Arizona State University (ASU) BIO202 Human Anatomy and Physiology II Exam 2 Practice Exam (Sample)

Study Guide

Everything you need from our exam experts!

Table of Contents

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

1. What does the term "orthopnea" indicate?

A. Difficulty breathing while exercising

B. Shortness of breath while lying down

C. Labored breathing during exertion

D. Shortness of breath that occurs suddenly

2. Which receptors primarily monitor the pH of cerebrospinal fluid?

A. Peripheral chemoreceptors

B. Surface receptors

C. Central chemoreceptors

D. Baroreceptors

3. Which of the following can lead to an increase in resistance during breathing?

A. Bronchodilation of airways

B. Increased bronchiolar diameter

C. Decrease in bronchiolar diameter

D. Increased airflow rate

4. The flow of fluid or air is inversely proportional to which factor?

A. Pressure

B. Resistance

C. Temperature

D. Humidity

5. What aids in the inflation of the lungs by warming the inhaled air?

A. Humidity

B. Oxygen

C. Warming

D. Pressure

6. What is the primary function of the epiglottis?

A. Produces sound

B. Prevents food from entering the trachea

C. Supports vocal cords

D. Connects larynx to trachea

7. What is the term for sputum that contains mucus and cellular debris, making it an ideal growth medium for bacteria?

A. Sputum

B. Pleurisy

C. Bronchorrhea

D. Phlegm

8. Which of the following is one of the early signs of lung cancer?

A. Chronic wheezing

B. Coughing up blood

C. Chest pain

D. Shortness of breath

9. How does a decrease in intrapulmonary pressure affect airflow during inspiration?

A. Reduces airflow

B. Increases airflow

C. No effect on airflow

D. Creates turbulence

10. What is the ventilated portion of the lung supplied by one bronchiole called?

A. Pulmonary lobule

B. Bronchopulmonary segment

C. Alveolar duct

D. Respiratory zone

Answers

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

Explanations

1. What does the term "orthopnea" indicate?

A. Difficulty breathing while exercising

B. Shortness of breath while lying down

C. Labored breathing during exertion

D. Shortness of breath that occurs suddenly

The term "orthopnea" specifically refers to shortness of breath that occurs when a person is lying down and is relieved when they sit or stand up. This condition is generally associated with various heart and respiratory conditions, where lying flat increases venous return to the heart, potentially leading to pulmonary congestion and difficulty breathing. It is especially common in cases of heart failure or certain lung diseases. Understanding orthopnea is important as it indicates the severity of a patient's condition and helps healthcare providers determine appropriate treatment strategies. Recognizing the physical position that alleviates breathing difficulties can provide insights into underlying health issues, guiding further evaluation and management.

2. Which receptors primarily monitor the pH of cerebrospinal fluid?

A. Peripheral chemoreceptors

B. Surface receptors

C. Central chemoreceptors

D. Baroreceptors

Central chemoreceptors play a critical role in monitoring the pH of cerebrospinal fluid (CSF) because they are sensitive to changes in carbon dioxide (CO_2) levels, which in turn affect the acidity of the CSF. When CO_2 levels rise due to metabolic processes or respiratory issues, it diffuses into the CSF and reacts with water to form carbonic acid, leading to a decrease in pH. The central chemoreceptors, located in the medulla oblongata, detect these changes in pH and stimulate adjustments in respiratory rate and depth to restore homeostasis by increasing the exhalation of CO_2. This process is crucial for maintaining proper acidic balance in the brain's environment, as significant deviations can impair neuronal function. Peripheral chemoreceptors, while also involved in monitoring blood gases and pH, primarily respond to changes in arterial blood rather than directly to the CSF. Surface receptors and baroreceptors serve different functions unrelated to the direct monitoring of cerebrospinal fluid pH, with surface receptors being more related to sensory functions and baroreceptors focused on blood pressure regulation.

3. Which of the following can lead to an increase in resistance during breathing?

A. Bronchodilation of airways

B. Increased bronchiolar diameter

C. Decrease in bronchiolar diameter

D. Increased airflow rate

An increase in resistance during breathing is primarily associated with a decrease in the diameter of the bronchioles. When the bronchiolar diameter is reduced, the airways become narrower, which significantly impedes airflow. This can occur due to various factors, such as bronchoconstriction, inflammation, or the presence of mucus. When the diameter is lessened, the resistance to airflow increases, making it more difficult for air to pass through. In contrast, bronchodilation, which refers to the widening of the airways, would lower resistance and facilitate easier airflow. Similarly, an increased bronchiolar diameter also decreases resistance, allowing for better airflow. Furthermore, an increase in airflow rate typically relates to greater ease of breathing and would not contribute to resistance; rather, it might be regarded as an indicator of lower resistance under normal physiological conditions. Thus, the correct response highlights the physiological relationship between airway diameter and resistance in the respiratory system.

4. The flow of fluid or air is inversely proportional to which factor?

A. Pressure

B. Resistance

C. Temperature

D. Humidity

The relationship between the flow of fluid or air and resistance is fundamental in understanding fluid dynamics and respiratory physiology. According to the principles of fluid flow, specifically Poiseuille's law, the flow rate of a fluid through a tube or the flow of air through the respiratory system is inversely proportional to the resistance encountered by that flow. This means that as resistance increases—due to factors like narrowing of airways or increased viscosity—flow decreases. Conversely, if resistance decreases (for example, through bronchodilation in the lungs), flow increases. This principle emphasizes the importance of maintaining low resistance for optimal airflow and fluid transport in various biological systems, including circulation and respiration. In the context of the other options, pressure influences flow but does not have an inverse relationship; higher pressure typically increases flow rates. Temperature affects the properties of gases and fluids but does not establish an inverse relation with flow. Humidity influences air density and viscosity, but it is not directly characterized by an inverse relationship with flow either.

5. What aids in the inflation of the lungs by warming the inhaled air?

A. Humidity

B. Oxygen

C. Warming

D. Pressure

The process of warming inhaled air is crucial for effective lung inflation and overall respiratory function. When air enters the respiratory tract, it typically carries a lower temperature than that of the body. The respiratory epithelium assists in warming this inhaled air before it reaches the delicate tissues of the lungs. This warming helps ensure that the air is at an optimal temperature for gas exchange processes and prevents damage to lung tissues. Warmed air also contributes to maintaining proper humidity levels in the respiratory system. Adequate humidity is essential because it helps keep the mucosal surfaces moist, which is important for effective mucociliary clearance and the protection of the airways. Therefore, while humidity plays a significant role in the respiratory system, it is the warming process itself that specifically aids in the inflation of the lungs by adjusting the temperature of the inhaled air, making C the most relevant choice in this case.

6. What is the primary function of the epiglottis?

A. Produces sound

B. Prevents food from entering the trachea

C. Supports vocal cords

D. Connects larynx to trachea

The primary function of the epiglottis is to prevent food and liquid from entering the trachea during swallowing. This small flap of cartilage, located at the base of the tongue, acts as a gate that closes off the trachea when swallowing occurs. It ensures that food is directed into the esophagus, which leads to the stomach, rather than into the airway, which would lead to choking or respiratory complications. This protective mechanism is crucial for efficient and safe swallowing, allowing the digestive system to function properly while also safeguarding the respiratory system. Other options may refer to different components of the respiratory and digestive systems, but they do not accurately describe the specific role of the epiglottis, which is primarily focused on preventing aspiration during the act of swallowing.

7. What is the term for sputum that contains mucus and cellular debris, making it an ideal growth medium for bacteria?

A. Sputum

B. Pleurisy

C. Bronchorrhea

D. Phlegm

Sputum is the term used to describe the mixture of mucus and cellular debris that is coughed up from the respiratory tract. It is often produced in response to infections or irritants and contains a variety of substances that can support bacterial growth. Because of its viscous nature and the presence of inflammatory cells, sputum provides an environment where bacteria can thrive, leading to potential respiratory infections. While phlegm is also a term related to mucus, it generally refers to the mucus specifically produced by the respiratory system during illness and can often be used interchangeably with sputum. However, sputum is the more precise medical term that emphasizes both the mucus and debris aspect in terms of its implications for bacterial growth. Pleurisy refers to inflammation of the pleura and does not directly relate to sputum production. Bronchorrhea describes the excessive discharge of mucus from the bronchi but does not specifically highlight the contents suited for bacterial growth. Thus, the correct choice emphasizes the nature of sputum as an ideal medium for bacteria due to its composition.

8. Which of the following is one of the early signs of lung cancer?

A. Chronic wheezing

B. Coughing up blood

C. Chest pain

D. Shortness of breath

Coughing up blood, also known as hemoptysis, is recognized as one of the early signs of lung cancer. This symptom can occur due to tumor growth or irritation within the lungs, causing damage to blood vessels and leading to the presence of blood in the sputum. It is an important symptom to monitor, as early detection can significantly impact treatment outcomes. While chronic wheezing, chest pain, and shortness of breath can also be associated with lung cancer or other respiratory diseases, they may not present as early in the disease process compared to hemoptysis. Coughing up blood tends to be a more specific indicator pointing towards possible malignancy and warrants immediate medical evaluation.

9. How does a decrease in intrapulmonary pressure affect airflow during inspiration?

A. Reduces airflow

B. Increases airflow

C. No effect on airflow

D. Creates turbulence

During inspiration, the mechanics of breathing involve changes in intrapulmonary pressure, which is the pressure within the thoracic cavity and lungs. When the diaphragm and intercostal muscles contract, the volume of the thoracic cavity increases. This increase in volume causes a decrease in intrapulmonary pressure relative to atmospheric pressure. The principle of air movement is governed by pressure gradients: air flows from areas of higher pressure to areas of lower pressure. When intrapulmonary pressure drops below atmospheric pressure, a pressure gradient is established that drives air into the lungs. Thus, the decrease in intrapulmonary pressure directly facilitates the inflow of air, leading to increased airflow into the lungs during the process of inspiration. This relationship is central to understanding respiratory physiology, as it illustrates how mechanical changes within the thoracic cavity influence the movement of air and thereby support the process of gas exchange necessary for respiration.

10. What is the ventilated portion of the lung supplied by one bronchiole called?

A. Pulmonary lobule

B. Bronchopulmonary segment

C. Alveolar duct

D. Respiratory zone

The ventilated portion of the lung supplied by one bronchiole is referred to as a pulmonary lobule. This structure is defined as the anatomical unit of the lung that is ventilated by a single terminal bronchiole, which branches into respiratory bronchioles and leads to the alveoli where gas exchange occurs. Understanding the significance of the pulmonary lobule involves recognizing its role in the overall organization of the lung. It serves as a functional subdivision, enabling efficient airflow and gas exchange within that specific region. Each lobule is surrounded by connective tissue that helps to maintain its structure while enabling the necessary expansion and contraction during breathing. In contrast, other options refer to different anatomical or functional structures within the respiratory system. The bronchopulmonary segment refers to a larger subdivision of the lung that contains multiple lobules and is supplied by a specific tertiary bronchus. Alveolar ducts are passageways leading directly into the alveolar sacs, where the gas exchange occurs, and the respiratory zone encompasses the regions of the lung involved in gas exchange, including respiratory bronchioles, alveolar ducts, and alveoli.

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://asu-bio202exam2.examzify.com

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