

CERTIFY TEACHER SCIENCE PRACTICE EXAM (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

VISIT US ONLINE FOR
THE FULL VERSION STUDY GUIDE

<https://certifyteacherscience.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. The increase in diversity of dog breeds is most closely associated with which process?**
 - A. Natural selection
 - B. Selective breeding
 - C. Random mutation
 - D. Environmental adaptation
- 2. Which of the following scenarios represents a failure to do work?**
 - A. A person pushing against a wall without movement
 - B. A machine lifting a weight
 - C. A child throwing a ball
 - D. A car accelerating down a hill
- 3. Which statement does not define energy?**
 - A. Ability to continually be created
 - B. Ability to do work
 - C. Ability to cause change
 - D. Ability to exist in different forms
- 4. What happens when atoms are chemically bonded together?**
 - A. The valence electrons (the outer shell) in each atom interact
 - B. Atoms lose their individual properties
 - C. The nuclei of the atoms combine to form a new element
 - D. Electrons are completely transferred from one atom to another
- 5. According to modern evolutionary theory, what typically happens to genes responsible for new traits that enhance survival?**
 - A. They decrease in frequency
 - B. They remain constant
 - C. They increase in frequency
 - D. They are eliminated

- 6. Which environment is particularly advantageous for the conservation of temperature?**
- A. Inland deserts
 - B. Coastal regions
 - C. Mountain ranges
 - D. Urban cities
- 7. What is the purpose of heating crayon shavings and pressing them together in Ms. Fulton's lesson?**
- A. To demonstrate how crayons can be recycled
 - B. To illustrate how metamorphic rocks are formed
 - C. To understand the chemical properties of crayons
 - D. To mix colors for art projects
- 8. Which of the following is an example of a molecular formula?**
- A. H_2O
 - B. CH_4
 - C. $C_6H_{12}O_6$
 - D. $NaCl$
- 9. How do plants prevent soil erosion on steep slopes?**
- A. Plants absorb water from the soil.
 - B. Plants hold the soil in place and break the impact of rainfall.
 - C. Plants release nutrients into the soil.
 - D. Plants provide shade to prevent soil drying out.
- 10. Which of the following processes primarily produces metamorphic rocks?**
- A. Cooling and solidification
 - B. Compaction and cementation
 - C. Intense heat and pressure
 - D. Weathering and erosion

Answers

SAMPLE

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

SAMPLE

Explanations

SAMPLE

1. The increase in diversity of dog breeds is most closely associated with which process?

- A. Natural selection
- B. Selective breeding**
- C. Random mutation
- D. Environmental adaptation

The increase in diversity of dog breeds is most closely associated with selective breeding. This process involves humans intentionally mating dogs with specific traits to produce offspring that exhibit desired characteristics. Over generations, selective breeding has allowed for the proliferation of a vast array of dog breeds, each with unique physical and behavioral traits, tailored for specific purposes such as herding, companionship, or working traits. Selective breeding enables breeders to emphasize particular attributes, like coat color, size, or temperament, leading to the wide variety of breeds we see today. This differs from natural selection, which relies on environmental pressures and survival advantages rather than human choice. Random mutation contributes to genetic variations but does not directly establish the intentional diversification seen in dog breeds. Environmental adaptation also plays a role in how certain breeds may perform better in specific climates or tasks, but it does not drive the purposeful creation of new breeds.

2. Which of the following scenarios represents a failure to do work?

- A. A person pushing against a wall without movement**
- B. A machine lifting a weight
- C. A child throwing a ball
- D. A car accelerating down a hill

In the context of physics, work is defined as the transfer of energy that occurs when a force is applied to an object and the object moves in the direction of that force. For work to be done, there must be both a force acting on an object and a displacement of that object in the direction of the applied force. In the scenario where a person is pushing against a wall without any movement, although a force is being exerted, there is no displacement of the wall. The wall does not move, and therefore, no work is done on it. This illustrates a situation where energy is exerted, but because there is no movement of the object being pushed, it results in a failure to accomplish work in the physical sense. In contrast, the other scenarios involve actual movement or displacement in relation to the forces applied. A machine lifting a weight, a child throwing a ball, and a car accelerating down a hill all involve forces that result in the movement of objects. Hence, these scenarios do represent work being done.

3. Which statement does not define energy?

- A. Ability to continually be created
- B. Ability to do work
- C. Ability to cause change
- D. Ability to exist in different forms

Energy is fundamentally defined as the ability to do work, to cause change, and to exist in various forms. The second choice emphasizes the core concept of energy being a prerequisite for performing work, which is a foundational principle in physics and other sciences. Work, in this context, refers to the transfer of energy that occurs when a force is applied over a distance. The ability to cause change aligns with the idea that energy can lead to transformations in physical systems, such as moving objects, heating substances, or altering states of matter. It's a critical aspect of understanding how energy interacts within different processes and systems. Additionally, energy's existence in different forms—such as kinetic, potential, thermal, electrical, chemical, and nuclear—is a crucial aspect of its definition, illustrating the versatility and varied applications of energy in the natural world. In contrast, the notion that energy can be continually created does not align with the laws of thermodynamics, particularly the conservation of energy principle, which states that energy cannot be created or destroyed, only transformed from one form to another. This fundamental concept underpins the behavior of energy in all scientific disciplines. Thus, the first choice does not accurately depict the essence of energy.

4. What happens when atoms are chemically bonded together?

- A. The valence electrons (the outer shell) in each atom interact
- B. Atoms lose their individual properties
- C. The nuclei of the atoms combine to form a new element
- D. Electrons are completely transferred from one atom to another

When atoms are chemically bonded together, the interaction primarily occurs between their valence electrons, which are the electrons in the outermost shell of the atoms. This interaction can lead to the formation of different types of bonds, such as ionic or covalent bonds. In ionic bonding, atoms transfer electrons, leading to the formation of charged ions. In covalent bonding, atoms share electrons, allowing them to attain stable electron configurations. The behavior of these valence electrons is crucial in determining how atoms connect, their stability, and the properties of the resulting compounds. While it is true that bonding can affect an atom's properties, the essence of chemical bonding is rooted in the interactions of valence electrons. Thus, by focusing on these electrons, we can explain the fundamental principles of chemical bonding and predict the behavior of different elements when they combine to form compounds.

5. According to modern evolutionary theory, what typically happens to genes responsible for new traits that enhance survival?

- A. They decrease in frequency
- B. They remain constant
- C. They increase in frequency**
- D. They are eliminated

Genes that are responsible for new traits enhancing survival are subject to natural selection, a core principle of modern evolutionary theory. When an organism possesses a trait that improves its chances of surviving and reproducing in its environment, the alleles (gene variants) associated with that trait will likely be passed down to subsequent generations. As a result, those favorable traits increase in frequency within the population over time. This process occurs because organisms with advantageous traits are more likely to survive long enough to reproduce, passing on the genes corresponding to those traits. Consequently, the beneficial genes become more common in the gene pool, contributing to the overall adaptation of the species to its environment. This shift in gene frequency is a fundamental mechanism through which evolution occurs, illustrating how beneficial traits become more prevalent as they enhance survival and reproductive success.

6. Which environment is particularly advantageous for the conservation of temperature?

- A. Inland deserts
- B. Coastal regions**
- C. Mountain ranges
- D. Urban cities

Coastal regions are particularly advantageous for the conservation of temperature due to the moderating effects of large bodies of water. Water has a high specific heat capacity, which means it can absorb a substantial amount of heat without experiencing a significant change in temperature. This property helps maintain a more stable temperature range in coastal areas compared to other environments. During the day, coastal regions benefit from the cool breezes coming from the ocean, which can lower temperatures, while at night, the water releases heat back into the air, preventing rapid temperature drops. This moderating effect creates a milder climate, which is conducive to the conservation of temperature. In contrast, inland deserts tend to have extreme temperature fluctuations because land heats up and cools down much more quickly than water. Mountain ranges can also experience temperature extremes due to altitude changes and varying climates across different elevations. Urban cities, while they may exhibit a phenomenon known as the "urban heat island effect," still lack the temperature stabilization provided by large bodies of water. Thus, the unique properties of coastal regions allow them to effectively conserve temperature, making them the preferred choice in this context.

7. What is the purpose of heating crayon shavings and pressing them together in Ms. Fulton's lesson?

- A. To demonstrate how crayons can be recycled
- B. To illustrate how metamorphic rocks are formed**
- C. To understand the chemical properties of crayons
- D. To mix colors for art projects

The intention behind heating crayon shavings and pressing them together is to illustrate how metamorphic rocks are formed. This hands-on activity allows students to observe the process of applying heat and pressure to a material, mimicking the natural conditions under which metamorphic rocks are created in the Earth. Just as heat and pressure transform sedimentary rock into metamorphic rock, the heat causes the crayon wax to melt and the pressure forces the shavings to bond together, resulting in a new solid form. By engaging in this activity, students can draw parallels between the physical changes occurring in the crayon shavings and the geological processes that lead to the formation of metamorphic rocks, reinforcing their understanding of both rock cycles and the effects of temperature and pressure on materials. This method leverages a tangible experience to clarify the abstract concepts related to geology and material science.

8. Which of the following is an example of a molecular formula?

- A. H₂O
- B. CH₄**
- C. C₆H₁₂O₆
- D. NaCl

The correct answer is indeed one of the examples of a molecular formula, as a molecular formula specifies the number and types of atoms in a molecule. In this case, the molecular formula CH₄ indicates that each molecule consists of one carbon atom (C) and four hydrogen atoms (H). This formula is representative of methane, a common hydrocarbon, and illustrates how a molecular formula provides insight into the composition of a substance on a molecular level. The molecular formula conveys not just the elements involved, but also showcases the precise number of each type of atom present in the molecule. By contrast, while H₂O and C₆H₁₂O₆ are also molecular formulas, the answer specified here focuses on CH₄, which is a simpler example. On the other hand, NaCl represents an ionic compound rather than a molecular compound. Ionic compounds are composed of charged ions rather than discrete molecules, which is why it does not fit the definition of a molecular formula.

9. How do plants prevent soil erosion on steep slopes?

- A. Plants absorb water from the soil.
- B. Plants hold the soil in place and break the impact of rainfall.**
- C. Plants release nutrients into the soil.
- D. Plants provide shade to prevent soil drying out.

Plants play a crucial role in preventing soil erosion on steep slopes primarily by anchoring the soil with their root systems. The roots penetrate the ground, creating a network that stabilizes the soil and makes it less susceptible to being washed away by rain or water runoff. This physical anchoring is complemented by the way plants interact with rainfall. The leaves and stems of plants break the force of raindrops, reducing the impact on the soil surface, which helps to prevent soil particles from being dislodged and carried away. In addition to their role in soil stabilization, the presence of vegetation can enhance soil structure, increase water infiltration, and promote the formation of a top layer that protects against erosion. Overall, the combination of these factors underscores how plants effectively mitigate erosion, especially in areas with steep terrains where the risk of soil displacement is heightened.

10. Which of the following processes primarily produces metamorphic rocks?

- A. Cooling and solidification
- B. Compaction and cementation
- C. Intense heat and pressure**
- D. Weathering and erosion

Metamorphic rocks are primarily formed through the process of intense heat and pressure. This transformation occurs when existing rocks, which can be igneous, sedimentary, or other metamorphic rocks, are subjected to high temperatures and significant pressures usually deep within the Earth's crust. This environment causes the minerals in the rock to recrystallize, change structure, and form new mineral compositions, resulting in a metamorphic rock. For example, when shale is subjected to increased heat and pressure, it can transform into schist or gneiss, demonstrating how the original rock's properties can be altered under metamorphic conditions. Thus, the correct answer accurately reflects the geological processes fundamental to the formation of metamorphic rock.

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://certifyteacherscience.examzify.com>

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

SAMPLE