NBEO General Physiology Practice Exam (Sample)

Study Guide

Everything you need from our exam experts!

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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. Don't worry about getting everything right, 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, and take breaks to retain information better.

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.

7. Use Other Tools

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 an increase in lung compliance indicate?

A. Stiff lungs

B. Improved airflow

C. Decreased elasticity

D. Healthy lung function

2. Which hormone stimulates the gallbladder to release bile?

A. Insulin

B. Glucagon

C. Cholecystokinin (CCK)

D. Gastrin

3. Is the trachea part of the conducting zone or respiratory zone of the lung?

A. Conducting zone

B. Respiratory zone

C. Neither zone

D. Both zones

4. Which complex on an EKG represents a single cycle of systole?

A. P wave

B. QRS wave

C. QT wave

D. T wave

5. Digitalis is a medication that increases stroke volume by increasing intracellular _____.

A. K+

B. Ca2+

C. Na+

D. Cl-

6. Which gastric pit cell primarily secretes pepsinogen?

- **A. Neck cells**
- **B. Parietal cells**
- **C. Chief cells**
- **D. G cells**

7. Which enzyme is produced in the lungs as part of the Renin-angiotensin-aldosterone system?

- **A. Angiotensinogen**
- **B. Angiotensin Converting Enzyme (ACE)**
- **C. Renin**
- **D. Aldosterone**

8. In terms of lung capacity, what does the term 'TLC' stand for?

- **A. Total Lung Capacity**
- **B. Total Living Capacity**
- **C. Total Lung Cooperative**
- **D. Total Lymph Capacity**

9. What effect does calcitonin have on blood calcium levels?

- **A. Increases**
- **B. Decreases**
- **C. No effect**
- **D. Regulates**

10. Which lung is larger in size?

- **A. Left lung**
- **B. Right lung**
- **C. Both are the same size**
- **D. Size varies by individual**

Answers

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

Explanations

1. What does an increase in lung compliance indicate?

A. Stiff lungs

B. Improved airflow

C. Decreased elasticity

D. Healthy lung function

An increase in lung compliance indicates that the lungs have become more distensible and can expand more easily during inhalation. Compliance is a measure of the lungs' ability to stretch and expand; higher compliance means that less pressure is required to achieve a given volume of air in the lungs. The correct answer, associated with decreased elasticity, helps to explain this phenomenon. When compliance increases, it is often accompanied by a reduction in the elastic recoil of the lung tissue. This means that the lungs can inflate easily but may not return to their original size as effectively, which is characteristic of conditions like emphysema where the elastic fibers are damaged. Improved airflow may suggest certain positive conditions, but increased compliance specifically refers to the ability of the lungs to stretch, not necessitating a direct correlation with airflow efficiency. Similarly, while healthy lung function is typically indicated by normal compliance values, an increase beyond the normal range can indicate an underlying pathological state. Stiff lungs, on the other hand, represent low compliance, thus contradicting the concept of increased compliance.

2. Which hormone stimulates the gallbladder to release bile?

A. Insulin

B. Glucagon

C. Cholecystokinin (CCK)

D. Gastrin

Cholecystokinin (CCK) is the hormone responsible for stimulating the gallbladder to release bile. When food, especially fatty acids and amino acids, enters the small intestine, the cells of the intestinal wall release CCK into the bloodstream. CCK has several important physiological functions, one of which is to promote the contraction of the gallbladder. This contraction results in the release of stored bile into the duodenum, which is essential for emulsifying fats and aiding in digestion. CCK also has other roles, such as stimulating the secretion of pancreatic enzymes and slowing down gastric emptying to ensure that digestion occurs efficiently. The targeted action of CCK on the gallbladder demonstrates its crucial role in coordinating digestive processes in response to the presence of nutrients in the intestine. This highlights the intricate hormonal regulation involved in digestion and metabolism.

3. Is the trachea part of the conducting zone or respiratory zone of the lung?

A. Conducting zone

B. Respiratory zone

C. Neither zone

D. Both zones

The trachea is classified as part of the conducting zone of the respiratory system. The conducting zone includes structures that transport air to the sites of gas exchange, which are the alveoli in the respiratory zone. The primary purpose of the trachea and the other components of the conducting zone, such as the nasal passages, pharynx, larynx, bronchi, and bronchioles, is to filter, warm, and humidify the incoming air before it reaches the delicate tissues of the lungs. The respiratory zone, on the other hand, consists of the structures involved in the actual exchange of gases, including the respiratory bronchioles, alveolar ducts, and alveoli. These areas have the thin walls necessary for efficient diffusion of oxygen and carbon dioxide between the air and the blood. Because the trachea does not participate in gas exchange but is solely involved in directing air into the lungs, it is firmly placed within the conducting zone. Knowing this distinction is essential for understanding how the respiratory system functions to ensure that air is properly prepared for the gas exchange process.

4. Which complex on an EKG represents a single cycle of systole?

A. P wave

B. QRS wave

C. QT wave

D. T wave

A single cycle of systole is represented by the QT interval on an EKG. The QT interval measures the time from the beginning of ventricular depolarization, indicated by the start of the QRS complex, to the end of ventricular repolarization, marked by the end of the T wave. This interval encompasses both the electrical activation of the ventricles (systole) and their recovery (diastole). Understanding why the QT interval represents this entire cycle is important. During the QT interval, the heart is completing the process of contraction (systole) followed by relaxation (diastole). This is a critical phase in the cardiac cycle, as it is during this time that the ventricles actively pump blood to the lungs and the rest of the body. The other components of the EKG, such as the P wave, QRS complex, and T wave, represent different phases of the cardiac cycle. The P wave indicates atrial depolarization, while the QRS complex corresponds specifically to ventricular depolarization. The T wave represents ventricular repolarization. None of these components capture the entire cycle of systole and diastole as effectively as the QT interval does, making it the correct choice in this context.

5. Digitalis is a medication that increases stroke volume by increasing intracellular _____.

A. K+

B. Ca2+

C. Na+

D. Cl-

Digitalis, also known as digoxin, primarily works by increasing the intracellular concentration of calcium ions (Ca2+). This increase in intracellular calcium leads to enhanced contractility of the cardiac muscle, which results in an increased stroke volume. The mechanism involves inhibition of the Na+/K+ ATPase pump in the cardiac cell membrane. When this pump is inhibited, there is a subsequent increase in intracellular sodium (Na+). The elevated sodium levels then influence the sodium-calcium exchange mechanism, leading to an influx of calcium into the cells. This increase in calcium available for myocardial contraction directly enhances the force of the heart's contractions, thus increasing stroke volume. It is essential to understand that while sodium plays a role in the mechanism, it is primarily the elevation of calcium levels that directly leads to improved cardiac contractility. Therefore, the correct answer focuses on calcium as the critical intracellular ion that affects stroke volume in the context of digitalis action.

6. Which gastric pit cell primarily secretes pepsinogen?

A. Neck cells

B. Parietal cells

C. Chief cells

D. G cells

The cell that primarily secretes pepsinogen in the gastric pits is the chief cell. Chief cells, found in the gastric glands of the stomach, are specialized for the production and secretion of digestive enzymes, particularly pepsinogen, which is an inactive precursor of the enzyme pepsin. Pepsinogen is secreted into the gastric lumen where it gets converted into the active form pepsin in the presence of hydrochloric acid, secreted by parietal cells. This activity is crucial for digestion, especially of proteins, as pepsin begins the process of breaking down protein structures into smaller peptides. Other cells in the gastric pits serve different functions: neck cells primarily secrete mucus to protect the gastric epithelium, parietal cells are responsible for secreting hydrochloric acid and intrinsic factor, and G cells produce the hormone gastrin, which stimulates gastric acid secretion and gastric motility. Understanding the specific functions of these cell types helps connect their activities to the overall process of digestion in the stomach.

7. Which enzyme is produced in the lungs as part of the Renin-angiotensin-aldosterone system?

A. Angiotensinogen

B. Angiotensin Converting Enzyme (ACE)

C. Renin

D. Aldosterone

The enzyme produced in the lungs as part of the Renin-angiotensin-aldosterone system is Angiotensin Converting Enzyme (ACE). ACE is crucial for the conversion of angiotensin I, which is an inactive precursor, into angiotensin II, a potent vasoconstrictor that plays a significant role in increasing blood pressure and stimulating the release of aldosterone from the adrenal glands. This system is vital for regulating blood pressure and fluid balance in the body. While angiotensinogen is produced by the liver and renin is released by the kidneys, it is ACE in the lungs that facilitates the conversion necessary for the system to exert its effects. Aldosterone itself is a hormone that gets released as a result of this cascade but is not produced in the lungs; rather, it acts on the kidneys to promote sodium and water retention. Understanding the role of ACE helps clarify the process and the importance of lung function in regulating cardiovascular dynamics.

8. In terms of lung capacity, what does the term 'TLC' stand for?

A. Total Lung Capacity

B. Total Living Capacity

C. Total Lung Cooperative

D. Total Lymph Capacity

The term 'TLC' in the context of lung capacity refers to Total Lung Capacity. This is a critical pulmonary measurement that represents the maximum amount of air that the lungs can hold when filled to capacity. Total Lung Capacity is made up of several components, including the tidal volume (the amount of air inhaled or exhaled in a normal breath), the inspiratory reserve volume (additional air that can be inhaled after a normal inhalation), the expiratory reserve volume (air that can be forcibly exhaled after a normal exhalation), and the residual volume (the air remaining in the lungs after a maximal exhalation). Understanding TLC is essential for assessing lung health, diagnosing respiratory conditions, and evaluating a patient's respiratory status. This concept is fundamental in both clinical and educational settings, emphasizing the importance of lung function in overall health.

9. What effect does calcitonin have on blood calcium levels?

A. Increases

B. Decreases

C. No effect

D. Regulates

Calcitonin is a hormone produced by the parafollicular cells (C cells) of the thyroid gland, and its primary role is to help regulate calcium levels in the blood. When blood calcium levels are elevated, calcitonin is released in response. This hormone acts to decrease blood calcium levels through several mechanisms. Firstly, calcitonin inhibits osteoclast activity in the bones, which are the cells responsible for breaking down bone tissue and releasing calcium into the bloodstream. By inhibiting osteoclasts, calcitonin reduces the amount of calcium being released from the bone, thus promoting a decrease in blood calcium levels. Secondly, calcitonin also promotes renal excretion of calcium. It increases the amount of calcium excreted by the kidneys, which further contributes to lowering blood calcium levels. By combining these actions — suppressing the release of calcium from bone and promoting its excretion by the kidneys — calcitonin effectively reduces overall blood calcium concentrations, confirming that its primary effect is to decrease blood calcium levels.

10. Which lung is larger in size?

A. Left lung

B. Right lung

C. Both are the same size

D. Size varies by individual

The right lung is larger than the left lung due to anatomical considerations. This difference can be attributed to the presence of the heart, which is located slightly to the left side of the thoracic cavity. To accommodate the heart, the left lung is not only smaller in volume but also has a notch (the cardiac notch) on its surface. The right lung consists of three lobes—superior, middle, and inferior—while the left lung has only two lobes—superior and inferior. This distinct lobular structure contributes to the overall larger size of the right lung when compared to the left. Individual variability in lung size can certainly exist, but the general anatomical structure remains consistent across the population with the right lung being larger.

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://nbeogenphysiology.examzify.com

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