PRAXIS II GENERAL SCIENCE (5435) 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 16

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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. A gas at constant volume is cooled. What can be concluded about the gas?

A. The volume of the gas has decreased.

B. The pressure of the gas has increased.

C. The kinetic energy of the gas molecules has decreased.

D. The number of gas molecules has increased.

2. Which layer of the Earth is made up of molten rock?

A. The crust

B. The mantle

C. The outer core

D. The inner core

3. What is true of the enzyme telomerase?

A. It repairs damaged DNA strands

B. It adds a repetitive DNA sequence to the end of chromosomes

C. It synthesizes RNA from DNA

D. It removes RNA primers from Okazaki fragments

4. Which gas is most commonly responsible for causing acid rain?

A. Nitrogen dioxide

B. Carbon dioxide

C. Sulfur dioxide

D. Ozone

5. What structures are formed when the plasma membrane engulfs a particle from outside the cell?

A. Lysosomes

B. Endocytic vesicles

C. Ribosomes

D. Peroxisomes

6. Which enzyme in DNA replication is a potential source of new mutations?

A. DNA ligase

B. RNA polymerase

C. DNA polymerase

D. Telomerase

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7. What is the most common type of star in the universe?

A. Yellow dwarf stars

B. Blue giant stars

C. Red dwarf stars

D. White dwarf stars

8. Which of the following is NOT a result of ozone layer depletion?

A. Increased skin cancer rates

B. Decreased crop yields of wheat, corn, and soybeans

C. Higher UV radiation exposure

D. Disruption of plant photosynthesis

9. What term describes the variety of life in a particular habitat or ecosystem?

A. Population

B. Community

C. Biodiversity

D. Habitat diversity

10. In an experiment determining the effect of a nonvolatile solute on boiling point, what is the independent variable?

A. The temperature of the water

B. The amount of salt added

C. The size of the container

D. The time of heating

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Answers

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

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Explanations

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1. A gas at constant volume is cooled. What can be concluded about the gas?

A. The volume of the gas has decreased.

B. The pressure of the gas has increased.

C. The kinetic energy of the gas molecules has decreased.

D. The number of gas molecules has increased.

When a gas is cooled at constant volume, the kinetic energy of the gas molecules decreases. This occurs because temperature is directly related to the average kinetic energy of the molecules in a gas. As the gas cools, the energy of the individual particles decreases, leading to a reduction in their movement and, consequently, their kinetic energy. In this scenario, the pressure of the gas would also decrease, assuming the gas follows the ideal gas law (PV=nRT), where pressure (P) is inversely related to temperature (T) when volume (V) is held constant. The volume does not change because it is specified that the gas is at constant volume, and the number of gas molecules remains constant unless there is a specific process that adds or removes molecules from the system. Thus, the correct conclusion is that the kinetic energy of the gas molecules has indeed decreased as a result of the cooling.

2. Which layer of the Earth is made up of molten rock?

A. The crust

B. The mantle

C. The outer core

D. The inner core

The mantle is the correct choice as it is primarily composed of semi-solid rock that behaves like a viscous fluid over geologic time, allowing for the movement of tectonic plates. Importantly, while the mantle contains solid rock, it also has sections that can be partially molten, especially at greater depths and in specific areas like mantle plumes. This molten aspect is significant as it plays a crucial role in processes such as magma formation, which can lead to volcanic activity. In contrast, the crust is the outermost layer of the Earth, composed of solid rock and is not molten. The outer core, while providing a significant amount of molten material, is primarily composed of liquid iron and nickel and is distinct from the mantle's rock composition. The inner core, on the other hand, is a solid layer composed primarily of iron, which remains solid due to the immense pressure at that depth. Thus, the mantle is recognized for having areas of partial melt, making it the best answer for this particular question.

3. What is true of the enzyme telomerase?

A. It repairs damaged DNA strands

B. It adds a repetitive DNA sequence to the end of chromosomes

C. It synthesizes RNA from DNA

D. It removes RNA primers from Okazaki fragments

Telomerase is an enzyme that plays a crucial role in maintaining the integrity and stability of chromosomes by adding repetitive DNA sequences known as telomeres to the ends of chromosomes. Telomeres consist of short, repeating units that protect chromosome ends from degradation and prevent them from being recognized as damaged DNA that needs to be repaired. This addition of telomere sequences helps to counteract the natural shortening that occurs with each round of DNA replication, allowing cells to divide without losing essential genetic information. Understanding the function of telomerase is essential, particularly in the context of cellular aging and cancer biology, as its activity is significantly elevated in many cancer cells, allowing them to proliferate indefinitely. This makes the role of telomerase vital in both normal cellular function and disease processes.

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4. Which gas is most commonly responsible for causing acid rain?

A. Nitrogen dioxide

B. Carbon dioxide

C. Sulfur dioxide

D. Ozone

The gas most commonly responsible for causing acid rain is sulfur dioxide. This compound is primarily produced from the burning of fossil fuels, such as coal and oil, which release sulfur oxides into the atmosphere. When sulfur dioxide enters the atmosphere, it can be oxidized and subsequently reacts with water vapor, oxygen, and other trace chemicals to form sulfuric acid. This acid is then deposited back to the Earth's surface through precipitation, leading to acid rain. Acid rain has significant environmental impacts, including harming aquatic ecosystems, damaging vegetation, and contributing to the deterioration of buildings and monuments. The formation of acid rain is a prime example of how human activities, particularly industrial processes, can lead to environmental degradation through atmospheric chemical reactions. While nitrogen dioxide and carbon dioxide can also affect environmental conditions, they do not play a direct role in the formation of acid rain to the extent that sulfur dioxide does. Nitrogen dioxide does contribute to the formation of nitric acid, which can lead to acid rain, but it is not as significant as sulfur dioxide. Ozone is a different type of pollutant that affects air quality but does not contribute to acid rain formation.

5. What structures are formed when the plasma membrane engulfs a particle from outside the cell?

A. Lysosomes

B. Endocytic vesicles

C. Ribosomes

D. Peroxisomes

When the plasma membrane engulfs a particle from the outside of the cell, it forms endocytic vesicles. This process is known as endocytosis, during which the membrane invaginates (folds inward) to enclose the particle, subsequently pinching off to create a vesicle within the cytoplasm. Endocytic vesicles play a critical role in transporting substances into the cell, allowing it to intake nutrients, hormones, or even pathogens. Other structures listed in the choices serve different functions within the cell. Lysosomes are organelles that contain enzymes for digestion of waste materials and cellular debris, but they are formed from the Golgi apparatus and not directly from the plasma membrane. Ribosomes are the sites of protein synthesis, whereas peroxisomes are organelles involved in lipid metabolism and detoxification, again not formed through the process of endocytosis. Hence, the formation of endocytic vesicles directly results from the engulfing activity of the plasma membrane.

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6. Which enzyme in DNA replication is a potential source of new mutations?

A. DNA ligase

B. RNA polymerase

C. DNA polymerase

D. Telomerase

DNA polymerase plays a crucial role in DNA replication by adding nucleotides to the growing DNA strand, ensuring that the genetic information is accurately copied from the template strand. However, during this process, it can introduce errors, such as inserting the wrong nucleotide. These errors can lead to mutations if they are not corrected by proofreading mechanisms. While DNA polymerase has a proofreading ability that helps catch and correct many of these mistakes, it is not entirely infallible. If an error is made and not corrected, it becomes a permanent change in the DNA sequence when the cell divides. Over time, accumulation of these mutations can lead to various genetic conditions or cancer. Other enzymes mentioned, such as DNA ligase, RNA polymerase, and telomerase, do not directly contribute to the creation of new mutations during DNA replication in the same way. DNA ligase primarily functions to join Okazaki fragments on the lagging strand and does not involve nucleotide incorporation. RNA polymerase is involved in the transcription process, synthesizing RNA from a DNA template, rather than DNA replication, while telomerase extends the ends of chromosomes but does not participate in the accuracy of DNA replication itself. Therefore, the inherent error-prone nature of DNA polymerase during the

7. What is the most common type of star in the universe?

A. Yellow dwarf stars

B. Blue giant stars

C. Red dwarf stars

D. White dwarf stars

The most common type of star in the universe is red dwarf stars. These stars are small, with masses less than half that of our sun, and they burn their fuel very slowly, resulting in long lifespans that can extend to tens of billions, even trillions of years. Because red dwarfs are so abundant and stable, they make up the majority of stars in our galaxy and likely in the universe as a whole. Unlike more massive stars, which have shorter life cycles, red dwarfs can endure for incredibly long periods without exhausting their hydrogen fuel quickly. This longevity and their prevalence give them the status of the most common type of star, significantly outnumbering yellow dwarfs, blue giants, and white dwarfs. Yellow dwarf stars, like our sun, are more massive and luminous but less common compared to red dwarfs. Blue giant stars are even rarer, as they are massive stars that burn through their hydrogen rapidly and exist for a much shorter duration. White dwarfs are remnants of stars that have exhausted their nuclear fuel and, while they are numerous due to stellar evolution, they don't form new stars like red dwarfs do. This understanding of stellar classification and distribution highlights the dominance of red dwarf stars in the cosmos

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8. Which of the following is NOT a result of ozone layer depletion?

A. Increased skin cancer rates

B. Decreased crop yields of wheat, corn, and soybeans

C. Higher UV radiation exposure

D. Disruption of plant photosynthesis

The depletion of the ozone layer primarily leads to an increased amount of ultraviolet (UV) radiation reaching the Earth's surface. This increase in UV radiation is linked to several environmental and health issues. One significant consequence is the rise in skin cancer rates among humans. The ozone layer serves as a protective shield, absorbing a substantial portion of the sun's harmful UV radiation. As the layer thins, more UV radiation can penetrate the atmosphere, leading to higher incidences of skin cancer due to increased exposure. Another major impact of ozone depletion is the disruption of natural processes, such as photosynthesis in plants, particularly in some sensitive species. Increased UV radiation can harm photosynthetic organisms, potentially affecting their growth and productivity. While higher UV radiation levels can potentially affect crop yields, the assertion that ozone layer depletion directly causes decreased crop yields of staple crops like wheat, corn, and soybeans is not as clearly established or direct as the other consequences mentioned. Factors influencing crop yields are multifaceted, including environmental conditions, agricultural practices, and pest control, making it less directly associated with ozone depletion than increased skin cancer and plant photosynthesis disruption. Therefore, this choice is not a result typically attributed to the effects of ozone layer depletion.

9. What term describes the variety of life in a particular habitat or ecosystem?

A. Population

B. Community

C. Biodiversity

D. Habitat diversity

The term that describes the variety of life in a particular habitat or ecosystem is biodiversity. Biodiversity encompasses all the different species, genetic variations, and ecological complexes within a specific environment. It reflects the complex interactions between organisms and their environments, contributing to the health and resilience of ecosystems. High biodiversity is often indicative of a stable and productive ecosystem, as it allows for more interactions and a broader range of responses to environmental changes. Population refers to a group of individuals of the same species living in a specific area, while community denotes all the different species that interact in a particular location. Habitat diversity refers to the variety of habitats that exist within a certain area, which plays a role in supporting biodiversity but does not directly define it. Thus, biodiversity is the most comprehensive term for understanding the variety of life in a habitat or ecosystem.

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10. In an experiment determining the effect of a nonvolatile solute on boiling point, what is the independent variable?

A. The temperature of the water

B. The amount of salt added

C. The size of the container

D. The time of heating

In an experiment designed to explore the effect of a nonvolatile solute on the boiling point, the independent variable is the factor that is deliberately manipulated to observe its impact on the dependent variable. In this context, adding different amounts of a nonvolatile solute, such as salt, directly affects the boiling point of the solvent, typically water. The nonvolatile solute influences boiling point elevation, which is a colligative property. By varying the amount of salt added, the researcher can determine how changes in solute concentration affect the boiling point. This direct manipulation allows the researcher to analyze the relationship between the concentration of the solute and the boiling point, culminating in a clearer understanding of how nonvolatile solutes alter physical properties of the solvent. The other choices represent variables that would either remain constant or change as a consequence of the manipulation of the independent variable. For instance, the temperature of the water is the dependent variable measured in response to the solute, the size of the container is typically controlled to ensure consistent conditions, and the time of heating would also remain constant to allow for fair comparison of results. Thus, the amount of salt added is correctly identified as the independent variable.

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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:

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

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