TEXES SCIENCE PRACTICE TEST (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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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

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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.

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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!

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Questions

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1. What is visible in the photograph described in the text?

A. The Earth

B. The Moon

C. The Space Shuttle

D. A comet

2. What vitamin deficiency leads to the disease scurvy?

A. Vitamin A

B. Vitamin B

C. Vitamin C

D. Vitamin D

3. In the digestive system of an earthworm, which part is primarily responsible for digestion and absorption?

A. Pharynx

B. Gizzard

C. Intestine

D. Crop

4. What is the rms potential drop across the resistor at resonance in the described RLC circuit?

A. 100 V

B. 150 V

C. 200 V

D. 250 V

5. When planning instructional activities, what should teachers prioritize?

A. Standardized testing formats

B. Constant teaching methods year after year

C. Evidence-based strategies

D. Personal teaching style

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6. For what discovery was Marie Curie awarded a Nobel Prize in chemistry?

A. Uranium

B. Polonium and radium

C. Curium

D. Radon

7. In what way does the speed of light differ in air compared to water?

A. It travels faster in air

B. It travels slower in air

C. It travels the same in both

D. It varies randomly

8. Which of the following equations represents a physical constant?

A. $c2 = 1/(\varepsilon 0 \mu 0)$

B. $v = f\lambda$

C. $\varepsilon 0 = 1/(\mu 0 c02)$

D. $p = mv$

9. What type of electromagnetic radiation reaches the Earth and is emitted back into space as heat energy?

A. Ultraviolet

B. Microwaves

C. Visible light

D. Infrared

10. What substance is primarily responsible for the erosion process that forms caves?

A. Granite

B. Limestone

C. Basalt

D. Sandstone

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Answers

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

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Explanations

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1. What is visible in the photograph described in the text?

A. The Earth

B. The Moon

C. The Space Shuttle

D. A comet

The photograph likely depicts the Space Shuttle, which stands out due to its distinctive design and features, such as its wings and orbiter section. The Space Shuttle was a critical part of NASA's space program, used for missions that included launching satellites, servicing the Hubble Space Telescope, and constructing the International Space Station. Its appearance is quite different from other objects listed, as the Earth and Moon are celestial bodies, while a comet would exhibit a tail and nucleus that are characteristic of its icy composition. In context, the correct identification of the Space Shuttle suggests that the photograph captures a moment related to human space exploration, showcasing technology designed specifically for travel and work beyond Earth's atmosphere. Recognizing the Space Shuttle in a photograph involves understanding its unique shape and the significance it holds in the history of spaceflight.

2. What vitamin deficiency leads to the disease scurvy?

A. Vitamin A

B. Vitamin B

C. Vitamin C

D. Vitamin D

Scurvy is a disease that arises from a deficiency of Vitamin C, also known as ascorbic acid. This vitamin plays a crucial role in the synthesis of collagen, which is essential for the integrity of skin, blood vessels, and connective tissues. When the body lacks sufficient Vitamin C, it cannot produce adequate collagen, leading to symptoms such as weakness, anemia, gum disease, and skin problems. The disease is historically associated with sailors and others who had limited access to fresh fruits and vegetables, which are the primary sources of Vitamin C. As a result, those affected by scurvy may experience symptoms like swollen and bleeding gums, bruising, and fatigue. In contrast, the other vitamins listed are not related to scurvy. Vitamin A is important for vision and immune function, Vitamin B refers to a group of vitamins that support energy metabolism and red blood cell production, and Vitamin D is essential for calcium absorption and bone health. Hence, the role of Vitamin C in maintaining collagen health directly correlates to the prevention of scurvy, confirming that a deficiency in this vitamin leads to the onset of the disease.

3. In the digestive system of an earthworm, which part is primarily responsible for digestion and absorption?

A. Pharynx

B. Gizzard

C. Intestine

D. Crop

The intestine of an earthworm plays a crucial role in both digestion and absorption. It is a long, coiled structure where the primary processes of breaking down food and absorbing nutrients occur. Once food passes through the pharynx and gizzard, where initial processing and grinding occur, the intestine receives the mixture. Here, enzymes further digest the food, allowing essential nutrients to be absorbed through the intestinal walls into the bloodstream of the earthworm. The other parts of the digestive system have specific and important functions but do not primarily handle digestion and absorption. The pharynx is involved in the intake of food, the gizzard functions to mechanically grind the food, and the crop serves as a temporary storage space for the ingested material, rather than actively participating in digestion and nutrient absorption.

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4. What is the rms potential drop across the resistor at resonance in the described RLC circuit?

A. 100 V

B. 150 V

C. 200 V

D. 250 V

*In an RLC circuit at resonance, the behavior of the circuit components interacts in a specific way that maximizes the current through the circuit. At resonance, the inductive reactance and capacitive reactance are equal in magnitude but opposite in phase, effectively canceling each other out. This results in the circuit being purely resistive, and the total impedance is minimized to just the resistance value. The rms potential drop across the resistor can be calculated by considering the maximum current that flows through the circuit at this frequency. Since the resonant frequency allows for maximum current due to the decreased impedance, the potential drop across the resistor is determined using Ohm's law: V = I*r, where V is the potential drop, I is the rms current, and r is the resistance. In this case, the potential drop across the resistor at resonance is stated to be 200 V, which indicates the circuit's characteristics and the specific values of voltage, current, and resistance align with the principles of resonance in an RLC circuit. This value reflects the inherent properties of the circuit under these resonant conditions. To summarize, the potential drop of 200 V at resonance signifies the optimal performance of the circuit, demonstrating the relationship between voltage, current, and*

5. When planning instructional activities, what should teachers prioritize?

A. Standardized testing formats

B. Constant teaching methods year after year

C. Evidence-based strategies

D. Personal teaching style

Prioritizing evidence-based strategies in instructional activities ensures that teaching methods are grounded in rigorous research and proven effectiveness. This approach allows educators to utilize instructional techniques that have demonstrably improved student learning outcomes. Evidence-based strategies involve analyzing current educational research, assessing what works best in various contexts, and adopting practices that have been validated through systematic study. In contrast, relying solely on standardized testing formats can narrow the focus of instruction to test preparation rather than comprehensive learning. Adopting constant teaching methods year after year may prevent teachers from incorporating new insights and innovations that could enhance their teaching effectiveness. Similarly, while personal teaching style is important, it should not overshadow the need for strategies that are backed by evidence, as the ultimate goal is to foster student learning and achievement based on what research indicates is most effective.

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6. For what discovery was Marie Curie awarded a Nobel Prize in chemistry?

A. Uranium

B. Polonium and radium

C. Curium

D. Radon

Marie Curie was awarded the Nobel Prize in Chemistry in 1911 for her discovery of the elements polonium and radium. This recognition was significant because it highlighted her groundbreaking work in radioactivity, a term she coined. Polonium and radium were isolated from uranium ore, and their properties and the phenomenon of radioactivity fundamentally changed the understanding of atomic structure and behavior. Curie's research laid the foundation for future studies in nuclear physics and chemistry, and her work contributed to advances in medical treatments, particularly in cancer therapy, due to the radioactive properties of these elements. This Nobel Prize was particularly noteworthy, as she was the first woman to receive a Nobel Prize in this field, and she remains the only person awarded Nobel Prizes in two different scientific fields (Physics and Chemistry).

7. In what way does the speed of light differ in air compared to water?

A. It travels faster in air

B. It travels slower in air

C. It travels the same in both

D. It varies randomly

The speed of light is faster in air than in water due to the differences in the refractive indices of these two mediums. The refractive index is a measure of how much the speed of light is reduced inside a medium compared to its speed in a vacuum. In air, the refractive index is close to 1 (approximately 1.0003), which means that light travels almost at its maximum speed, approximately 299,792 kilometers per second. In contrast, water has a higher refractive index (about 1.33), which indicates that light slows down when it enters water, traveling at approximately 225,000 kilometers per second. This difference in speed is why light is seen to travel faster in air than in water. Understanding this concept is fundamental in fields such as optics and physics, as it affects how light behaves when transitioning between different materials.

8. Which of the following equations represents a physical constant?

A. $c2 = 1/(\varepsilon 0 \mu 0)$

B. $v = f\lambda$

C. $\varepsilon 0 = 1/(\mu 0 c02)$

D. $p = mv$

The equation that represents a physical constant is associated with the relationship between various fundamental constants in physics. In the choice provided, the expression \(\epsilon_0 = \frac{1}{\mu_0 c^2} \) connects the permittivity of free space \(\epsilon_0 \), the permeability of free space \(\mu_0 \), and the speed of light \(c \). This relationship indicates how these constants are intertwined in electromagnetism and is based on the foundations of Maxwell's equations. This expression signifies that \(\epsilon_0 \) is not just a value but is defined through its relationship to other constants, thereby qualifying it as a representation of a physical constant. The other choices relate to different phenomena or equations in physics but do not solely represent physical constants themselves. For instance, the equation involving \(c^2 \), \(\epsilon_0 \), and \(\mu_0 \) illustrates the interactions of these constants rather than being a standalone constant. Similarly, the equations for velocity and momentum encompass quantities that depend on the specific circumstances of an object's motion but do not describe inherent physical constants. Thus, this makes the equation \(\epsilon_0 = \frac{1}{\mu

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9. What type of electromagnetic radiation reaches the Earth and is emitted back into space as heat energy?

A. Ultraviolet

B. Microwaves

C. Visible light

D. Infrared

The type of electromagnetic radiation that reaches the Earth and is emitted back into space as heat energy is infrared radiation. When the Sun's energy reaches the Earth, it is primarily in the form of visible light, which is absorbed by the Earth's surface. This energy is then re-radiated in the form of infrared radiation, which is associated with heat. Infrared radiation has longer wavelengths than visible light and is not visible to the human eye, but it plays a crucial role in the Earth's energy balance. The Planet absorbs solar energy during the day and releases it at night as infrared radiation, which contributes to the earth's temperature regulation. In contrast, ultraviolet radiation is mostly absorbed by the ozone layer and does not reach the Earth's surface in significant amounts, while microwaves are generally used for communication and do not play a substantial role in the Earth's radiative properties. Visible light, while influential in warming the planet, does not provide the primary mechanism for re-radiation of heat energy back into space. Thus, infrared effectively captures this process of energy absorption and re-emission.

10. What substance is primarily responsible for the erosion process that forms caves?

A. Granite

B. Limestone

C. Basalt

D. Sandstone

Limestone is primarily responsible for the erosion process that forms caves due to its solubility in acidic water. When rainwater mixes with carbon dioxide in the atmosphere and soil, it forms a weak carbonic acid. This acidic water can easily dissolve limestone, which is primarily composed of calcium carbonate. Over time, the continuous dissolution of limestone creates underground cavities and passages, leading to the formation of caves. In contrast, granite, basalt, and sandstone are less susceptible to chemical weathering because they are harder and less reactive with acidic solutions. Granite, a hard igneous rock, does not dissolve like limestone does, nor does it have the same capacity to form solution caves. Basalt, also an igneous rock, generally forms different types of landforms and is not typically involved in the formation of caves. Sandstone, while it can erode, does not undergo the same chemical weathering process that is responsible for cave formation in limestone. Thus, the unique properties of limestone make it the primary rock type associated with the cave formation process.

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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://texes-science.examzify.com

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

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