It describes the process of radiation delivering energy to a material or tissue as it passes through or interacts with it, whether from external sources like X-rays or gamma rays. This is the term used for being subjected to radiation itself. Contamination refers to radioactive material being present on surfaces or on the body, which may cause exposure if it decays or is ingested, but it is not the act of exposure. Acute Radiation Syndrome is the clinical illness that can follow a high-dose exposure, not the exposure itself. Toxicology is the broader study of how toxic substances affect living beings, not a term for radiation exposure.

7. Which term describes the anatomical area between the vagina and the anus?

- A. Vestibule
- B. Pelvic floor
- C. Perineum**
- D. Anus

The area between the vaginal opening and the anal opening is the perineum. This region sits between the urogenital triangle (anterior) and the anal triangle (posterior) and includes the perineal body at midline, where multiple perineal muscles attach. It's a distinct surface region, separate from deeper pelvic floor muscles, the vestibule (which is the space within the labia minora containing the urethral and vaginal openings), and the anus itself. So the perineum best describes the whole area between those two openings.

8. Which hormone is the primary stress hormone that increases heart rate and blood pressure?

- A. Epinephrine**
- B. Cortisol
- C. Insulin
- D. Aldosterone

Epinephrine is the fast-acting mediator of the stress response. When stress hits, the sympathetic nervous system triggers its release from the adrenal medulla. In the heart, epinephrine binds beta-1 receptors, raising heart rate and contractility, which increases cardiac output. In many blood vessels, it binds alpha-1 receptors to induce vasoconstriction, raising systemic vascular resistance and blood pressure. It also boosts energy availability by promoting glycogenolysis and lipolysis to supply quick fuel for the body's immediate actions. Cortisol, while part of the stress response, acts more slowly and mainly supports sustained glucose production and various metabolic adjustments over time, rather than acutely increasing heart rate. Insulin lowers blood glucose and is not a principal mediator of the stress-induced cardiovascular surge. Aldosterone primarily regulates fluid balance and long-term blood pressure via sodium and water retention, not the rapid heart rate rise seen in acute stress.

9. Which stage of shock is characterized by maintaining blood pressure through compensatory mechanisms?

- A. Decompensated Shock
- B. Shock
- C. Compensated Shock**
- D. Cellular Hypoxia

Compensated shock is the stage where blood pressure is still maintained despite reduced perfusion because the body activates corrective mechanisms. Baroreceptors trigger sympathetic outflow, which increases heart rate and contractility and causes vasoconstriction to raise systemic vascular resistance. Hormonal responses, including catecholamines and antidiuretic hormone, help preserve intravascular volume and maintain perfusion to essential organs like the brain and heart. Clinically this appears as tachycardia with cool, clammy skin and a normal or near-normal blood pressure, though the pulse pressure may be narrow. If these compensatory mechanisms fail, blood pressure drops and perfusion worsens, leading to decompensated shock. Cellular hypoxia describes the outcome at the tissue level, not a separate stage.

10. Ischemia is best defined as which?

- A. Inadequate blood supply**
- B. Excessive blood flow
- C. Complete tissue death
- D. Intermittent chest pain

Ischemia means a reduced blood supply to a tissue, which leads to insufficient oxygen and nutrients for normal cellular metabolism. In the heart, when coronary blood flow is limited, cells are deprived of oxygen, which can cause symptoms like chest discomfort during activity, but the core issue is the supply shortage, not the pain itself. If blood flow is restored in time, tissue can recover; prolonged ischemia can progress to tissue death (infarction). The other options miss the defining feature: excessive blood flow would be hyperemia; complete tissue death describes infarction/necrosis; intermittent chest pain can be a sign of ischemia but is not the definition itself.

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://ciemtmedicalphysiology.examzify.com>

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

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