

AC-HPAT BIOLOGY PRACTICE EXAM (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

VISIT US ONLINE FOR
THE FULL VERSION STUDY GUIDE

<https://achpatbiology.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	16

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.

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

SAMPLE

- 1. What is the primary function of the pancreas in the human body?**
 - A. Producing digestive enzymes
 - B. Regulating blood glucose levels
 - C. Filtering blood in the renal system
 - D. Storing bile for fat digestion
- 2. During which phase of transcription does RNA polymerase bind to the promoter region?**
 - A. Elongation
 - B. Termination
 - C. Initiation
 - D. Processing
- 3. What is true about a recessive gene?**
 - A. It is always expressed in the phenotype
 - B. It requires two copies to be phenotypically expressed
 - C. It is stronger than a dominant gene
 - D. It is found only in male individuals
- 4. How does the trachea primarily assist in breathing?**
 - A. Filtering the blood
 - B. Connecting the heart to the lungs
 - C. Conducting air into the lungs
 - D. Regulating blood pressure
- 5. Which of the following statements is true about protein synthesis?**
 - A. It only occurs in the nucleus of the cell
 - B. It involves transcription and translation
 - C. It happens exclusively when the cell is dividing
 - D. It is not essential for cellular functions
- 6. What do capillaries allow to occur between blood and body tissues?**
 - A. Storage of blood
 - B. Exchange of oxygen, nutrients, and wastes
 - C. Filtration of bacteria
 - D. Production of hormones

7. What are erythrocytes commonly known as?

- A. White blood cells
- B. Platelets
- C. Red blood cells
- D. Plasma cells

8. Which statement is true about active transport?

- A. It is the same as passive transport
- B. It moves molecules from high concentration to low
- C. It requires energy from the cell
- D. It does not involve cell membranes

9. What best describes the function of alveoli in the lungs?

- A. Mix food with digestive enzymes
- B. Facilitate the exchange of oxygen and carbon dioxide
- C. Filter out impurities from the air
- D. Store bile for digestion

10. What is the relationship between DNA and proteins?

- A. DNA directly produces proteins
- B. DNA provides instructions for protein production
- C. Proteins replicate DNA
- D. Proteins enhance DNA structure

Answers

SAMPLE

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

SAMPLE

Explanations

SAMPLE

1. What is the primary function of the pancreas in the human body?

- A. Producing digestive enzymes
- B. Regulating blood glucose levels**
- C. Filtering blood in the renal system
- D. Storing bile for fat digestion

The primary function of the pancreas in the human body encompasses both the production of digestive enzymes and the regulation of blood glucose levels, but its primary role in the context of hormonal function is related to blood glucose regulation. The pancreas plays a critical role in the endocrine system by producing hormones such as insulin and glucagon. Insulin is released when blood glucose levels rise, such as after eating, facilitating the uptake of glucose by cells for energy or storage as glycogen in the liver and muscle tissue. Conversely, glucagon is secreted when blood glucose levels drop, prompting the liver to release stored glucose into the bloodstream, thus maintaining homeostasis. Therefore, while the pancreas also produces digestive enzymes that aid in the digestion of food in the gastrointestinal tract, its essential role in maintaining stable blood glucose levels is crucial for overall metabolic health. This function is particularly significant in the context of diabetes management, where the regulation of blood sugar is critically impaired.

2. During which phase of transcription does RNA polymerase bind to the promoter region?

- A. Elongation
- B. Termination
- C. Initiation**
- D. Processing

During the initiation phase of transcription, RNA polymerase binds to the promoter region of the DNA. This critical first step in the transcription process involves the enzyme locating the specific sequence of DNA called the promoter, which serves as the starting point for transcription. The binding of RNA polymerase to the promoter is essential as it determines where transcription will begin and helps to control which genes are expressed. After binding to the promoter, RNA polymerase unwinds the DNA and starts synthesizing RNA from the template strand, marking the transition into the elongation phase. Understanding this sequence of events is essential for grasping how genes are transcribed into messenger RNA (mRNA) prior to translation into proteins. The other phases mentioned, such as elongation, termination, and processing, occur after initiation and are not directly involved in the initial binding of polymerase to the DNA.

3. What is true about a recessive gene?

- A. It is always expressed in the phenotype
- B. It requires two copies to be phenotypically expressed**
- C. It is stronger than a dominant gene
- D. It is found only in male individuals

A recessive gene is characterized by the requirement of two copies, one from each parent, to manifest its trait in the organism's phenotype. This means that an individual must inherit the recessive allele from both parents for the associated trait to be expressed. If only one copy of the recessive gene is present, the dominant gene, if it exists, will mask the effect of the recessive gene, leading to the dominant trait being expressed instead. This concept highlights the nature of allele interaction in diploid organisms, where pairs of alleles (one from each parent) determine traits. A single recessive allele is insufficient for the phenotype to reflect the recessive trait, emphasizing the need for two copies for expression. Understanding this is crucial for grasping basic principles of inheritance, such as those outlined in Mendel's laws of inheritance. The other options either misrepresent the role of recessive genes or their characteristics in genetic inheritance.

4. How does the trachea primarily assist in breathing?

- A. Filtering the blood
- B. Connecting the heart to the lungs
- C. Conducting air into the lungs**
- D. Regulating blood pressure

The trachea, commonly known as the windpipe, plays a crucial role in the respiratory system by conducting air into the lungs. This tube-like structure is an essential passageway that allows inhaled air to travel from the larynx (voice box) to the bronchi, which then branch out into the lungs. The trachea is equipped with cilia and mucus that help trap foreign particles and pathogens, ensuring that cleaner air reaches the lungs for gas exchange. By facilitating the movement of air, the trachea ensures that oxygen can enter the lungs where it is absorbed into the bloodstream, while also allowing carbon dioxide, a waste product of cellular respiration, to be expelled from the body during exhalation. This function of conducting air is vital for maintaining the body's respiratory efficiency and overall metabolic health.

5. Which of the following statements is true about protein synthesis?

- A. It only occurs in the nucleus of the cell
- B. It involves transcription and translation**
- C. It happens exclusively when the cell is dividing
- D. It is not essential for cellular functions

Protein synthesis is a fundamental biological process essential for the growth and maintenance of cells. The correct answer indicates that protein synthesis involves two key processes: transcription and translation. During transcription, the DNA sequence of a gene is copied to produce messenger RNA (mRNA) in the nucleus. This mRNA then travels out of the nucleus and into the cytoplasm, where translation occurs. In translation, ribosomes read the mRNA sequence and synthesize a corresponding chain of amino acids, which fold into functional proteins. This two-step process is critical, as proteins play a vital role in virtually every cellular function, including enzymatic activity, signaling, structure, and transport. Without these proteins, cells would not be able to perform necessary functions or respond to their environment adequately. The other statements do not accurately reflect the nature of protein synthesis. While it starts in the nucleus, it does not occur exclusively there. Additionally, protein synthesis is a continuous process that happens regardless of whether the cell is in the process of division. Lastly, it is absolutely essential for cellular functions, and without it, cells cannot survive or thrive.

6. What do capillaries allow to occur between blood and body tissues?

- A. Storage of blood
- B. Exchange of oxygen, nutrients, and wastes**
- C. Filtration of bacteria
- D. Production of hormones

Capillaries are the smallest blood vessels and play a crucial role in the circulatory system, functioning as the primary site for the exchange of substances between the blood and surrounding tissues. Their walls are extremely thin, composed of a single layer of endothelial cells, which facilitates the diffusion of oxygen and carbon dioxide, as well as the transfer of nutrients and waste products. This thin structure allows oxygen and nutrients, which are vital for cell function, to move from the bloodstream into the tissues. Conversely, waste products like carbon dioxide and metabolic byproducts can easily leave the tissues and enter the bloodstream for removal. The capillary network's vast surface area maximizes the efficiency of these exchanges, making it essential for maintaining homeostasis and supporting cellular metabolism. The other choices pertain to different functions not associated with capillary activity. Blood storage primarily occurs in larger vessels and organs like the spleen. Filtration of bacteria is mainly carried out by the immune system via lymph nodes and specialized white blood cells, not capillaries. Hormone production is a function of endocrine glands, not a role of capillaries. Thus, the correct choice highlights the key role of capillaries in facilitating vital exchanges between the blood and body tissues.

7. What are erythrocytes commonly known as?

- A. White blood cells
- B. Platelets
- C. Red blood cells**
- D. Plasma cells

Erythrocytes are commonly known as red blood cells. This designation comes from their primary function and characteristic appearance; they are responsible for transporting oxygen from the lungs to the tissues and returning carbon dioxide from the tissues back to the lungs. The red color of these cells is due to the presence of hemoglobin, a protein that binds oxygen. In contrast, other options represent different components of the blood. White blood cells are involved in immune responses, platelets play a crucial role in blood clotting, and plasma cells are specialized white blood cells that produce antibodies. Understanding the distinct roles and characteristics of these cells is important in comprehending the overall function of the circulatory and immune systems.

8. Which statement is true about active transport?

- A. It is the same as passive transport
- B. It moves molecules from high concentration to low
- C. It requires energy from the cell**
- D. It does not involve cell membranes

Active transport is a process that moves molecules across a cell membrane against their concentration gradient, meaning from an area of low concentration to an area of high concentration. This movement requires energy because it is essentially working against the natural tendency of molecules to diffuse from areas of higher concentration to areas of lower concentration, which is characteristic of passive transport. The energy required for active transport typically comes from adenosine triphosphate (ATP), which provides the necessary power for transport proteins or pumps to function. This is in stark contrast to passive transport, where no energy is required, as it relies on the natural movement of molecules down their concentration gradients. In addition, active transport is inherently associated with cell membranes since it involves the specific transport proteins that span these membranes. Therefore, any statement suggesting that active transport does not involve cell membranes would be inaccurate. By understanding the nature of active transport and its energy requirements, one can appreciate its vital role in maintaining cellular homeostasis and nutrient uptake.

9. What best describes the function of alveoli in the lungs?

- A. Mix food with digestive enzymes
- B. Facilitate the exchange of oxygen and carbon dioxide**
- C. Filter out impurities from the air
- D. Store bile for digestion

The function of alveoli in the lungs is best described as facilitating the exchange of oxygen and carbon dioxide. Alveoli are tiny, balloon-like structures located at the ends of the respiratory bronchioles and are essential for the respiratory system's gas exchange process. Their walls are extremely thin and are surrounded by a network of capillaries, which allows for the efficient diffusion of oxygen into the blood and the removal of carbon dioxide from it. When we inhale, air enters the alveoli, where the oxygen in the air passes through the alveolar wall and enters the bloodstream, binding to hemoglobin in red blood cells. Simultaneously, carbon dioxide, which is a waste product produced by metabolism, moves from the blood into the alveoli to be exhaled. This process is vital for maintaining the body's acid-base balance and supplying tissues with the oxygen they need for cellular respiration. The other options refer to functions that do not take place in the lungs. Mixing food with digestive enzymes and storing bile pertain to digestive processes, while filtering impurities from the air is a job primarily done by the upper respiratory tract rather than the alveoli themselves.

10. What is the relationship between DNA and proteins?

- A. DNA directly produces proteins
- B. DNA provides instructions for protein production**
- C. Proteins replicate DNA
- D. Proteins enhance DNA structure

The relationship between DNA and proteins is fundamentally about the role DNA plays in the synthesis of proteins. DNA contains the genetic blueprint that houses the instructions for building proteins. This process involves two key stages: transcription and translation. In transcription, the information in a section of DNA (a gene) is copied into messenger RNA (mRNA). The mRNA then travels from the nucleus to the cytoplasm, where it directs the synthesis of proteins during translation. The ribosomes read the sequence of the mRNA and use it to assemble the corresponding amino acids into a polypeptide chain, which then folds into a functional protein. This highlights that DNA does not directly produce proteins; rather, it encodes the instructions necessary for ribosomes to create proteins based on the sequences of nucleotides. The other options misrepresent the relationship by suggesting direct action or reverse functionality, which does not align with the established understanding of molecular 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://achpatbiology.examzify.com>

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

SAMPLE