

ALGONQUIN COLLEGE HEALTH PROGRAM ASSESSMENT (AC- HPAT) PRACTICE EXAM (SAMPLE) STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

VISIT US ONLINE FOR
THE FULL VERSION STUDY GUIDE

<https://ac-hpat.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.

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. Where are the cell's chromosomes stored?**
 - A. Cytoplasm
 - B. Nucleus
 - C. Ribosomes
 - D. Endoplasmic reticulum
- 2. Which statement accurately describes the relationship between protons and electrons in a neutral atom?**
 - A. They are equal in number
 - B. Protons outnumber electrons
 - C. Electrons outnumber protons
 - D. They have a different impact on atomic mass
- 3. What does the mass number represent?**
 - A. The total number of protons and electrons
 - B. The sum of protons and neutrons in the nucleus
 - C. The average of all isotopes of an element
 - D. The total number of protons and electrons minus neutrons
- 4. Which transportation method requires energy input?**
 - A. Diffusion
 - B. Osmosis
 - C. Active Transport
 - D. Facilitated Diffusion
- 5. Which process describes the fusion of vesicles and release of their contents from the cell?**
 - A. Exocytosis
 - B. Endocytosis
 - C. Transcription
 - D. Translation

6. What is a haploid cell?

- A. A cell that contains two sets of chromosomes
- B. A cell that contains one set of chromosomes
- C. A cell that is in the process of dividing
- D. A cell that has no DNA

7. What type of blood is transported by the inferior vena cava?

- A. Oxygenated blood
- B. Deoxygenated blood
- C. Nutrient-rich blood
- D. Carbonated blood

8. An atom with an atomic number of 58 and an atomic mass of 118 has how many neutrons?

- A. 60
- B. 58
- C. 118
- D. 50

9. Which component plays a key role in maintaining blood pressure?

- A. Platelets
- B. Arteries
- C. Veins
- D. Capillaries

10. What does the left ventricle do?

- A. Pumps deoxygenated blood to the lungs
- B. Pumps oxygenated blood to the body
- C. Receives blood from the right atrium
- D. Filters blood for the heart

Answers

SAMPLE

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

SAMPLE

Explanations

SAMPLE

1. Where are the cell's chromosomes stored?

- A. Cytoplasm
- B. Nucleus**
- C. Ribosomes
- D. Endoplasmic reticulum

The chromosomes of a cell are stored in the nucleus, which serves as the control center of the cell. The nucleus is a membrane-bound organelle that contains the genetic material (DNA) organized into chromosomes. This arrangement allows for the protection of DNA and the regulation of gene expression, as well as facilitating processes such as replication and transcription. The nucleus is central to many cellular functions, providing a distinct environment where genetic information can be accessed and utilized efficiently. This structural organization is vital for cell division and the careful preservation of genetic information across generations. In contrast, other cellular components such as the cytoplasm, ribosomes, and endoplasmic reticulum have different functions related to metabolism, protein synthesis, and cellular transport, but they do not store chromosomes.

2. Which statement accurately describes the relationship between protons and electrons in a neutral atom?

- A. They are equal in number**
- B. Protons outnumber electrons
- C. Electrons outnumber protons
- D. They have a different impact on atomic mass

In a neutral atom, the number of protons equals the number of electrons. This balance is what defines the atomic charge; when protons (positively charged) and electrons (negatively charged) are present in equal amounts, their charges cancel each other out, resulting in no overall charge. This fundamental principle is essential for understanding atomic structure, as it maintains the stability of the atom and plays a crucial role in chemical interactions. The other statements address aspects that are not applicable to neutral atoms. For instance, in a neutral atom, protons cannot outnumber or be outnumbered by electrons, as that would result in a charged atom. The assertion about different impacts on atomic mass is also irrelevant in the context of a neutral atom since both protons and electrons contribute to the total mass of the atom, but in different proportions, with protons having a far greater mass than electrons. Thus, the accurate statement characterizing the relationship between protons and electrons in a neutral atom is their equality in number.

3. What does the mass number represent?

- A. The total number of protons and electrons
- B. The sum of protons and neutrons in the nucleus**
- C. The average of all isotopes of an element
- D. The total number of protons and electrons minus neutrons

The mass number is a significant concept in understanding atomic structure, specifically representing the total count of protons and neutrons within the atomic nucleus. Protons have a positive charge, while neutrons are neutral, and collectively they determine the mass of an atom, as electrons have negligible mass compared to protons and neutrons. By summing the number of protons (which defines the element and is equal to the atomic number) and neutrons, the mass number provides insight into the atomic mass of an isotope of an element. This is fundamental in various fields of science, including chemistry, physics, and biology, as it helps in identifying isotopes, understanding nuclear reactions, and predicting the behavior of elements in chemical reactions. Other options do not accurately describe the mass number. While one option mentions the total number of protons and electrons, it neglects neutrons entirely, which are crucial to determining the mass. Another option suggests calculating an average of isotopes, which relates more closely to atomic weight rather than mass number, and the last option incorrectly implies a subtraction that does not reflect the components contributing to mass. Thus, understanding that the mass number is the sum of protons and neutrons is essential for grasping atomic properties and behavior.

4. Which transportation method requires energy input?

- A. Diffusion
- B. Osmosis
- C. Active Transport**
- D. Facilitated Diffusion

Active transport is the transportation method that requires energy input. This process is essential for moving molecules against their concentration gradient, which means that substances are transported from an area of lower concentration to one of higher concentration. This is contrary to passive transport methods, such as diffusion and osmosis, which occur naturally and do not require additional energy. In active transport, energy is typically derived from ATP (adenosine triphosphate), which provides the necessary power for the transport proteins to function. These proteins often include pumps, like the sodium-potassium pump, that actively move ions in and out of cells, thereby maintaining essential concentrations needed for various cellular functions. In contrast, diffusion and osmosis are natural processes reliant on the kinetic energy of particles and do not require energy input. Facilitated diffusion also occurs along a concentration gradient but utilizes carrier proteins to help transport substances, which still does not require the expenditure of energy. Thus, active transport remains distinct due to its energy dependence, making it essential for processes that maintain homeostasis within cells.

5. Which process describes the fusion of vesicles and release of their contents from the cell?

- A. Exocytosis**
- B. Endocytosis
- C. Transcription
- D. Translation

The correct process that describes the fusion of vesicles and the release of their contents from the cell is exocytosis. This is a vital cellular activity primarily involved in transporting materials out of the cell. During exocytosis, vesicles containing proteins, hormones, or other substances move to the cell membrane, where they fuse with it. This fusion allows the contents of the vesicles to be expelled into the extracellular space, facilitating communication and metabolic activities within the organism. Understanding exocytosis is essential as it plays a key role in various physiological functions, including neurotransmitter release in nerve cells, hormone secretion in endocrine cells, and the removal of waste products. These processes underscore the importance of exocytosis in maintaining cellular function and homeostasis.

6. What is a haploid cell?

- A. A cell that contains two sets of chromosomes
- B. A cell that contains one set of chromosomes**
- C. A cell that is in the process of dividing
- D. A cell that has no DNA

A haploid cell is defined as a cell that contains one set of chromosomes. This means that it has half the number of chromosomes compared to a diploid cell, which contains two sets. Haploid cells are typically produced through the process of meiosis, which occurs during the formation of gametes—sperm and egg cells in animals. Such cells are crucial for sexual reproduction, as fertilization of a haploid sperm and a haploid egg results in a diploid zygote, restoring the full set of chromosomes. In contrast, a cell that contains two sets of chromosomes refers to diploid cells, typically found in most somatic (body) cells. Cells in the process of dividing may be in various stages of mitosis or meiosis, but not all dividing cells are haploid; they can equally be diploid. Lastly, a cell that has no DNA does not fulfill the basic criteria for being a cell, as all cells must contain genetic material to function and replicate. These distinctions clearly illuminate why a haploid cell is identified by its single set of chromosomes.

7. What type of blood is transported by the inferior vena cava?

- A. Oxygenated blood
- B. Deoxygenated blood**
- C. Nutrient-rich blood
- D. Carbonated blood

The inferior vena cava transports deoxygenated blood. This large vein collects blood from the lower half of the body, including the legs, pelvis, and abdomen, and returns it to the right atrium of the heart. The blood in the inferior vena cava has delivered its oxygen to the body's tissues and has received carbon dioxide and other waste products, which is why it is considered deoxygenated. Deoxygenated blood is characterized by lower levels of oxygen and higher levels of carbon dioxide, as it has already fulfilled its purpose of oxygen delivery. Thus, the blood returning via the inferior vena cava is prepared to be re-oxygenated in the lungs once it enters the right side of the heart and is pumped to the lungs for gas exchange. In contrast, the other types of blood mentioned are not transported by the inferior vena cava: oxygenated blood is carried by the pulmonary veins to the left atrium from the lungs, nutrient-rich blood would typically be found in the hepatic portal circulation before it reaches the systemic circulation, and carbonated blood is not a recognized term in human physiology.

8. An atom with an atomic number of 58 and an atomic mass of 118 has how many neutrons?

A. 60

B. 58

C. 118

D. 50

To determine the number of neutrons in an atom, you can use the formula: $\text{Number of Neutrons} = \text{Atomic Mass} - \text{Atomic Number}$. In this case, the atom has an atomic number of 58 and an atomic mass of 118. Substituting these values into the formula gives: $\text{Number of Neutrons} = 118 - 58 = 60$. This means the atom contains 60 neutrons. Understanding this calculation is important, as the atomic number represents the number of protons in the nucleus, while the atomic mass is the total number of protons and neutrons combined. Therefore, this knowledge is crucial for grasping the structure of atoms in chemistry and physics.

9. Which component plays a key role in maintaining blood pressure?

A. Platelets

B. Arteries

C. Veins

D. Capillaries

Arteries play a crucial role in maintaining blood pressure because they are the blood vessels that carry oxygenated blood away from the heart to the tissues of the body. The structural characteristics of arteries, such as their thick, muscular walls, allow them to withstand and regulate the high pressure generated by the heart's pumping action. This pressure is essential for ensuring that blood is distributed effectively to various organs and tissues. The ability of arteries to constrict and dilate (change their diameter) also directly influences blood pressure. When arteries constrict, blood pressure rises because the same volume of blood is forced through a narrower space. Conversely, when they dilate, blood pressure decreases as the blood flows through a wider space. This regulation of blood pressure by arterial response is vital for maintaining homeostasis and ensuring that tissues receive adequate blood flow according to their metabolic needs. In contrast, while platelets are essential for blood clotting, veins are primarily responsible for returning deoxygenated blood back to the heart, and capillaries facilitate the exchange of gases, nutrients, and waste products between blood and tissues. These functions are important but do not have the same direct impact on the maintenance of blood pressure as the role played by arteries.

10. What does the left ventricle do?

A. Pumps deoxygenated blood to the lungs

B. Pumps oxygenated blood to the body

C. Receives blood from the right atrium

D. Filters blood for the heart

The left ventricle is responsible for pumping oxygenated blood throughout the body, making it essential for delivering the necessary nutrients and oxygen to the tissues and organs. After receiving oxygen-rich blood from the lungs via the pulmonary veins, the left ventricle contracts and propels this blood into the aorta, which is the main artery that carries oxygenated blood to the systemic circulation. Understanding the function of the left ventricle is crucial in comprehending the heart's overall role in maintaining proper circulation. Its robust muscular wall allows it to generate the high pressure required to distribute blood efficiently over various distances in the body, differentiating its action from that of other chambers of the heart, such as the right ventricle, which pumps deoxygenated blood to the lungs for oxygenation.

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://ac-hpat.examzify.com>

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

SAMPLE