

# Science Entrance Practice Exam (Sample)

## Study Guide



**Everything you need from our exam experts!**

**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

<b>Copyright</b> .....	<b>1</b>
<b>Table of Contents</b> .....	<b>2</b>
<b>Introduction</b> .....	<b>3</b>
<b>How to Use This Guide</b> .....	<b>4</b>
<b>Questions</b> .....	<b>5</b>
<b>Answers</b> .....	<b>8</b>
<b>Explanations</b> .....	<b>10</b>
<b>Next Steps</b> .....	<b>16</b>

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 type of reproduction requires the union of male and female gametes?**
  - A. Asexual reproduction**
  - B. External fertilization**
  - C. Sexual reproduction**
  - D. Budding**
  
- 2. Which component of the cell is involved in transporting proteins synthesized in the rough endoplasmic reticulum?**
  - A. Ribosomes**
  - B. Vesicles/Vacuoles**
  - C. Lysosomes**
  - D. Cell wall**
  
- 3. Which ascribed characteristic defines the organisms belonging to Kingdom Animalia?**
  - A. Autotrophic metabolism**
  - B. Photosynthetic capabilities**
  - C. Heterotrophic metabolism**
  - D. Multicellularity and prokaryotic structure**
  
- 4. Which process is critical for growth, repair, and asexual reproduction in eukaryotic organisms?**
  - A. Meiosis**
  - B. Photosynthesis**
  - C. Mitosis**
  - D. Respiration**
  
- 5. Which process involves a new organism growing out of the body of a parent organism?**
  - A. Sporulation**
  - B. Fission**
  - C. Budding**
  - D. Asexual reproduction**

- 6. Which of the following cell types is known for having a rigid cell wall?**
- A. Animal Cell**
  - B. Plant Cell**
  - C. Prokaryotic Cell**
  - D. Both Plant and Prokaryotic Cells**
- 7. Which simple machine consists of two circular objects that rotate about a common axis?**
- A. Inclined plane**
  - B. Pulley**
  - C. Wheel and axle**
  - D. Screw**
- 8. Which type of reproduction typically requires fewer resources and energy?**
- A. Asexual reproduction**
  - B. Sexual reproduction**
  - C. Hybridization**
  - D. Natural selection**
- 9. Which structure provides the primary mechanical support to a plant cell?**
- A. Cell membrane**
  - B. Cytoplasm**
  - C. Cell wall**
  - D. Nucleus**
- 10. Which of the following is NOT a feature of organic compounds?**
- A. Contains carbon atoms**
  - B. Insoluble in water**
  - C. Can contain hydrogen and oxygen**
  - D. Exclusively made from non-living sources**

## Answers

SAMPLE

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

SAMPLE

## **Explanations**

SAMPLE

**1. What type of reproduction requires the union of male and female gametes?**

- A. Asexual reproduction**
- B. External fertilization**
- C. Sexual reproduction**
- D. Budding**

Sexual reproduction is characterized by the fusion of male and female gametes, known as fertilization. In this process, the male gamete (sperm) and the female gamete (egg) combine to form a zygote, which then develops into a new organism. This method introduces genetic diversity, as the offspring have a unique combination of genes from both parents, which can enhance adaptability and survival in changing environments. In the context of the options provided, asexual reproduction does not involve gametes and typically results in offspring that are genetically identical to the parent organism. External fertilization is a method that can occur during sexual reproduction but specifically refers to the situation where fertilization occurs outside the body, commonly seen in many aquatic organisms. Budding is a form of asexual reproduction where a new organism develops from a part of the parent organism, independent of gametes. Therefore, sexual reproduction is the accurate term for the process that requires the union of male and female gametes.

**2. Which component of the cell is involved in transporting proteins synthesized in the rough endoplasmic reticulum?**

- A. Ribosomes**
- B. Vesicles/Vacuoles**
- C. Lysosomes**
- D. Cell wall**

The component of the cell involved in transporting proteins synthesized in the rough endoplasmic reticulum is indeed vesicles. When proteins are made on the ribosomes attached to the rough endoplasmic reticulum, they are often packaged into vesicles. These small membrane-bound compartments bud off from the rough ER and serve as transport vehicles, carrying the newly synthesized proteins to various destinations within the cell, such as the Golgi apparatus for further processing, modification, and sorting. In addition to their role in protein transport, vesicles can also be involved in other functions like secretion of substances from the cell or delivery of materials to lysosomes for degradation. This highlights their importance in maintaining cellular function and communication. Other options are not involved in the direct transport of proteins from the rough endoplasmic reticulum; ribosomes synthesize proteins but do not transport them, lysosomes are primarily involved in breaking down waste materials and cellular debris, and the cell wall provides structure and protection but does not play a role in protein transport.

**3. Which ascribed characteristic defines the organisms belonging to Kingdom Animalia?**

- A. Autotrophic metabolism**
- B. Photosynthetic capabilities**
- C. Heterotrophic metabolism**
- D. Multicellularity and prokaryotic structure**

Organisms in Kingdom Animalia are fundamentally characterized by heterotrophic metabolism, meaning they cannot produce their own food through photosynthesis or other autotrophic processes. Instead, animals rely on consuming other organisms or organic material for energy and nutrients, which is a defining trait of this kingdom. Heterotrophs, like animals, play crucial roles in ecosystems as consumers at various trophic levels. They can be herbivores, carnivores, omnivores, or decomposers, all of which depend on the transfer of energy through food chains and food webs. This characteristic distinguishes them from autotrophic organisms, such as plants and some bacteria, which generate their own food and energy. While multicellularity is a feature of Kingdom Animalia, the defining aspect that sets them apart from other kingdoms is their heterotrophic mode of obtaining energy, which is not present in the other specified characteristics.

**4. Which process is critical for growth, repair, and asexual reproduction in eukaryotic organisms?**

- A. Meiosis**
- B. Photosynthesis**
- C. Mitosis**
- D. Respiration**

Mitosis is the key process for growth, repair, and asexual reproduction in eukaryotic organisms. During mitosis, a single cell divides to produce two genetically identical daughter cells. This process is essential for growth because it allows an organism to increase its cell number as it develops. When it comes to repair, mitosis plays a crucial role in replacing damaged or dead cells, ensuring that tissues can maintain their structure and function. For asexual reproduction, which is a common method of reproduction in certain organisms like plants, fungi, and some single-celled eukaryotes, mitosis allows these organisms to reproduce without the contribution of genetic material from another organism, resulting in offspring that are clones of the parent. In contrast, meiosis is a different type of cell division that results in gametes for sexual reproduction and does not directly contribute to growth or repair. Photosynthesis is a process by which certain organisms convert light energy into chemical energy but does not involve cell division. Respiration is a metabolic process that generates energy for cellular activities and is not directly related to the division of cells. Thus, mitosis is integral to the processes that support an organism's growth, maintenance, and asexual reproduction.

**5. Which process involves a new organism growing out of the body of a parent organism?**

- A. Sporulation**
- B. Fission**
- C. Budding**
- D. Asexual reproduction**

The process of budding is characterized by the development of a new organism that forms as an outgrowth from the parent organism. This method of asexual reproduction allows the new bud to grow and eventually detach from the parent to become an independent organism. Examples of organisms that reproduce through budding include hydra and certain fungi. In contrast, sporulation involves the formation of spores, which are specialized reproductive cells that can give rise to new individuals under suitable conditions. Fission is a process where a parent organism divides into two or more individual organisms, commonly seen in bacteria and some protozoa. Hence, while all these processes relate to reproduction, they do not specifically describe the phenomenon of a new organism growing directly from the body of a parent organism as budding does.

**6. Which of the following cell types is known for having a rigid cell wall?**

- A. Animal Cell**
- B. Plant Cell**
- C. Prokaryotic Cell**
- D. Both Plant and Prokaryotic Cells**

The cell types that are known for having a rigid cell wall are plant cells and prokaryotic cells, making the choice that includes both of these types the correct answer. Plant cells possess a rigid cell wall made primarily of cellulose, providing structural support, protecting the cell, and helping to maintain turgor pressure within the cell. This rigidity is crucial for plants as it helps them grow upright and withstand various environmental factors. Prokaryotic cells, which include bacteria, also have a cell wall. The composition of the cell wall in prokaryotes differs from that in plants; it is typically made of peptidoglycan in bacteria. This structure serves similar functions, such as maintaining shape and providing protection against environmental stresses and osmotic pressure. Considering these characteristics, the combination of plant and prokaryotic cells possessing rigid cell walls confirms that the option stating both types is accurate.

**7. Which simple machine consists of two circular objects that rotate about a common axis?**

- A. Inclined plane**
- B. Pulley**
- C. Wheel and axle**
- D. Screw**

The correct answer is the wheel and axle, which is indeed a simple machine that consists of two circular objects that rotate about a common axis. In this configuration, the wheel is the larger circular component, while the axle is the smaller, central rod or shaft. When the wheel turns around the axle, it allows for the transmission of force and movement, making it easier to apply effort and reducing friction. The wheel and axle setup is commonly used in various applications, such as in vehicles, where the wheels rotate around the axles to facilitate motion. This system effectively converts rotational motion into linear motion, providing mechanical advantage in lifting or moving objects. Other options present different types of simple machines that do not fit this description. An inclined plane aids in raising heavy objects by reducing the required effort but does not involve rotation. A pulley consists of a wheel that changes the direction of force, typically using a rope or cable, rather than two rotating objects about a common axis as seen in the wheel and axle. The screw is a different kind of machine, utilizing a helical design to convert rotational force into linear movement, not defined by two circular objects rotating around a common point. Thus, the wheel and axle distinctly fits the criteria stated in the question.

**8. Which type of reproduction typically requires fewer resources and energy?**

- A. Asexual reproduction**
- B. Sexual reproduction**
- C. Hybridization**
- D. Natural selection**

Asexual reproduction is characterized by the process in which an organism can reproduce independently without the need for a mate. This mode of reproduction typically requires fewer resources and less energy compared to sexual reproduction because it usually involves simple cellular processes such as mitosis, where a single organism divides to produce one or more identical offspring. In asexual reproduction, there are no elaborate mating rituals or requirements for finding a partner, which can be resource-intensive and time-consuming. Organisms such as bacteria, plants (like strawberries that propagate through runners), and certain invertebrates utilize asexual reproduction methods like budding or fragmentation, which allow for rapid population growth without the limitations imposed by the need for male and female interactions. On the other hand, sexual reproduction involves the fusion of gametes from two parents, which requires energy-intensive processes such as courtship behaviors, mating, and the development of offspring. Hybridization, while a form of reproduction, specifically refers to the interbreeding of two different species and can be quite complex, also typically involving sexual reproduction. Natural selection, while a critical biological process, is not a mode of reproduction but rather the mechanism through which evolution occurs based on the survival and reproduction of individuals best suited to their environments. Hence, among the given choices,

**9. Which structure provides the primary mechanical support to a plant cell?**

- A. Cell membrane**
- B. Cytoplasm**
- C. Cell wall**
- D. Nucleus**

The cell wall is the structure that provides the primary mechanical support to a plant cell. It is composed mainly of cellulose, which forms a rigid and strong framework around the cell membrane. This rigidity is essential as it helps maintain the shape of the plant cell, protects against mechanical stress, and prevents excessive water loss by resisting internal pressure from the cell's turgor. In contrast, the cell membrane is a flexible barrier that regulates the movement of substances in and out of the cell but does not provide the same level of mechanical support. The cytoplasm, while it plays a crucial role in cellular processes and contains organelles, does not add structural rigidity to the cell itself. The nucleus serves as the control center for cellular functions and contains genetic material but is not involved in providing mechanical support to the cell structure. Hence, the cell wall stands out as the key component in maintaining the integrity and mechanical stability of plant cells.

**10. Which of the following is NOT a feature of organic compounds?**

- A. Contains carbon atoms**
- B. Insoluble in water**
- C. Can contain hydrogen and oxygen**
- D. Exclusively made from non-living sources**

Organic compounds are broadly defined by their carbon-based structures, which are intrinsic to their identity. A key feature of organic compounds is that they typically contain carbon atoms, which form the backbone of these molecules. Additionally, organic compounds can include hydrogen and oxygen atoms, as well as other elements, contributing to a wide array of structures and functional groups. The assertion that organic compounds are exclusively made from non-living sources is not accurate. In fact, many organic compounds are derived from living organisms, such as proteins, carbohydrates, lipids, and nucleic acids. Even compounds synthesized in laboratories can often mimic those found in living systems. While some organic compounds can indeed be synthesized from non-living sources, this is more of a method of production rather than a defining characteristic of organic compounds themselves. In contrast, criteria such as being insoluble in water can vary widely among organic compounds, and many organic molecules do dissolve in water, particularly those that are polar. Thus, the concept of being exclusively derived from non-living sources is incorrect when defining organic compounds, making it the right choice in this context.

## 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](mailto:hello@examzify.com).**

**Or visit your dedicated course page for more study tools and resources:**

**<https://scienceentrance.examzify.com>**

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

SAMPLE