

ANATOMY AND PHYSIOLOGY (ANAPHY) BATTERY PRACTICE EXAM (SAMPLE) STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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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 type of muscle tissue has voluntary control?**
 - A. Skeletal muscle
 - B. Cardiac muscle
 - C. Smooth muscle
 - D. Both cardiac and smooth muscle

- 2. Which of the following best describes a skeletal muscle?**
 - A. This muscle is striated and involuntary
 - B. This muscle is smooth and voluntary
 - C. This muscle is striated and voluntary
 - D. This muscle is non-striated and involuntary

- 3. What is the term for a severe infection of the bones, often caused by *Staphylococcus aureus*?**
 - A. Osteoporosis
 - B. Osteomyelitis
 - C. Arthritis
 - D. Osteosarcoma

- 4. What is the primary function of collagen in bones?**
 - A. Provides rigidity
 - B. Gives tensile strength
 - C. Stimulates growth
 - D. Regulates mineral content

- 5. What part of the neuron is responsible for receiving signals?**
 - A. Axon
 - B. Dendrites
 - C. Soma
 - D. Myelin sheath

- 6. Which of the following is NOT one of the four types of tissues in the human body?**
- A. Epithelial tissue
 - B. Neural tissue
 - C. Connective tissue
 - D. Cartilage tissue
- 7. What happens to a sarcomere during muscle contraction?**
- A. It contracts completely
 - B. It expands
 - C. It shortens
 - D. It remains unchanged
- 8. What phase of somatic cell division is characterized by DNA replication without cell division?**
- A. Prophase
 - B. Interphase
 - C. Anaphase
 - D. Metaphase
- 9. What are the tiny air sacs in the lungs where gas exchange occurs called?**
- A. Bronchi
 - B. Alveoli
 - C. Lobules
 - D. Pleurisy
- 10. Which hormone regulates blood sugar levels?**
- A. Glucagon
 - B. Insulin
 - C. Cortisol
 - D. Adrenaline

Answers

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

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Explanations

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1. Which type of muscle tissue has voluntary control?

- A. Skeletal muscle**
- B. Cardiac muscle
- C. Smooth muscle
- D. Both cardiac and smooth muscle

Skeletal muscle is the type of muscle tissue that is under voluntary control. This means that individuals can consciously control its contractions, allowing for movements such as walking, running, or lifting objects. The skeletal muscle fibers are striated in appearance and are typically attached to the bones of the skeleton, facilitating movement through coordinated contractions. In contrast, cardiac and smooth muscle tissues operate involuntarily. Cardiac muscle, found only in the heart, contracts rhythmically and autonomously to pump blood without conscious effort. Similarly, smooth muscle, which is located in the walls of hollow organs such as the intestines and blood vessels, is also involuntary, allowing for functions like peristalsis and regulating blood flow without the need for conscious control. Therefore, skeletal muscle is unique among the options for its ability to be controlled voluntarily.

2. Which of the following best describes a skeletal muscle?

- A. This muscle is striated and involuntary
- B. This muscle is smooth and voluntary
- C. This muscle is striated and voluntary**
- D. This muscle is non-striated and involuntary

Skeletal muscle is best described as being striated and voluntary. This type of muscle tissue is characterized by its distinct banding pattern, or striations, which are visible under a microscope. These striations are due to the orderly arrangement of myofilaments (actin and myosin) within the muscle fibers. Additionally, skeletal muscle is considered voluntary because it is under the conscious control of the nervous system. This allows an individual to consciously decide when to contract these muscles, enabling movements such as walking, running, and lifting. The ability to control this muscle type is fundamental for all voluntary movements of the body. In contrast, the other options describe muscle types that either lack striations, are involuntary, or do not fit the characteristics of skeletal muscle. For example, smooth muscle is non-striated and involuntary, and cardiac muscle, although striated, is also involuntary. Understanding these traits is crucial for distinguishing between the three types of muscle tissue in the human body.

3. What is the term for a severe infection of the bones, often caused by *Staphylococcus aureus*?

- A. Osteoporosis
- B. Osteomyelitis**
- C. Arthritis
- D. Osteosarcoma

*The term for a severe infection of the bones is osteomyelitis. This condition often arises due to bacteria, with *Staphylococcus aureus* being a common culprit. Osteomyelitis can occur when bacteria enter the bone tissue through various means, such as through the bloodstream, from nearby infections, or directly from open fractures. Osteomyelitis is characterized by inflammation of the bone and surrounding marrow, which can lead to tissue necrosis and complicated healing processes. Recognizing this condition is crucial because it usually requires antibiotics or even surgical intervention to resolve the infection effectively. Other options like osteoporosis refer to a decrease in bone density, which leads to an increased risk of fractures but is not an infection. Arthritis is inflammation of the joints and is not synonymous with bone infections. Osteosarcoma is a type of bone cancer and does not indicate an infectious process. Therefore, osteomyelitis is the correct term for a severe bone infection.*

4. What is the primary function of collagen in bones?

- A. Provides rigidity
- B. Gives tensile strength**
- C. Stimulates growth
- D. Regulates mineral content

Collagen plays a critical role in the structural integrity and function of bones, but its primary contribution is providing tensile strength. This is important because while bones need to be rigid to support the body and withstand compressive forces, there is also a significant need for flexibility and resistance to various types of stresses. Collagen fibers form a scaffold that not only helps maintain the shape of the bone but also allows it to absorb and distribute mechanical loads, preventing fractures. The interplay between collagen and hydroxyapatite, the mineral component of bone, is essential for optimal bone strength and durability. While collagen does not contribute directly to the rigidity of bones—instead, this is primarily the role of minerals—the presence of collagen in bone ensures that while they resist bending and breaking, they can still maintain some flexibility. This combination of properties enables bones to withstand various physical activities without easily breaking.

5. What part of the neuron is responsible for receiving signals?

- A. Axon
- B. Dendrites**
- C. Soma
- D. Myelin sheath

Dendrites are the part of the neuron that is primarily responsible for receiving signals from other neurons. They are branching extensions that increase the surface area available for synapses, allowing them to capture chemical signals released by neighboring neurons. When neurotransmitters bind to the receptors on the dendrites, they generate electrical signals that are transmitted to the soma (cell body) of the neuron. This structure is essential for communication within the nervous system, as it serves as the primary input region for the neuron. The electrical signals generated at the dendrites can then influence the activity of the neuron, guiding it to either fire or remain inactive based on the summation of incoming signals. This role is crucial for processing information and facilitating communication between different parts of the nervous system.

6. Which of the following is NOT one of the four types of tissues in the human body?

- A. Epithelial tissue
- B. Neural tissue
- C. Connective tissue
- D. Cartilage tissue**

The correct answer is that cartilage tissue is not considered one of the four primary types of tissues in the human body. The four main types of tissues are epithelial tissue, connective tissue, muscular tissue, and neural tissue. While cartilage is indeed a type of connective tissue, it is not classified as a distinct tissue type in itself. Instead, it falls under the broader umbrella of connective tissues, which also includes bone, blood, and adipose tissue. Understanding this classification is crucial in anatomy and physiology, as it helps to organize and differentiate the various functions and structures that make up the human body. Epithelial tissue serves as a protective layer covering the body's surfaces and lining cavities and organs. Neural tissue is responsible for transmitting impulses and facilitating communication within the body. Connective tissue provides support, binds other tissues together, and plays roles in insulation and transportation of substances. Recognizing the categories of tissue allows for a better understanding of how different structures function together within the body.

7. What happens to a sarcomere during muscle contraction?

- A. It contracts completely
- B. It expands
- C. It shortens**
- D. It remains unchanged

During muscle contraction, the sarcomere shortens. This is a fundamental feature of how muscle fibers generate force and movement. The sarcomere is the basic functional unit of muscle tissue, defined by the area between two Z lines. It contains filaments of myosin (thick filaments) and actin (thin filaments) that slide past one another during contraction. When a muscle receives a signal to contract, the myosin heads attach to binding sites on the actin filaments, forming cross-bridges. As these myosin heads pivot, they pull the actin filaments closer together toward the center of the sarcomere. This sliding action decreases the length of the sarcomere without changing the length of the individual filaments themselves. As the sarcomeres shorten throughout the entire muscle, the muscle contracts and generates tension. This process is known as the sliding filament theory of muscle contraction. Therefore, the correct answer highlights that the primary mechanical change occurring in a sarcomere during contraction is its shortening.

8. What phase of somatic cell division is characterized by DNA replication without cell division?

- A. Prophase
- B. Interphase**
- C. Anaphase
- D. Metaphase

The phase of somatic cell division characterized by DNA replication without cell division is interphase. During interphase, the cell prepares for division by undergoing several critical processes. The most notable of these is the S phase, where the DNA is replicated, resulting in two identical copies of each chromosome. This preparation is essential because it ensures that when the cell eventually divides, each daughter cell will receive an identical set of chromosomes. Interphase is divided into three main phases: G1 (the first gap phase), S (synthesis phase, where DNA replication occurs), and G2 (the second gap phase, where the cell prepares for mitosis). Unlike stages such as prophase, anaphase, and metaphase, which are all part of mitosis involving the actual division of the cell and its genetic material, interphase is primarily focused on the preparation and replication processes that occur before cell division begins. This is critical for maintaining genetic consistency and integrity in the resulting daughter cells.

9. What are the tiny air sacs in the lungs where gas exchange occurs called?

- A. Bronchi
- B. Alveoli**
- C. Lobules
- D. Pleurisy

The tiny air sacs in the lungs where gas exchange occurs are called alveoli. These structures play a crucial role in the respiratory system by facilitating the exchange of oxygen and carbon dioxide between the air we breathe and the bloodstream. Each alveolus is surrounded by a network of capillaries, allowing oxygen to diffuse into the blood and carbon dioxide to be expelled from the blood into the alveoli for exhalation. The design of alveoli, being small and numerous, greatly increases the surface area available for gas exchange, making the process efficient and effective. Their thin walls, comprised of a single layer of epithelial cells, further enhance this gas exchange due to the short diffusion distance for gases. In contrast, bronchi are the larger air passages that branch off from the trachea and lead to the lungs, lobules refer to subdivisions of the lungs that contain multiple alveoli, and pleurisy is an inflammation of the pleura, which are the membranes surrounding the lungs, but does not refer to any structure involved in gas exchange. Each of these options represents different aspects of lung anatomy and function but do not describe the primary sites of gas exchange themselves.

10. Which hormone regulates blood sugar levels?

- A. Glucagon
- B. Insulin**
- C. Cortisol
- D. Adrenaline

Insulin is a hormone produced by the beta cells of the pancreas and plays a crucial role in regulating blood sugar levels. When food is consumed, especially carbohydrates, glucose levels in the bloodstream rise. Insulin facilitates the uptake of glucose by cells throughout the body, allowing them to use it for energy. Additionally, insulin encourages the liver to store excess glucose in the form of glycogen, which can be converted back to glucose when blood sugar levels drop. This regulation is essential for maintaining homeostasis, preventing conditions such as hyperglycemia (high blood sugar) and hypoglycemia (low blood sugar). In contrast, the other hormones listed serve different functions. Glucagon, also produced by the pancreas but by alpha cells, increases blood sugar levels by stimulating the liver to convert glycogen back into glucose when blood sugar is low. Cortisol, a stress hormone, affects metabolism and can increase blood sugar levels as part of the stress response but is not primarily responsible for day-to-day regulation. Adrenaline (epinephrine) also raises blood sugar levels during stress or 'fight or flight' responses but does so temporarily rather than maintaining overall blood sugar balance.

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://anaphybattery.examzify.com>

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

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