

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



Prepare with structure. Pass with confidence



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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 transportation method requires energy input?**
 - A. Diffusion
 - B. Osmosis
 - C. Active Transport
 - D. Facilitated Diffusion
- 2. Where does the right ventricle pump blood to?**
 - A. The body
 - B. The lungs
 - C. The atrium
 - D. The heart
- 3. Which of the following best describes the relationship between a virus and its host cell during the lysogenic cycle?**
 - A. The virus actively destroys the host cell
 - B. The virus integrates its genetic material into the host cell
 - C. The virus remains completely inactive
 - D. The virus rapidly replicates and exits the host
- 4. What is the role of the digestive system?**
 - A. To breakdown food, reabsorb water and nutrients, and eliminate waste
 - B. To transport oxygen throughout the body
 - C. To filter blood and produce hormones
 - D. To transmit nerve signals
- 5. What is the most common electrical charge of the ions in group 2 elements?**
 - A. +1
 - B. +2
 - C. 0
 - D. -1

6. After full inspiration, 'forced vital capacity' measures what?

- A. The volume of air forcibly blown out
- B. The total lung capacity
- C. The amount of oxygen absorbed
- D. The residual volume of air

7. What occurs in the lytic cycle of viral reproduction?

- A. The host cell survives
- B. The virus incorporates its DNA into the host genome
- C. The reproductive cycle ends in the death of the host
- D. The virus remains dormant

8. What is the role of the xylem in a plant?

- A. Transporting sugars to the leaves
- B. Conducting photosynthesis
- C. Transporting water and minerals from roots
- D. Storing energy for the plant

9. Which substance does the gallbladder release?

- A. Insulin
- B. Gastric acid
- C. Bile
- D. Pancreatic juice

10. Where are lysosomes synthesized?

- A. Smooth endoplasmic reticulum
- B. Rough endoplasmic reticulum
- C. Golgi apparatus
- D. Nucleus

Answers

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

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Explanations

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1. 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.

2. Where does the right ventricle pump blood to?

- A. The body
- B. The lungs**
- C. The atrium
- D. The heart

The right ventricle's primary role is to pump deoxygenated blood into the lungs for oxygenation. This process takes place through the pulmonary arteries. As blood flows from the body, it enters the right atrium, moves to the right ventricle, and then is pushed into the lungs where carbon dioxide is exchanged for oxygen. This makes the lungs the correct destination for the blood being pumped by the right ventricle, which is essential for maintaining the body's oxygen levels and overall cardiovascular function. The other options represent parts of the circulatory system but do not accurately reflect the function of the right ventricle. The body would be served by the left ventricle, while the atrium and heart itself are part of the structure through which blood flows, but they are not destinations for the right ventricle's output.

3. Which of the following best describes the relationship between a virus and its host cell during the lysogenic cycle?

- A. The virus actively destroys the host cell
- B. The virus integrates its genetic material into the host cell**
- C. The virus remains completely inactive
- D. The virus rapidly replicates and exits the host

The correct choice highlights the nature of the lysogenic cycle, which is characterized by the integration of the virus's genetic material into the host cell's genome. During this phase, the viral DNA, referred to as a prophage when integrated, becomes a permanent part of the host's DNA. This integration allows the virus to replicate passively along with the host cell during cellular division, meaning that anytime the host cell replicates, it also replicates the viral genetic material without causing immediate harm to the host. This is distinctly different from the lytic cycle, where a virus would actively destroy the host cell to release new viral particles. In the lysogenic cycle, the virus usually remains dormant, and the host cell can continue its normal functions until certain triggers prompt the viral genetic material to exit the host genome and initiate the lytic cycle, leading to active reproduction of the virus and eventual cell lysis. The lytic cycle contrasts the lysogenic cycle by emphasizing active replication and destruction, which is why it's important to differentiate between these two mechanisms of viral propagation. By understanding this nuanced relationship, one can appreciate how some viruses can persist in an organism without immediately causing disease, exemplifying the subtleties of viral behavior and host interactions.

4. What is the role of the digestive system?

- A. To breakdown food, reabsorb water and nutrients, and eliminate waste**
- B. To transport oxygen throughout the body
- C. To filter blood and produce hormones
- D. To transmit nerve signals

The role of the digestive system is primarily focused on the breakdown of food, the reabsorption of water and nutrients, and the elimination of waste. This process begins in the mouth, where food is mechanically broken down and mixed with saliva, and continues through the esophagus, stomach, small intestine, and large intestine. Each part of the digestive tract has a specialized function that contributes to these overall objectives. In the stomach, food is mixed with gastric juices to further break it down into a semi-liquid form. The small intestine plays a crucial role, as it is where most nutrient absorption occurs—nutrients from digested food are absorbed into the bloodstream through the intestinal walls. Water is also reabsorbed in the large intestine, which is essential for maintaining hydration and electrolyte balance in the body. Finally, any undigested food and waste products are eliminated through the rectum. Understanding these functions emphasizes the complexity and importance of the digestive system in overall health and nutrition, as it not only provides the body with essential energy and nutrients but also helps manage waste effectively.

5. What is the most common electrical charge of the ions in group 2 elements?

- A. +1
- B. +2**
- C. 0
- D. -1

Group 2 elements, also known as alkaline earth metals, commonly exhibit a +2 electrical charge when they form ions. This is due to their atomic structure, where each element has two electrons in its outermost shell (valence shell). To achieve a stable electron configuration, similar to that of noble gases, these elements tend to lose both of their outer electrons. This loss of two negatively charged electrons results in the formation of ions with a positive charge of +2. For instance, when magnesium (Mg) and calcium (Ca), both of which are group 2 elements, ionize, they lose two electrons to form Mg^{2+} and Ca^{2+} ions, respectively. This characteristic of group 2 metals is consistent across all elements in the group, establishing +2 as the most common charge for their ions.

6. After full inspiration, 'forced vital capacity' measures what?

- A. The volume of air forcibly blown out**
- B. The total lung capacity
- C. The amount of oxygen absorbed
- D. The residual volume of air

'Forced vital capacity' measures the volume of air that is forcibly blown out after a full inspiration. This assessment is commonly used in pulmonary function tests to evaluate the strength and capacity of the lungs. During the forced vital capacity maneuver, an individual takes a deep breath in (full inspiration) and then exhales forcefully and completely. The volume of air they expel is indicative of their lung health and can help diagnose conditions such as asthma, chronic obstructive pulmonary disease (COPD), and restrictive lung diseases. The total lung capacity refers to the maximum amount of air the lungs can hold, which includes all volumes of air (inspiratory reserve, expiratory reserve, tidal volume, and residual volume), but this is not specifically what forced vital capacity measures. The forced vital capacity does not provide information about the amount of oxygen absorbed; that pertains to different measures of gas exchange in the lungs. Residual volume is the amount of air remaining in the lungs after a person has exhaled completely and is also not related to forced vital capacity, as this measurement focuses solely on the air expelled during the forced exhalation.

7. What occurs in the lytic cycle of viral reproduction?

- A. The host cell survives
- B. The virus incorporates its DNA into the host genome
- C. The reproductive cycle ends in the death of the host**
- D. The virus remains dormant

In the lytic cycle of viral reproduction, the primary characteristic is that the reproductive cycle culminates in the death of the host cell. During this process, a virus attaches to a susceptible host cell, injects its genetic material, and repurposes the host's cellular machinery to produce viral components. These components are assembled into new viral particles, which then lead to the lysis, or rupture, of the host cell, releasing the newly formed virions into the environment. This destruction of the host cell is a hallmark of the lytic cycle, making it distinct from other viral reproductive mechanisms such as the lysogenic cycle, where the viral DNA integrates into the host genome without killing the host. In summary, the lytic cycle is characterized by active viral replication and the resultant death of the host cell, which reinforces the correctness of identifying that the reproductive cycle ends in the death of the host.

8. What is the role of the xylem in a plant?

- A. Transporting sugars to the leaves
- B. Conducting photosynthesis
- C. Transporting water and minerals from roots**
- D. Storing energy for the plant

The xylem plays a crucial role in the plant's vascular system, primarily tasked with the transport of water and dissolved minerals absorbed from the soil through the roots to the rest of the plant, including the stems and leaves. This process is essential for various physiological functions, including photosynthesis, nutrient uptake, and maintaining turgor pressure within the plant cells, which helps to keep the plant upright and stable. The significance of the xylem extends beyond mere water transport; it also assists in the distribution of minerals that are vital for growth and development. As plants release water vapor from their leaves (a process called transpiration), it creates a negative pressure that helps pull water upward through the xylem vessels, making the xylem instrumental in the plant's overall health and functioning. The other options highlight functions primarily associated with other parts or processes in the plant. For instance, the transport of sugars to the leaves is carried out by the phloem, and conducting photosynthesis mainly occurs in the chloroplasts of the leaves, not in the xylem. Energy storage is typically handled by modified tissues such as starch in roots and leaves. Therefore, the answer regarding the xylem's role in transporting water and minerals aligns accurately with

9. Which substance does the gallbladder release?

- A. Insulin
- B. Gastric acid
- C. Bile**
- D. Pancreatic juice

The gallbladder plays a crucial role in the digestive system by storing and concentrating bile, which is produced in the liver. When food, particularly fatty food, enters the small intestine, the gallbladder contracts and releases bile into the duodenum. Bile is essential for the emulsification of fats, allowing for their proper digestion and absorption in the intestine. Insulin is a hormone produced by the pancreas that regulates blood sugar levels, and it is not released by the gallbladder. Gastric acid is secreted by the stomach to aid in digestion but is not associated with the gallbladder's functions. Pancreatic juice, which contains digestive enzymes and bicarbonate, is released by the pancreas, not the gallbladder. Therefore, the bile released by the gallbladder is the substance directly responsible for aiding in the digestion of fats and is the correct choice for this question.

10. Where are lysosomes synthesized?

- A. Smooth endoplasmic reticulum
- B. Rough endoplasmic reticulum**
- C. Golgi apparatus
- D. Nucleus

Lysosomes are synthesized primarily in the rough endoplasmic reticulum (RER). The rough endoplasmic reticulum is studded with ribosomes, which are the sites of protein synthesis. Ribosomes translate mRNA into polypeptide chains, which are then processed within the RER. During this process, enzymes and other proteins that are necessary for lysosome function are produced. Once the proteins are synthesized in the RER, they are transported to the Golgi apparatus for further processing, modification, and packaging. The Golgi then sorts and targets the enzymes to lysosomes. While the Golgi apparatus plays a crucial role in the final stages of lysosome formation and function, the initial synthesis of lysosomal proteins occurs in the rough endoplasmic reticulum. The other options refer to different organelles involved in various cellular processes but are not the primary sites for the synthesis of lysosomal components. The smooth endoplasmic reticulum is primarily involved in lipid synthesis and detoxification, the Golgi apparatus is responsible for modifying and shipping proteins (including those for lysosomes), and the nucleus houses the genetic material but does not directly synthesize lysosomal enzymes.

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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!

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