

SCIENCE OLYMPIAD GREEN GENERATION PRACTICE TEST (SAMPLE)

STUDY GUIDE



**SAMPLE STUDY GUIDE
WITH LIMITED QUESTIONS**

**VISIT US ONLINE FOR
THE FULL VERSION STUDY GUIDE**

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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. If decomposer populations were to decline, what would be a likely environmental consequence?**
 - A. Increase in soil fertility
 - B. Accumulation of dead organic matter
 - C. Enhanced nutrient cycling
 - D. Promotion of new plant growth

- 2. What can cause visibility impairment according to the effects of nitrogen oxides?**
 - A. Increased rainfall
 - B. Dry conditions
 - C. Nitrate particles and nitrogen dioxide
 - D. High humidity

- 3. Which factor is not a cause of desertification?**
 - A. Climate change
 - B. Human economic activities
 - C. Urbanization
 - D. Sustainable agricultural practices

- 4. How does thermal pollution primarily occur?**
 - A. Discharge of hot or cold water from industrial sites
 - B. Using untreated sewage in agriculture
 - C. Burning fossil fuels for energy
 - D. Excessive water diversion for irrigation

- 5. Which of the following is NOT a major type of environmental pollution?**
 - A. Air pollution
 - B. Water pollution
 - C. Soil pollution
 - D. Noise pollution

6. Which process contributes to the cloudiness of water?

- A. Filtration
- B. Eutrophication
- C. Decomposition
- D. Turbidity

7. What is the role of algae in aquatic ecosystems?

- A. They consume large amounts of carbon dioxide
- B. They produce oxygen and serve as a primary food source for various aquatic organisms
- C. They pollute the water with toxins
- D. They compete with fish for food resources

8. Which of the following best describes the concept of ecosystem services?

- A. They are services that benefit only urban areas.
- B. They represent the monetary value of natural resources.
- C. They are the benefits provided by ecosystems to humans.
- D. They only include the services of higher trophic levels.

9. What chemical is primarily responsible for ozone depletion?

- A. CFCs
- B. HCFCs
- C. Nitrous oxide
- D. Carbon dioxide

10. Which of the following is an example of a renewable resource?

- A. Coal
- B. Natural gas
- C. Wind energy
- D. Petroleum

Answers

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

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Explanations

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1. If decomposer populations were to decline, what would be a likely environmental consequence?

- A. Increase in soil fertility
- B. Accumulation of dead organic matter**
- C. Enhanced nutrient cycling
- D. Promotion of new plant growth

If decomposer populations were to decline, a likely environmental consequence would be the accumulation of dead organic matter. Decomposers, such as bacteria and fungi, play a crucial role in breaking down dead plants, animals, and organic waste. They recycle nutrients back into the ecosystem, which is essential for soil health and plant growth. With fewer decomposers, the rate of decomposition slows significantly, leading to a build-up of organic materials that would normally be broken down and utilized by other organisms. This accumulation can hinder the availability of nutrients for plants and other organisms, ultimately impacting the overall health of the ecosystem. The presence of excess dead organic matter can also affect soil oxygen levels and create an environment that is less conducive to plant growth and nutrient uptake. Thus, the decline in decomposer populations directly correlates with the accumulation of dead organic matter in the environment.

2. What can cause visibility impairment according to the effects of nitrogen oxides?

- A. Increased rainfall
- B. Dry conditions
- C. Nitrate particles and nitrogen dioxide**
- D. High humidity

Visibility impairment can be significantly affected by the presence of nitrate particles and nitrogen dioxide, which are both derivatives of nitrogen oxides. Nitrogen oxides are produced from various human activities, particularly burning fossil fuels in vehicles and power plants. When these gases enter the atmosphere, they can react with other pollutants and atmospheric components to form particulate matter, such as nitrates. Nitrate particles are particularly concerning because they can scatter light, reducing visibility in the air. Additionally, nitrogen dioxide can contribute to the formation of smog, which is a mixture of particulate matter and gases that can obscure sight. When present in significant quantities, these substances not only harm air quality but also affect how clearly we can see distances or objects under certain weather conditions. Thus, the reason why nitrate particles and nitrogen dioxide can cause visibility impairment lies in their physical properties and their ability to interact with light in a way that diminishes clarity in the atmosphere.

3. Which factor is not a cause of desertification?

- A. Climate change
- B. Human economic activities
- C. Urbanization
- D. Sustainable agricultural practices**

Desertification is the process by which fertile land becomes increasingly arid, leading to the loss of vegetation and biodiversity, often exacerbated by various environmental and human factors. Sustainable agricultural practices are designed to maintain and enhance the health of the land. They focus on methods that preserve soil structure, reduce erosion, optimize water usage, and enhance ecosystem functions. By utilizing techniques such as crop rotation, organic farming, and reduced chemical inputs, these practices aim to bolster the resilience of ecosystems against degradation, thereby countering desertification rather than contributing to it. In contrast, factors like climate change, human economic activities, and urbanization can lead to oversaturation of resources, degradation of soil quality, and depletion of vegetation, all of which can accelerate the desertification process. Therefore, while the former three can be detrimental to land health, sustainable agricultural practices work to protect and restore ecosystems, making them a key strategy in combating desertification.

4. How does thermal pollution primarily occur?

- A. Discharge of hot or cold water from industrial sites**
- B. Using untreated sewage in agriculture
- C. Burning fossil fuels for energy
- D. Excessive water diversion for irrigation

Thermal pollution primarily occurs through the discharge of hot or cold water from industrial sites, which significantly alters the natural temperature of nearby water bodies. When industrial processes use water for cooling, the heated water is often released back into rivers or lakes, raising the temperature of these ecosystems. Elevated temperatures can negatively affect aquatic organisms, reducing oxygen levels and disrupting local habitats. In contrast, cold water discharges can also be harmful, especially in ecosystems that are adapted to a specific thermal regime. This alteration can further impact species that depend on stable temperature ranges for breeding and survival. Therefore, the direct release of treated or untreated water from industrial processes is the primary mechanism through which thermal pollution occurs, highlighting the importance of managing thermal discharges in order to protect aquatic environments.

5. Which of the following is NOT a major type of environmental pollution?

- A. Air pollution
- B. Water pollution
- C. Soil pollution
- D. Noise pollution**

Noise pollution refers to the excessive or harmful levels of noise in the environment, often resulting from industrial activities, traffic, and urbanization. While it is a recognized form of pollution, it is not classified among the major types of environmental pollution when compared to air, water, and soil pollution. Air pollution involves harmful substances in the atmosphere that can affect health and ecosystems. Water pollution relates to the contamination of water bodies, impacting aquatic life and human health. Soil pollution concerns the degradation of land due to chemicals and waste. These three types are fundamental concerns because they directly affect the essential resources necessary for life and have widespread and severe impacts on the environment and human well-being. Noise pollution, while certainly an issue that can affect quality of life and health, does not have the same broad and severe implications for ecological systems and life as the other three types.

6. Which process contributes to the cloudiness of water?

- A. Filtration
- B. Eutrophication
- C. Decomposition
- D. Turbidity**

Turbidity is the correct answer because it refers to the cloudiness or haziness of a fluid caused by large numbers of individual particles that are generally invisible to the naked eye. These particles can include sediment, organic matter, and other pollutants that can affect water clarity. In natural and artificial water bodies, turbidity can arise from various sources such as soil erosion, runoff from land, and the presence of microorganisms or pollutants. In contrast, filtration is a process aimed at removing impurities from water rather than contributing to its cloudiness. Eutrophication refers to the excessive growth of algae in water bodies due to nutrient enrichment, which can subsequently lead to increased turbidity as decaying algae contribute to the cloudiness. Decomposition is the breakdown of organic matter, which can also increase turbidity, but it is a specific process rather than a direct measure or cause of cloudiness like turbidity itself. Thus, turbidity is the most direct term that describes the state of cloudiness in water.

7. What is the role of algae in aquatic ecosystems?

- A. They consume large amounts of carbon dioxide
- B. They produce oxygen and serve as a primary food source for various aquatic organisms**
- C. They pollute the water with toxins
- D. They compete with fish for food resources

Algae play a crucial role in aquatic ecosystems primarily by producing oxygen through the process of photosynthesis. During photosynthesis, algae absorb carbon dioxide and sunlight, resulting in the release of oxygen, which is essential for the survival of many aquatic organisms, including fish and invertebrates. In addition to oxygen production, algae serve as a foundational food source within these ecosystems. They are consumed by a variety of organisms, ranging from tiny zooplankton to larger fish species. This makes them integral to the food web, as they convert sunlight energy into biomass that supports higher trophic levels. The other options do not accurately reflect the primary roles of algae. Although algae can consume carbon dioxide, it is their oxygen production and role as a food source that are most significant in aquatic ecosystems. While some types of algae can produce toxins, this is not a ubiquitous characteristic of all algae, and many are benign or beneficial. Lastly, algae do not typically compete with fish for food resources; rather, they provide food for many aquatic life forms, helping maintain the balance within the ecosystem.

8. Which of the following best describes the concept of ecosystem services?

- A. They are services that benefit only urban areas.
- B. They represent the monetary value of natural resources.
- C. They are the benefits provided by ecosystems to humans.**
- D. They only include the services of higher trophic levels.

The concept of ecosystem services refers to the benefits that ecosystems provide to humans, which play a crucial role in sustaining human life and the economy. These services can be categorized into four main types: provisioning (like food and water), regulating (such as climate regulation and flood control), cultural (including recreational benefits and aesthetic enjoyment), and supporting (which encompass nutrient cycling and soil formation). Option C accurately encapsulates this definition as it emphasizes the relationship between ecosystems and the benefits they provide to human societies. This understanding highlights the importance of preserving biodiversity and healthy ecosystems to ensure that these services continue for future generations. In contrast, the other options do not correctly convey the full scope of ecosystem services. For instance, claiming that these services benefit only urban areas neglects the fundamental role that ecosystems play in all environments. Focusing solely on the monetary value of natural resources fails to recognize the intrinsic ecological functions and benefits that aren't easily quantified in economic terms. Finally, limiting ecosystem services to those of higher trophic levels ignores the contributions of lower trophic levels and other components of ecosystems that are essential for maintaining ecological balance and supporting life.

9. What chemical is primarily responsible for ozone depletion?

- A. CFCs**
- B. HCFCs
- C. Nitrous oxide
- D. Carbon dioxide

Chlorofluorocarbons (CFCs) are primarily responsible for ozone depletion because they release chlorine atoms into the atmosphere when they are broken down by ultraviolet (UV) radiation. This process occurs in the stratosphere, where CFCs rise after being emitted from various sources, such as refrigerants, aerosol propellants, and foam-blowing agents. Once CFCs reach the stratosphere, UV radiation breaks them apart, releasing chlorine that can react with ozone (O₃) molecules. One chlorine atom can destroy thousands of ozone molecules before it is removed from the atmosphere, leading to a significant thinning of the ozone layer, which is crucial for blocking harmful UV radiation from reaching the Earth's surface. While hydrofluorocarbons (HCFCs) and nitrous oxide can also contribute to ozone depletion, their impact is less severe compared to CFCs. HCFCs are considered less harmful than CFCs due to their shorter atmospheric lifetimes and lower ozone-depleting potential, but they still pose a risk. Nitrous oxide has a different pathway and is primarily a greenhouse gas, contributing to climate change and having a lesser direct effect on ozone. Carbon dioxide does not play a significant role in ozone

10. Which of the following is an example of a renewable resource?

- A. Coal
- B. Natural gas
- C. Wind energy**
- D. Petroleum

Wind energy is categorized as a renewable resource because it is derived from natural processes that are continuously replenished. Unlike fossil fuels such as coal, natural gas, and petroleum, which are finite and take millions of years to form, wind energy harnesses the kinetic energy produced by the movement of air. As long as the sun shines and the Earth rotates, wind will continue to blow, making it a sustainable and inexhaustible energy source. Utilizing wind energy involves converting the movement of air into electricity through wind turbines, which can then be used to power homes and industries without depleting resources or causing long-term environmental damage. As a clean energy resource, wind energy significantly reduces greenhouse gas emissions compared to fossil fuels, contributing positively to efforts in combating climate change. This unique characteristic distinguishes wind energy from non-renewable resources, which are harmful to both the environment and are limited in supply.

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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://sciolympiadgreengen.examzify.com>

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

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