

ACADEMIC BLOCK 1 UPT PHASE 2.5 – AEROSPACE PHYSIOLOGY (AP 190) PRACTICE TEST (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. What factor is affected by high radiation levels in outer space?**
 - A. Mental acuity and focus
 - B. Bone density and structure
 - C. DNA integrity and cancer risk
 - D. Physical stamina and endurance
- 2. Which symptom can indicate that someone is experiencing hypoxia?**
 - A. Nausea
 - B. Excessive sweating
 - C. Increased energy
 - D. Sharp vision
- 3. What is the difference between acute and chronic hypoxia?**
 - A. Acute develops quickly; chronic develops slowly
 - B. Acute lasts longer; chronic is shorter
 - C. Acute is permanent; chronic is temporary
 - D. Acute occurs at sea level; chronic only at high altitudes
- 4. Which trapped gas disorder is associated with pain and respiratory issues?**
 - A. The Bends
 - B. The Chokes
 - C. The Creeps
 - D. CNS Manifestations
- 5. What is the primary role of the fovea in vision?**
 - A. To provide peripheral vision
 - B. To enable color differentiation
 - C. To recognize and identify objects
 - D. To enhance peripheral orientation
- 6. Which physiological response needs to be monitored during space reentry?**
 - A. Changes in body temperature
 - B. Alterations in visual acuity
 - C. Physiological responses to gravity
 - D. Cholesterol levels in blood

- 7. Which of the following may occur as a psychological response to hypoxia?**
- A. Improved judgement
 - B. Euphoria
 - C. Increased paranoia
 - D. Heightened focus
- 8. What part of the vestibular system is responsible for measuring angular acceleration?**
- A. Otolith Organs
 - B. Semicircular Canals
 - C. Vestibular Nerve
 - D. Cochlea
- 9. What process helps maintain the pH balance of blood?**
- A. Gas Exchange
 - B. Nutrient Distribution
 - C. Muscle Coordination
 - D. Digestive Regulation
- 10. At what pressure are low pressure oxygen systems usually pressurized?**
- A. 200-250 psi
 - B. 400-450 psi
 - C. 1800-2000 psi
 - D. 600-700 psi

Answers

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

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Explanations

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1. What factor is affected by high radiation levels in outer space?

- A. Mental acuity and focus
- B. Bone density and structure
- C. DNA integrity and cancer risk**
- D. Physical stamina and endurance

High radiation levels in outer space primarily affect DNA integrity and cancer risk. In the space environment, cosmic rays and other types of radiation can cause direct damage to the DNA molecules in cells. This damage can lead to mutations, which are alterations in the DNA sequence. If these mutations occur in genes that control cell growth and division, they can increase the likelihood of cancer development. Research has shown that astronauts exposed to higher levels of ionizing radiation are at an increased risk of developing cancer compared to those on Earth. This risk emphasizes the importance of protective measures for space missions, as well as ongoing monitoring of astronauts' health. While mental acuity, bone density, and physical stamina can also be impacted by the space environment, the direct and significant threat of high radiation levels is most clearly linked to the potential for DNA damage and the subsequent increase in cancer risk.

2. Which symptom can indicate that someone is experiencing hypoxia?

- A. Nausea**
- B. Excessive sweating
- C. Increased energy
- D. Sharp vision

Hypoxia is a condition that occurs when there is insufficient oxygen available to the body or to specific tissues. One of the common symptoms of hypoxia is nausea. This can happen as the brain responds to inadequate oxygen levels, leading to discomfort in the gastrointestinal system. The lack of oxygen can affect various systems in the body and trigger symptoms such as nausea, headache, dizziness, and shortness of breath. In contrast, excessive sweating, while it can be associated with various conditions, is not a direct indicator of hypoxia. Increased energy is generally not a symptom of hypoxia; in fact, individuals experiencing hypoxia often feel fatigued or weak. Sharp vision is not typically connected to hypoxia either; individuals may instead experience visual disturbances or a decrease in clarity as oxygen levels drop. Understanding these symptoms helps in recognizing hypoxia early, enabling prompt action to restore adequate oxygenation.

3. What is the difference between acute and chronic hypoxia?

- A. Acute develops quickly; chronic develops slowly**
- B. Acute lasts longer; chronic is shorter
- C. Acute is permanent; chronic is temporary
- D. Acute occurs at sea level; chronic only at high altitudes

Acute and chronic hypoxia refer to different timeframes regarding oxygen deficiency in the body. Acute hypoxia develops rapidly, usually occurring within minutes to hours. This can result from sudden changes in altitude, exposure to harmful environments, or other immediate conditions that deprive the body of adequate oxygen. In contrast, chronic hypoxia develops gradually over an extended period, often occurring over days or weeks. It is frequently associated with prolonged exposure to low oxygen levels, such as residing at high altitudes where the body adapts over time to compensate for lower oxygen availability. Understanding this distinction is crucial, as the body's response to each type of hypoxia is different. Acute hypoxia requires immediate intervention, while chronic hypoxia allows for physiological changes, such as increased red blood cell production and altered breathing patterns, to occur as the body attempts to adapt to lower oxygen levels. This foundational knowledge helps in treating and managing conditions related to oxygen deprivation effectively.

4. Which trapped gas disorder is associated with pain and respiratory issues?

- A. The Bends
- B. The Chokes**
- C. The Creeps
- D. CNS Manifestations

The Chokes is the correct term for the trapped gas disorder associated with pain and respiratory issues. This disorder occurs when nitrogen bubbles form in the bloodstream or tissues during rapid ascent from depth, especially in divers. The formation of these bubbles can lead to serious respiratory complications, such as coughing or difficulty breathing, due to bubbles obstructing blood vessels in the lungs which can compromise oxygen exchange and lead to severe respiratory distress. The symptoms classify The Chokes distinctly from other disorders, as it encompasses both pain—often in the chest area—and respiratory challenges, reflecting its impact on the pulmonary system. In contrast, while the Bends also involves trapped gas and can cause pain due to joint and tissue embolisms, it does not particularly emphasize respiratory issues to the same extent. The Creeps generally refers to a sensation experienced during ascent, while CNS Manifestations involve neurological symptoms rather than respiratory ones. Thus, the primary association of The Chokes with pain and respiratory problems makes it the correct choice in this context.

5. What is the primary role of the fovea in vision?

- A. To provide peripheral vision
- B. To enable color differentiation
- C. To recognize and identify objects**
- D. To enhance peripheral orientation

The primary role of the fovea in vision is to recognize and identify objects. The fovea is a small, central pit in the retina that is densely packed with photoreceptor cells, specifically cone cells, which are responsible for high-acuity vision. This area allows for sharp central vision, vital for tasks that require detailed sight, such as reading or recognizing faces. Since the fovea has a high concentration of cones and minimal presence of rods, it excels in conditions of bright light and is essential for color perception and fine detail. While the fovea contributes to aspects of color differentiation by providing the necessary resolution to perceive colors, its primary function is in object recognition, which encompasses identifying shapes, details, and characteristics of the objects in our visual field. The other options refer to peripheral vision and orientation, which rely on different parts of the retina and are not the fovea's primary function.

6. Which physiological response needs to be monitored during space reentry?

- A. Changes in body temperature
- B. Alterations in visual acuity
- C. Physiological responses to gravity**
- D. Cholesterol levels in blood

Monitoring physiological responses to gravity during space reentry is crucial due to the significant changes experienced in the body's physical state. As a spacecraft reenters the Earth's atmosphere, it experiences a rapid increase in gravitational forces, which can lead to various physiological challenges, including the effects of increased g-forces on the body. These changes can impact blood circulation, equilibrium, and the overall physical condition of the astronauts. Understanding how the body reacts to these changes is vital for ensuring the safety and effectiveness of the reentry process. Proper monitoring can help anticipate and mitigate any potential health risks, such as g-induced loss of consciousness or other physiological disturbances. While other responses like changes in body temperature, alterations in visual acuity, and cholesterol levels are important in different contexts, they are not as critical to monitor specifically during the high-stress phase of space reentry. The primary concern during this time is how the body adapts to the increased gravitational forces, making it the most relevant aspect to focus on in this situation.

7. Which of the following may occur as a psychological response to hypoxia?

- A. Improved judgement
- B. Euphoria**
- C. Increased paranoia
- D. Heightened focus

Euphoria is a common psychological response to hypoxia, particularly in environments with reduced oxygen levels. This sensation can occur due to increased feelings of wellbeing or pleasure that are often the result of the brain's altered biochemical state under hypoxic conditions. The lower availability of oxygen can disrupt normal brain function and neurotransmitter systems, leading to this euphoric state. Although it may temporarily enhance mood, it can also mask the more serious impairments that hypoxia can cause, leading to dangerous situations in aviation. In the context of the other options, improved judgment, increased paranoia, or heightened focus are typically not associated with hypoxia. Instead, hypoxia usually leads to cognitive deficits, impaired judgment, and diminished focus, which are critical to acknowledge for safety in aviation. Thus, recognizing euphoria as a potential psychological response highlights the paradox of experiencing a false sense of security despite the detrimental effects of hypoxia on overall cognitive function.

8. What part of the vestibular system is responsible for measuring angular acceleration?

- A. Otolith Organs
- B. Semicircular Canals**
- C. Vestibular Nerve
- D. Cochlea

The semicircular canals are responsible for measuring angular acceleration in the vestibular system. These three fluid-filled structures are oriented in different planes and work together to detect rotational movements of the head. When the head moves, the fluid within the canals shifts, causing the hair cells located in the ampullae of each canal to bend. This bending generates signals that are sent to the brain, providing information about the direction and speed of head rotations. The otolith organs, while also part of the vestibular system, primarily detect linear acceleration and gravitational forces rather than angular acceleration. The vestibular nerve transmits the sensory information from the semicircular canals and otolith organs to the brain, but it does not measure acceleration itself. The cochlea, meanwhile, is part of the auditory system and focuses on the detection of sound rather than balance or motion. Hence, the semicircular canals are uniquely designed to sense changes in angular position, making them crucial for maintaining balance and spatial orientation during rotational movements.

9. What process helps maintain the pH balance of blood?

- A. Gas Exchange**
- B. Nutrient Distribution
- C. Muscle Coordination
- D. Digestive Regulation

The correct answer is that gas exchange plays a crucial role in maintaining the pH balance of blood. This process involves the exchange of carbon dioxide and oxygen in the lungs and tissues. When carbon dioxide is produced as a waste product from metabolism, it can influence blood pH. The body regulates the levels of carbon dioxide, which interacts with water to form carbonic acid, thereby affecting acidity in the blood. Increased levels of carbon dioxide can lower pH, while removal through gas exchange can help elevate pH and restore balance. While nutrient distribution, muscle coordination, and digestive regulation are essential physiological processes, they do not directly impact blood pH in the same way. Nutrient distribution supports energy and metabolic needs, muscle coordination aids in movements and functions, and digestive regulation manages processes related to food intake and breakdown. However, the carbon dioxide removal mechanism through gas exchange is specifically critical for maintaining the acid-base balance in the blood, highlighting its importance in respiratory and metabolic homeostasis.

10. At what pressure are low pressure oxygen systems usually pressurized?

- A. 200-250 psi
- B. 400-450 psi**
- C. 1800-2000 psi
- D. 600-700 psi

Low pressure oxygen systems are typically designed to operate within a pressure range of 400 to 450 psi. This level of pressure is sufficient to ensure that the oxygen can be easily delivered to the users without the danger of excessive pressure that could lead to leaks or system failures. The chosen pressure range is important for the safe use and functionality of the oxygen systems in aviation, where consistent and reliable oxygen supply is critical for pilot and crew safety, especially in altitude-related scenarios. By maintaining a pressure within this range, systems can effectively manage the oxygen required for physiological needs while staying within safe operating limits. More extreme pressure ranges, such as those exceeding 600 psi or falling well below 200 psi, may not provide the same safety and efficiency in oxygen distribution. Systems that are designed to operate at significantly higher pressures (like 1800-2000 psi) would be categorized as high-pressure systems and would require different handling and design considerations compared to low-pressure systems.

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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:

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

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