

Praxis Math and Science (5008) Practice Exam (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. 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 of the following is a primary function of the circulatory system?**
 - A. To allow movement**
 - B. To transport nutrients and oxygen**
 - C. To produce hormones**
 - D. To facilitate digestion**

- 2. What are integers?**
 - A. Whole numbers only**
 - B. Whole numbers and their opposites**
 - C. Numbers that can be expressed as fractions**
 - D. Only negative numbers**

- 3. What is the primary energy source for life on Earth?**
 - A. The Moon**
 - B. The Ocean**
 - C. The Sun**
 - D. Volcanic Activity**

- 4. Which component of the cell is responsible for energy production?**
 - A. Ribosome**
 - B. Nucleus**
 - C. Mitochondria**
 - D. Golgi apparatus**

- 5. What is meant by "conservation of number"?**
 - A. The ability to group numbers in different ways**
 - B. Understanding that quantity remains the same despite arrangement**
 - C. Counting without using objects**
 - D. Recognizing the highest number in a sequence**

- 6. What is the primary function of nucleic acids?**
- A. To provide energy**
 - B. To store genetic information**
 - C. To build cell structures**
 - D. To catalyze reactions**
- 7. What is the term for the process in which liquid water turns into vapor?**
- A. Condensation**
 - B. Evaporation**
 - C. Precipitation**
 - D. Sublimation**
- 8. What is the term for the longest side of a right triangle?**
- A. Hypotenuse**
 - B. Leg**
 - C. Base**
 - D. Side**
- 9. What is the definition of a hypothesis?**
- A. A proven fact based on experimentation**
 - B. A proposed explanation for a phenomenon**
 - C. A summary of observed data**
 - D. A law that cannot be challenged**
- 10. What does the law of inertia state?**
- A. An object in motion tends to slow down**
 - B. An object remains at rest unless acted upon by an external force**
 - C. All forces acting on an object are balanced**
 - D. Objects move due to the force of gravity**

Answers

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

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Explanations

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1. Which of the following is a primary function of the circulatory system?

- A. To allow movement
- B. To transport nutrients and oxygen**
- C. To produce hormones
- D. To facilitate digestion

The primary function of the circulatory system is to transport nutrients and oxygen throughout the body. This system comprises the heart, blood vessels, and blood, working together to deliver essential substances to cells and remove waste products. Oxygen is absorbed from the lungs into the bloodstream and then carried to every cell to support cellular respiration, which produces the energy necessary for bodily functions. Similarly, nutrients absorbed from the digestive system enter the bloodstream to be distributed to tissues and organs, ensuring that they receive the fuel they need for proper function. In addition to transporting oxygen and nutrients, the circulatory system plays a critical role in maintaining homeostasis, regulating temperature, and transporting hormones and immune cells; however, its primary and most vital function revolves around the transport of oxygen and nutrients.

2. What are integers?

- A. Whole numbers only
- B. Whole numbers and their opposites**
- C. Numbers that can be expressed as fractions
- D. Only negative numbers

Integers are defined as the set of whole numbers that include all positive whole numbers, negative whole numbers, and zero. This definition encompasses the entire number line without any fractional or decimal components. By selecting the option that includes whole numbers and their opposites, it correctly reflects that integers consist of 0, positive integers (1, 2, 3, ...) and negative integers (-1, -2, -3, ...). The other choices do not accurately represent the complete set of integers. For instance, whole numbers only would exclude negative values and zero, while numbers expressed as fractions would refer to rational numbers rather than integers. Similarly, focusing exclusively on negative numbers overlooks the positive integers and zero, which are essential components of the integer set. Thus, the assertion that integers encompass whole numbers and their opposites accurately captures their full definition in mathematics.

3. What is the primary energy source for life on Earth?

- A. The Moon
- B. The Ocean
- C. The Sun**
- D. Volcanic Activity

The Sun is the primary energy source for life on Earth because it provides the light and heat essential for photosynthesis, which is the process by which plants convert light energy into chemical energy. This process not only supports plant life, but it also forms the foundation of the food chain, ensuring that energy is transferred to herbivores and then to carnivores. Additionally, the Sun's energy influences various climatic and weather patterns that are crucial for sustaining ecosystems. Without the Sun, photosynthesis would not occur, leading to a collapse of food supplies and, ultimately, life as we know it on Earth. The other options, while significant in their own contexts, do not provide the primary energy necessary for life.

4. Which component of the cell is responsible for energy production?

- A. Ribosome
- B. Nucleus
- C. Mitochondria**
- D. Golgi apparatus

The mitochondria are often referred to as the "powerhouse of the cell" because they are the primary site of energy production through the process of cellular respiration. During cellular respiration, mitochondria convert nutrients, particularly glucose, into adenosine triphosphate (ATP), which is the energy currency used by cells for various metabolic processes. This involves multiple steps that include glycolysis, the Krebs cycle, and the electron transport chain, all of which take place within the mitochondria. In contrast, ribosomes are involved in protein synthesis, the nucleus houses the cell's genetic material and controls cellular activities, and the Golgi apparatus is responsible for modifying, sorting, and packaging proteins and lipids for secretion or use within the cell. While all these components are essential for cellular function, none are directly involved in the energy production process like the mitochondria are. This is why the correct choice clearly highlights the unique role of mitochondria in cellular energy production.

5. What is meant by "conservation of number"?

- A. The ability to group numbers in different ways
- B. Understanding that quantity remains the same despite arrangement**
- C. Counting without using objects
- D. Recognizing the highest number in a sequence

The concept of "conservation of number" refers to the understanding that the quantity of a set remains the same, even when its arrangement or presentation changes. This principle is crucial in early childhood mathematics development, as it underlines the idea that numbers reflect a fixed quantity rather than a variable one. For example, when children are shown two groups of objects that have the same number of items, and those objects are rearranged into different configurations, conservation of number helps them realize that the total count has not changed, despite the visual differences in arrangement. This ability is foundational in helping students grasp basic mathematical concepts, such as addition and subtraction, as well as more complex operations later on. Other choices might touch on related skills, such as grouping numbers or counting, but they do not encapsulate the essential idea that the total quantity does not fluctuate regardless of how the items are displayed. Recognizing the highest number in a sequence pertains more to ordinal understanding rather than the fundamental concept of conservation.

6. What is the primary function of nucleic acids?

- A. To provide energy
- B. To store genetic information**
- C. To build cell structures
- D. To catalyze reactions

Nucleic acids, which include DNA and RNA, play a crucial role in the storage and transmission of genetic information within living organisms. Their primary function is to encode the instructions needed for the development, functioning, growth, and reproduction of all forms of life. DNA contains the genetic blueprint that is passed from one generation to another, ensuring that the necessary information for producing proteins and other vital molecules is preserved and transmitted. RNA, on the other hand, is involved in translating that genetic information into proteins, which perform various functions within cells. While options like providing energy, building cell structures, and catalyzing reactions involve other crucial biomolecules, such as carbohydrates, proteins, and enzymes, these roles are not the primary function associated with nucleic acids. Nucleic acids are fundamentally about the information they carry, making the storage of genetic information their main role.

7. What is the term for the process in which liquid water turns into vapor?

- A. Condensation**
- B. Evaporation**
- C. Precipitation**
- D. Sublimation**

The term for the process in which liquid water turns into vapor is evaporation. This process occurs when molecules in liquid water gain enough energy to overcome intermolecular forces and escape into the air as gas. Evaporation typically happens at temperatures below the boiling point, and it can take place at any temperature, as long as there is energy supplied to the water molecules, such as heat from the surrounding environment. In the context of the other options, condensation refers to the opposite process where vapor turns back into liquid water, typically occurring when warm air cools and loses energy. Precipitation refers to any form of water, such as rain or snow, that falls from clouds to the ground and is not related to the phase change of liquid water becoming vapor. Sublimation involves a solid turning directly into a vapor without going through the liquid state, such as dry ice changing into carbon dioxide gas, and is not applicable to the conversion of liquid water.

8. What is the term for the longest side of a right triangle?

- A. Hypotenuse**
- B. Leg**
- C. Base**
- D. Side**

The longest side of a right triangle is known as the hypotenuse. This term specifically refers to the side opposite the right angle, and it plays a crucial role in the Pythagorean theorem, which states that in a right triangle, the square of the length of the hypotenuse is equal to the sum of the squares of the lengths of the other two sides. This relationship establishes the hypotenuse as inherently longer than either of the other two sides, which are referred to as the legs of the triangle. Understanding this term is fundamental in geometry, especially when dealing with right triangles, as it also relates to calculations involving triangle properties and trigonometric functions.

9. What is the definition of a hypothesis?

- A. A proven fact based on experimentation
- B. A proposed explanation for a phenomenon**
- C. A summary of observed data
- D. A law that cannot be challenged

A hypothesis is defined as a proposed explanation for a phenomenon based on limited evidence as a starting point for further investigation. In scientific research, it serves as a testable statement that can be supported or refuted through experiments and observations. This makes it a foundational component of the scientific method, guiding researchers in designing experiments to explore the validity of their idea. In contrast, a proven fact based on experimentation refers to conclusions drawn after conducting thorough investigations, while a summary of observed data is simply a compilation of what has been recorded and noted during studies. A law that cannot be challenged suggests a level of certainty and universal acceptance that is not characteristic of a hypothesis, which is inherently tentative and subject to testing and revision. Thus, the proposed explanation encapsulated in the correct answer is crucial in advancing scientific knowledge through inquiry and experimentation.

10. What does the law of inertia state?

- A. An object in motion tends to slow down
- B. An object remains at rest unless acted upon by an external force**
- C. All forces acting on an object are balanced
- D. Objects move due to the force of gravity

The law of inertia, often associated with Sir Isaac Newton's First Law of Motion, asserts that an object will remain in its state of rest or uniform motion in a straight line unless acted upon by a net external force. This principle emphasizes the intrinsic property of objects to resist changes in their motion. An object at rest will not start moving unless a force pushes or pulls it, and an object in motion will not change its velocity unless a force causes it to do so. This concept is fundamental in understanding motion and force, as it explains why objects do not spontaneously start moving or stop moving on their own. The law implies that forces need to overcome an object's inertia to initiate motion or change its direction or speed. Therefore, recognizing that an object remains at rest or continues in motion in the absence of external influences clearly defines the law of inertia.

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://praxis5008.examzify.com>

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

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