ARIZONA STATE UNIVERSITY (ASU) BIO201 HUMAN ANATOMY AND PHYSIOLOGY I EXAM 1 PRACTICE (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

VISIT US ONLINE FOR THE FULL VERSION STUDY GUIDE

https://asu-bio201exam1.examzify.com

Copyright © 2026 by Examzify - A Kaluba Technologies Inc. product.

ALL RIGHTS RESERVED.

No part of this book may be reproduced or transferred in any form or by any means, graphic, electronic, or mechanical, including photocopying, recording, web distribution, taping, or by any information storage retrieval system, without the written permission of the author.

Notice: Examzify makes every reasonable effort to obtain accurate, complete, and timely information about this product from reliable sources.

SAMPLE

Table of Contents

Copyright 1

Table of Contents 2

Introduction 3

How to Use This Guide 4

Questions 5

Answers 8

Explanations 10

Next Steps 15

SAMPLE

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.

SAMPLE

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!

SAMPLE

Questions

SAMPLE

1. Which body plane cuts the body into right and left sides (does not have to be equal)?

A. Median (midsagittal) plane

B. Frontal (coronal) plane

C. Sagittal plane

D. Transverse plane

2. In which mitotic phase do the nuclear envelope and nucleoli disappear?

A. Anaphase

B. Prophase

C. Metaphase

D. Telophase

3. Monomers are added together for a dehydration synthesis reaction when what happens?

A. Water is added

B. Hydroxyl groups are formed

C. OH is removed from one monomer and H from another

D. Energy is released

4. Which molecule serves as the monomer for nucleic acids?

A. Amino acids

B. Nucleotides

C. Sugars

D. Fatty acids

5. What do you call the study of structures too small to be seen by the naked eye?

A. Histology

B. Microscopic anatomy

C. Gross anatomy

D. Pathology

SAMPLE

6. What is the study of internal structures as they relate to overlying skin known as?

A. Surface anatomy

B. Histology

C. Regional anatomy

D. Pathology

7. Which of the following best describes the role of buffers in biological systems?

A. Increase pH changes

B. Maintain stable pH levels

C. Act as acids only

D. Neutralize only basic solutions

8. Which type of anatomy focuses on just one system in the body?

A. Surface anatomy

B. Microscopic anatomy

C. System anatomy

D. Regional anatomy

9. How is translation terminated during protein synthesis?

A. By the formation of peptide bonds

B. By reaching a stop codon

C. By the addition of RNA nucleotides

D. Through the use of ribosomes

10. Where does translation occur in a cell?

A. Nucleus

B. Cytoplasm

C. Mitochondria

D. Endoplasmic reticulum

SAMPLE

Answers

SAMPLE

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

SAMPLE

Explanations

SAMPLE

1. Which body plane cuts the body into right and left sides (does not have to be equal)?

A. Median (midsagittal) plane

B. Frontal (coronal) plane

C. Sagittal plane

D. Transverse plane

The body plane that divides the body into right and left segments, regardless of whether these segments are equal, is indeed the sagittal plane. This plane runs vertically, parallel to the midline of the body, allowing for separation into two sides. The median or midsagittal plane is a specific type of sagittal plane that divides the body into equal right and left halves, but the general term "sagittal plane" encompasses any vertical cut that creates two sections on either side of the body, which does not necessarily need to be equal. Thus, the answer correctly reflects that the sagittal plane can refer to any division into right and left segments. Understanding these distinctions is crucial because they help in anatomical positioning and the communication of locations and directions in the body. The frontal (coronal) plane divides the body into anterior (front) and posterior (back) sections, while the transverse plane divides it into superior (upper) and inferior (lower) portions, neither of which addresses right and left division.

2. In which mitotic phase do the nuclear envelope and nucleoli disappear?

A. Anaphase

B. Prophase

C. Metaphase

D. Telophase

During prophase, the first stage of mitosis, significant changes occur that are critical for the cell's division process. One of the key events of prophase is the breakdown of the nuclear envelope, which encases the nucleus, and the disintegration of the nucleoli, the structures within the nucleus responsible for ribosome synthesis. This breakdown allows the spindle fibers, which are essential for separating the chromosomes later in mitosis, to access the chromosomes that are becoming visible as they condense. The loss of the nuclear envelope and nucleoli marks the transition into the prophase stage, setting the stage for chromosome alignment in the subsequent phase of mitosis. This is a crucial step that prepares the cell for the accurate distribution of genetic material into the two daughter cells.

3. Monomers are added together for a dehydration synthesis reaction when what happens?

A. Water is added

B. Hydroxyl groups are formed

C. OH is removed from one monomer and H from another

D. Energy is released

In a dehydration synthesis reaction, also known as a condensation reaction, two monomers are joined together to form a polymer, and during this process, a water molecule is removed. The correct understanding of this reaction involves the removal of specific functional groups: the hydroxyl group (OH) from one monomer and a hydrogen atom (H) from another monomer. This removal creates a covalent bond between the two monomers, effectively forming a larger molecule and releasing water as a byproduct. This process not only helps in forming larger biological macromolecules, such as proteins, carbohydrates, and nucleic acids but also highlights the importance of water removal in the synthesis of complex biological structures. The combination of removing OH and H contributes fundamentally to the creation of new covalent bonds, illustrating how basic building blocks are intricately connected through biochemical reactions.

SAMPLE

4. Which molecule serves as the monomer for nucleic acids?

A. Amino acids

B. Nucleotides

C. Sugars

D. Fatty acids

Nucleic acids, which include DNA and RNA, are polymers made up of repeating units known as monomers. The specific monomer for nucleic acids is nucleotides. Each nucleotide consists of three components: a phosphate group, a five-carbon sugar (either ribose or deoxyribose), and a nitrogenous base (which can be adenine, guanine, cytosine, thymine, or uracil). Nucleotides link together through phosphodiester bonds to form the long chains that make up nucleic acids. This structural framework is essential for the encoding, transmission, and expression of genetic information. Understanding that nucleotides are the building blocks is crucial for grasping how genetic material is synthesized and the role it plays in cellular processes.

5. What do you call the study of structures too small to be seen by the naked eye?

A. Histology

B. Microscopic anatomy

C. Gross anatomy

D. Pathology

The study of structures too small to be seen by the naked eye is referred to as microscopic anatomy. This branch of anatomy focuses on the examination of tissues and cells using a microscope, allowing for a detailed understanding of the organization and function of these small-scale structures. Histology, often used interchangeably with microscopic anatomy, specifically emphasizes the study of the microscopic structure of tissues. While both terms relate closely, microscopic anatomy can encompass a broader range of studies, including the cellular level. Gross anatomy, on the other hand, pertains to structures that can be observed without the aid of a microscope, such as organs and large body systems. Pathology is the study of disease and its effects on the body, which may involve changes at both microscopic and macroscopic levels. Hence, the term that best defines the study of structures that require magnification to be seen clearly is microscopic anatomy.

6. What is the study of internal structures as they relate to overlying skin known as?

A. Surface anatomy

B. Histology

C. Regional anatomy

D. Pathology

The study of internal structures as they relate to overlying skin is referred to as surface anatomy. This branch of anatomy focuses on the features and landmarks of the body that can be observed or palpated on the surface. It is essential for understanding how internal structures are positioned relative to the skin, which is especially useful in medical fields like physical examination and surgery. Surface anatomy helps in identifying the contours and positions of underlying structures, aiding healthcare professionals in diagnosis and treatment. The other options pertain to different fields of study; for instance, histology examines tissues at the microscopic level, regional anatomy focuses on specific areas of the body and their interconnected systems, and pathology investigates diseases and their effects on body structures.

SAMPLE

7. Which of the following best describes the role of buffers in biological systems?

A. Increase pH changes

B. Maintain stable pH levels

C. Act as acids only

D. Neutralize only basic solutions

Buffers play a crucial role in maintaining stable pH levels in biological systems, which is vital for the proper functioning of enzymes and overall cellular processes. They do this by absorbing excess hydrogen ions (H+) when the pH drops (becoming more acidic) and releasing hydrogen ions when the pH rises (becoming more basic). This ability to minimize fluctuations in pH allows biological systems to remain within a narrow pH range, which is essential for various biochemical reactions and processes that require a specific pH for optimal performance. In contrast, the other options do not accurately reflect the role of buffers. Increasing pH changes would be counterproductive, as it would lead to instability in pH levels that could disrupt physiological functions. Buffers do not act exclusively as acids, as they can be comprised of weak acids and their conjugate bases, allowing them to respond to changes in pH in both directions. Additionally, while buffers can neutralize both acids and bases, they are not limited to only neutralizing basic solutions; they also function to counteract acidic conditions, highlighting their comprehensive role in maintaining pH balance.

8. Which type of anatomy focuses on just one system in the body?

A. Surface anatomy

B. Microscopic anatomy

C. System anatomy

D. Regional anatomy

The type of anatomy that concentrates on a specific system within the body is known as system anatomy. This branch of anatomy systematically explores the various parts and functions of individual systems, such as the circulatory system, respiratory system, or nervous system. By focusing on one system at a time, it allows for a detailed understanding of how that particular system operates, including its structures, functions, and interactions with other systems. For example, in studying the muscular system, one would look at the different types of muscles, their locations, how they work together for movement, and their roles in overall physiology. This systematic approach is crucial for educational and clinical applications, enabling students and health professionals to understand the complexity and interrelated nature of bodily systems while facilitating a deeper comprehension of specific functions and pathologies.

9. How is translation terminated during protein synthesis?

A. By the formation of peptide bonds

B. By reaching a stop codon

C. By the addition of RNA nucleotides

D. Through the use of ribosomes

Translation is terminated during protein synthesis when the ribosome encounters a stop codon on the messenger RNA (mRNA). Stop codons are specific sequences of three nucleotides (UAA, UAG, UGA) that signal the end of the amino acid chain being synthesized. When the ribosome reads a stop codon, no corresponding transfer RNA (tRNA) exists to add more amino acids to the chain. Instead, release factors bind to the ribosome, prompting the release of the newly synthesized protein and disassembly of the ribosomal complex. This mechanism is crucial for ensuring that proteins are synthesized accurately and that their synthesis halts when a complete polypeptide chain has been formed.

SAMPLE

10. Where does translation occur in a cell?

A. Nucleus

B. Cytoplasm

C. Mitochondria

D. Endoplasmic reticulum

Translation is the process by which ribosomes synthesize proteins from messenger RNA (mRNA) templates. This occurs primarily in the cytoplasm of the cell, where the ribosomes are located. The mRNA, which has been transcribed from DNA in the nucleus, is transported out into the cytoplasm where it interacts with ribosomes. Ribosomes can be either free-floating in the cytosol or attached to the endoplasmic reticulum, but the entire process of translating mRNA into a polypeptide chain, forming proteins, occurs within the cytoplasm. While the endoplasmic reticulum plays a role in processing and packaging proteins, the actual translation of genetic information into amino acid sequences takes place in the cytoplasm. Additionally, the mitochondria have their own ribosomes and can carry out translation of mitochondrial genes specifically, but the majority of cellular translation occurs in the cytoplasm. Therefore, selecting the cytoplasm as the location for translation aligns with the established understanding of cellular biology.

SAMPLE

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!

SAMPLE