Arizona State University (ASU) BIO201 Human Anatomy and Physiology I Exam 1 Practice (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 is the individual "building block" or unit that makes up a polymer?

A. Polymer

B. Monomer

C. Dimmer

D. Compound

2. Which type of fats are derived from cholesterol?

A. Sugars

B. Phospholipids

C. Triglycerides

D. Steroids

3. A reaction that breaks down a polymer into its monomers is known as what type of reaction?

A. Endothermic

B. Anabolic

C. Catabolic

D. Hydrolytic

4. What surrounds the heart in the thoracic cavity?

A. Peritoneum

B. Pericardium

C. Pleurae

D. Diaphragm

5. Which body system breaks down food into absorbable units that enter the blood and eliminates waste as feces?

A. Cardiovascular system

B. Digestive system

C. Respiratory system

D. Urinary system

6. What are isotopes that decay to more stable forms called?

A. Stable isotopes

B. Radioisotopes

C. Stable atoms

D. Electrons

7. During which process do cells form autophagosomes?

A. Endocytosis

B. Autophagy

C. Exocytosis

D. Apoptosis

8. What are the membranes within the abdominopelvic subdivision of the ventral cavity called?

A. Pleura

B. Peritoneum

C. Pericardium

D. Meninges

9. What helps the pH scale resist abrupt and large swings of change?

A. Acids

B. Bases

C. Buffers

D. Salts

10. What type of bond is formed by sharing two or more valence shell electrons between atoms?

A. Ionic bond

B. Covalent bond

C. Hydrogen bond

D. Metallic bond

Answers

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

Explanations

1. What is the individual "building block" or unit that makes up a polymer?

A. Polymer

B. Monomer

C. Dimmer

D. Compound

The individual "building block" or unit that makes up a polymer is referred to as a monomer. Polymers are large molecules composed of repeating structural units, known specifically as monomers. These monomers are connected through chemical bonds in a process called polymerization. Each type of polymer is made from different types of monomers, which dictate the properties and functions of the resulting polymer. For instance, proteins are polymers made from amino acids (the monomers), and nucleic acids (like DNA and RNA) are polymers formed from nucleotide monomers. Understanding the distinction between monomers and polymers is crucial in the study of biochemistry and biology because it relates directly to how complex biological structures are formed and function within living organisms.

2. Which type of fats are derived from cholesterol?

A. Sugars

B. Phospholipids

C. Triglycerides

D. Steroids

Cholesterol is a type of lipid that serves as a precursor for the synthesis of steroids. Steroids are a class of lipids characterized by a structure of four fused carbon rings, which are essential for various biological functions. Cholesterol itself is a steroid and plays a crucial role in the formation of steroid hormones, including sex hormones such as estrogen and testosterone, and corticosteroids produced by the adrenal glands. While phospholipids are also derived from lipids, they are primarily constructed from fatty acids and glycerol, not cholesterol. Triglycerides consist of glycerol and three fatty acids and do not originate from cholesterol. Similarly, sugars are carbohydrates and do not have a structural relationship with cholesterol. Thus, steroids directly arise from the metabolism of cholesterol, making this option the most accurate in the context of the question.

3. A reaction that breaks down a polymer into its monomers is known as what type of reaction?

A. Endothermic

B. Anabolic

C. Catabolic

D. Hydrolytic

A reaction that breaks down a polymer into its monomers is specifically referred to as a catabolic reaction. In biological terms, catabolic reactions involve the degradation of complex molecules into simpler ones, releasing energy in the process. This is crucial for metabolism because it allows for the recycling of building blocks and the release of energy, which can then be harnessed for cellular activities. Polymers are large molecules made up of repeating subunits (monomers), and catabolic reactions essentially reverse the process of anabolism, wherein monomers are combined to form polymers. By breaking down these larger structures, cells can obtain the necessary monomers for various biosynthetic processes or energy production. While hydrolytic reactions are often associated with catabolic processes since they involve the addition of water to break bonds, the term catabolic specifically refers to the larger category of reactions that lead to breakdown and energy release. This makes catabolic the correct choice for the type of reaction that breaks down a polymer.

4. What surrounds the heart in the thoracic cavity?

A. Peritoneum

B. Pericardium

C. Pleurae

D. Diaphragm

The pericardium is the double-walled sac that encases the heart within the thoracic cavity. It consists of two layers: the fibrous pericardium, which provides protection and limits the heart's movement, and the serous pericardium, which produces a fluid that lubricates the heart, reducing friction during heartbeats. This specialized structure allows the heart to function efficiently without damage from movement or external forces. In contrast, the peritoneum refers to the membrane that lines the abdominal cavity and covers abdominal organs, not the thoracic cavity. The pleurae are membranes that envelop the lungs and are involved in respiratory mechanics, while the diaphragm serves as the primary muscle of respiration and separates the thoracic cavity from the abdominal cavity. These other structures are important in their own contexts but do not surround the heart specifically like the pericardium does.

5. Which body system breaks down food into absorbable units that enter the blood and eliminates waste as feces?

A. Cardiovascular system

B. Digestive system

C. Respiratory system

D. Urinary system

The digestive system is responsible for breaking down food into absorbable units that the body can utilize for energy, growth, and cellular repair. It involves the mechanical and chemical processing of food, which begins in the mouth and continues through the stomach and intestines. Here, enzymes and acids further digest the food into smaller molecules, such as amino acids, sugars, and fatty acids, which are then absorbed into the bloodstream through the lining of the intestines. As food is processed, the digestive system also plays a key role in eliminating waste. Undigested material and leftover byproducts that the body cannot use are compacted into feces and excreted from the body. This elimination process is crucial for maintaining homeostasis and preventing the buildup of potentially harmful substances. The other systems listed do have important functions, but they do not perform the combined tasks of food breakdown, nutrient absorption, and waste elimination as effectively as the digestive system does. The cardiovascular system is essential for transporting nutrients and gases but does not handle digestion. The respiratory system is responsible for gas exchange, primarily oxygen and carbon dioxide, and does not process food. The urinary system is involved in filtering blood and eliminating waste products from metabolism through urine, but it does not play a role in the

6. What are isotopes that decay to more stable forms called?

A. Stable isotopes

B. Radioisotopes

C. Stable atoms

D. Electrons

Isotopes that decay to more stable forms are referred to as radioisotopes. This is because they are unstable or radioactive forms of an element that undergoes nuclear decay. During this decay process, they emit radiation and transform into more stable isotopes or elements. The term "radioisotope" specifically emphasizes the presence of this radioactivity and the transformation process involved, which can include alpha decay, beta decay, or gamma decay, eventually leading to a more stable configuration. In contrast, stable isotopes do not undergo such decay processes and do not emit radiation. Stable atoms refer to the entirety of atoms that maintain their stability without any changes, whereas electrons are subatomic particles that do not directly pertain to the decay process of isotopes. Thus, the focus on stability and nuclear decay characteristics defines radioisotopes as the correct answer.

7. During which process do cells form autophagosomes?

A. Endocytosis

B. Autophagy

C. Exocytosis

D. Apoptosis

The formation of autophagosomes is a key characteristic of the process known as autophagy. During autophagy, cells form these double-membraned vesicles, or autophagosomes, to encapsulate and degrade damaged cellular components or superfluous organelles. This process is critical for maintaining cellular health, providing energy under stress conditions, and contributing to cellular homeostasis. Autophagosomes then fuse with lysosomes where the enclosed materials are broken down and recycled. Other processes mentioned, such as endocytosis and exocytosis, involve the transport of materials into and out of the cell, respectively, but do not create autophagosomes as part of their mechanisms. Apoptosis, or programmed cell death, involves a different set of cellular processes aimed at eliminating cells in a controlled manner, rather than recycling intracellular components. Thus, autophagy is distinctly focused on self-eating and cellular maintenance through the action of autophagosomes.

8. What are the membranes within the abdominopelvic subdivision of the ventral cavity called?

A. Pleura

B. Peritoneum

C. Pericardium

D. Meninges

The membranes within the abdominopelvic subdivision of the ventral cavity are referred to as the peritoneum. The peritoneum is a serous membrane that lines the abdominal cavity and covers the organs within it. It plays a crucial role in providing a lubricated surface that allows for the movement of organs while also supporting them and serving as a conduit for blood vessels, lymphatics, and nerves. Understanding the distinction among the other membranes is important. The pleura refers specifically to the membranes surrounding the lungs; the pericardium encloses the heart; and the meninges are protective coverings of the brain and spinal cord. Each of these membranes serves specific functions in different body cavities, highlighting the specialized nature of anatomical structures in maintaining organ health and function.

9. What helps the pH scale resist abrupt and large swings of change?

A. Acids

B. Bases

C. Buffers

D. Salts

The pH scale is a measure of how acidic or basic a solution is, and it operates on a logarithmic scale from 0 to 14. Buffers are solutions that act to stabilize the pH of a system by neutralizing small amounts of added acid or base. They consist of a weak acid and its conjugate base or a weak base and its conjugate acid, allowing them to absorb excess hydrogen ions (H+) or hydroxide ions (OH-), preventing large swings in pH. This buffering action is crucial in biological systems, where enzymes and biochemical reactions often require a specific pH range to function optimally. For instance, human blood is maintained at a pH around 7.4, and buffers such as bicarbonate play a vital role in maintaining this balance. By resisting abrupt changes in pH, buffers help maintain homeostasis, which is essential for the health and functioning of living organisms.

10. What type of bond is formed by sharing two or more valence shell electrons between atoms?

A. Ionic bond

B. Covalent bond

C. Hydrogen bond

D. Metallic bond

The correct answer is covalent bond, as it specifically involves the sharing of two or more valence shell electrons between atoms to achieve stability. This type of bond typically occurs between nonmetal atoms, which have similar electronegativities. By sharing electrons, both atoms can fill their outer electron shells, leading to a more stable electronic configuration. Covalent bonds can form single, double, or even triple bonds depending on how many pairs of electrons are shared between the atoms. For example, in a double bond, two pairs of electrons are shared, further contributing to the stability of the molecules formed. This sharing establishes a strong connection that is essential for the formation of various biological molecules, including proteins and nucleic acids. In contrast, ionic bonds result from the transfer of electrons between atoms, leading to the formation of charged ions, while hydrogen bonds are weaker interactions that occur between molecules due to polar covalent bonds. Metallic bonds involve a delocalized sea of shared electrons among a lattice of metal atoms, which is distinct from the direct sharing characteristic of covalent bonds.

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-bio201exam1.examzify.com

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