

Grade 8 Biology Practice Test (Sample)

Study Guide



Everything you need from our exam experts!

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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. What type of symbiotic relationship does not benefit either species involved?**
 - A. Mutualism**
 - B. Commensalism**
 - C. Parasitism**
 - D. Neutralism**

- 2. Which type of respiration uses glucose to produce carbon dioxide, water, and energy when oxygen is present?**
 - A. Aerobic respiration**
 - B. Anaerobic fermentation**
 - C. Photosynthesis**
 - D. Cellular respiration**

- 3. What does the hydrosphere consist of?**
 - A. The solid ground of the Earth**
 - B. The layer of gases surrounding the Earth**
 - C. The area of the Earth filled with water**
 - D. The surface layer of the Earth**

- 4. In terms of population dynamics, how is an "open population" characterized?**
 - A. Limited migration**
 - B. Stable conditions**
 - C. Free movement of individuals into and out of the population**
 - D. Absence of resource competition**

- 5. In an ecosystem, what function do consumers play?**
 - A. They decompose organic matter**
 - B. They produce energy**
 - C. They provide energy for producers**
 - D. They consume other organisms for energy**

- 6. What is the function of the skeletal system?**
- A. To produce hormones that regulate metabolism.**
 - B. To deliver oxygen and nutrients to cells.**
 - C. To provide structure, support, and protection for the body's organs.**
 - D. To facilitate digestion and absorption of food.**
- 7. What essential gas, produced mostly by oceans and rainforests, is necessary for many organisms to breathe?**
- A. Carbon dioxide**
 - B. Amonia**
 - C. Oxygen**
 - D. Nitrogen**
- 8. What term refers to the number of individuals moving into an existing population?**
- A. Emigration**
 - B. Immigration**
 - C. Mortalities**
 - D. Populace Growth**
- 9. What type of ecological relationship is exemplified by a predator and its prey?**
- A. Symbiosis**
 - B. Competition**
 - C. Mutualism**
 - D. Predation**
- 10. What type of relationship is seen in commensalism?**
- A. Both species benefit from the relationship.**
 - B. One species benefits while the other is harmed.**
 - C. One species benefits while the other is neither helped nor harmed.**
 - D. Neither species benefits from the relationship.**

Answers

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

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Explanations

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1. What type of symbiotic relationship does not benefit either species involved?

- A. Mutualism**
- B. Commensalism**
- C. Parasitism**
- D. Neutralism**

In neutralism, neither species involved in the symbiotic relationship benefits or is harmed by the interaction. This relationship reflects an ecological scenario where two species coexist in the same environment without affecting each other's fitness or survival. For instance, two species of birds might inhabit the same type of tree but feed on different sources of food, allowing them to live in close proximity without influencing one another's populations. This contrasts with mutualism, where both species gain benefits, and commensalism, where one species benefits while the other remains unaffected. Parasitism is characterized by one species benefiting at the expense of another, leading to harm. Understanding neutralism helps illustrate the varying dynamics in ecosystems, showcasing a range of interactions between different organisms.

2. Which type of respiration uses glucose to produce carbon dioxide, water, and energy when oxygen is present?

- A. Aerobic respiration**
- B. Anaerobic fermentation**
- C. Photosynthesis**
- D. Cellular respiration**

Aerobic respiration is the correct answer because it specifically refers to the metabolic process in which organisms convert glucose into carbon dioxide and water while using oxygen. This process takes place in the mitochondria of cells and is highly efficient, producing a significant amount of energy in the form of adenosine triphosphate (ATP). During aerobic respiration, glucose is broken down in the presence of oxygen, leading to the release of energy which is essential for various cellular activities. The overall chemical equation for aerobic respiration can be summarized as:
$$\text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2 \rightarrow 6\text{CO}_2 + 6\text{H}_2\text{O} + \text{Energy (ATP)}$$
 In contrast, anaerobic fermentation occurs when oxygen is not present, leading to different end products and less energy yield. Photosynthesis, while it involves the production of glucose, is a process where light energy is converted into chemical energy in the form of glucose, rather than the breakdown of glucose. Cellular respiration, as a broader term, encompasses both aerobic and anaerobic processes, but the question specifically addresses the type that requires

3. What does the hydrosphere consist of?

- A. The solid ground of the Earth
- B. The layer of gases surrounding the Earth
- C. The area of the Earth filled with water**
- D. The surface layer of the Earth

The hydrosphere consists of all the water found on, under, and above the surface of the Earth. This includes oceans, rivers, lakes, glaciers, groundwater, and water vapor in the atmosphere. It encompasses every form of water, playing a critical role in the Earth's climate and ecosystems. The choice indicating that it is the area of the Earth filled with water correctly identifies the hydrosphere, distinguishing it from the solid ground, the atmosphere, and the surface layer, which focus on different components of the Earth system. These other options do not encompass water, which is the defining characteristic of the hydrosphere. Understanding the hydrosphere is essential, as it interacts with the lithosphere (the solid Earth) and the atmosphere (the air above) in various ecological and geological processes.

4. In terms of population dynamics, how is an "open population" characterized?

- A. Limited migration
- B. Stable conditions
- C. Free movement of individuals into and out of the population**
- D. Absence of resource competition

An "open population" is characterized by the free movement of individuals into and out of the population. This type of population allows for immigration (individuals moving into the population) and emigration (individuals leaving the population), leading to dynamic changes in population sizes. This concept is crucial in understanding how populations fluctuate due to various factors such as availability of resources, environmental changes, and human activities. In contrast, limited migration would indicate restrictions on the movement of individuals, which would not align with the characteristics of an open population. Stable conditions refer to a lack of significant changes in the environment or resources, which does not accurately describe the dynamic nature of an open population. Lastly, the absence of resource competition might suggest a relaxed environment where individuals do not compete for limited resources, but open populations can still experience competition as new individuals enter and interact within a shared habitat. Thus, the defining quality of an open population is the unrestricted movement of individuals.

5. In an ecosystem, what function do consumers play?

- A. They decompose organic matter**
- B. They produce energy**
- C. They provide energy for producers**
- D. They consume other organisms for energy**

Consumers play a crucial role in ecosystems by obtaining energy through consuming other organisms. This includes a variety of organisms such as herbivores, carnivores, and omnivores, all of which rely on different sources of food for their energy needs. In this process, consumers help maintain the balance of ecosystems by regulating the populations of producers and other consumers. For instance, herbivores consume plants (producers), while carnivores may prey on herbivores or other carnivores, thus contributing to the flow of energy and nutrients within the ecosystem. By consuming other organisms, consumers contribute to energy transfer, as they break down the organic materials and convert them into forms that can be utilized by decomposers. This interaction ultimately supports the energy pyramid, showcasing the interdependence of trophic levels within an ecosystem.

6. What is the function of the skeletal system?

- A. To produce hormones that regulate metabolism.**
- B. To deliver oxygen and nutrients to cells.**
- C. To provide structure, support, and protection for the body's organs.**
- D. To facilitate digestion and absorption of food.**

The skeletal system primarily serves the essential functions of providing structure, support, and protection for the body's organs. It is composed of bones, cartilage, and ligaments, which together form a framework that gives the body its shape and physical stability. This framework not only supports the body's overall structure but also protects vital organs; for example, the skull encases the brain, and the rib cage shields the heart and lungs. Additionally, the skeletal system plays a crucial role in facilitating movement by serving as attachment points for muscles, which contract to allow movement at joints. Other aspects of bone function include mineral storage and housing the bone marrow, where blood cells are produced. In contrast, the other functions mentioned in different choices involve other systems: the endocrine system is responsible for hormone production, the circulatory system handles the delivery of oxygen and nutrients, and the digestive system facilitates food processing and nutrient absorption.

7. What essential gas, produced mostly by oceans and rainforests, is necessary for many organisms to breathe?

- A. Carbon dioxide**
- B. Amonia**
- C. Oxygen**
- D. Nitrogen**

Oxygen is crucial for the survival of many organisms because it is a key component of cellular respiration, the process by which cells convert glucose and oxygen into energy, carbon dioxide, and water. Most complex life forms, including humans, rely on oxygen to produce the energy needed for various bodily functions. Oceans and rainforests are significant contributors to the Earth's oxygen supply through the process of photosynthesis. During photosynthesis, plants, algae, and some bacteria use sunlight to convert carbon dioxide and water into glucose and oxygen. This oxygen is then released into the atmosphere, making it available for organisms to breathe. Understanding the vital role of oxygen emphasizes the importance of preserving these ecosystems, as their health directly affects the abundance of oxygen available in the environment.

8. What term refers to the number of individuals moving into an existing population?

- A. Emigration**
- B. Immigration**
- C. Mortalities**
- D. Populace Growth**

The term that describes the number of individuals moving into an existing population is immigration. This process involves organisms entering a new habitat or area, contributing to the growth of an existing population. Immigration can affect population size and dynamics by bringing in new genetic material, which can enhance genetic diversity, and possibly increasing the resilience of the population to environmental changes. In contrast, emigration refers to individuals leaving a population to inhabit another area, which would typically lead to a decrease in population size. Mortalities refers to deaths within a population, which can also diminish population numbers. The term populace growth is more general and does not specifically relate to the movement of individuals into a population. Understanding these terms is crucial for studying population ecology and managing biodiversity effectively.

9. What type of ecological relationship is exemplified by a predator and its prey?

- A. Symbiosis**
- B. Competition**
- C. Mutualism**
- D. Predation**

The relationship between a predator and its prey is accurately described as predation. In this ecological interaction, one organism, the predator, hunts, captures, and consumes another organism, the prey. This relationship is fundamental to food webs and ecosystems, as it helps to regulate population dynamics and maintain the balance within an environment. Predation affects both the predator and the prey populations: predators can control the abundance of prey species, which can in turn influence the overall health of the ecosystem. This relationship is distinct from others, such as symbiosis, which involves close interactions between species that can be mutualistic, commensal, or parasitic. Understanding predation is crucial for studying food chains and ecological interactions, as it showcases how energy is transferred through ecosystems and highlights the importance of both predators and prey in maintaining ecological balance.

10. What type of relationship is seen in commensalism?

- A. Both species benefit from the relationship.**
- B. One species benefits while the other is harmed.**
- C. One species benefits while the other is neither helped nor harmed.**
- D. Neither species benefits from the relationship.**

In commensalism, one species benefits while the other is neither helped nor harmed. This type of relationship is characterized by an interaction where one organism derives some benefit, such as food, shelter, or support, from another organism, while the second organism remains unaffected by the relationship. An example of commensalism can be seen with barnacles that attach to the shell of a turtle. The barnacles benefit by gaining access to a larger habitat that helps them filter-feed, while the turtle is hardly affected by their presence. This distinguishes commensalism from other types of relationships. In mutualism, both species benefit, whereas in parasitism, one species benefits at the expense of the other, causing harm. Since commensalism specifically describes a neutral impact on one of the organisms involved, it reinforces the understanding that not all interactions in ecosystems result in benefit or harm for both parties.

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://grade8biology.examzify.com>

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

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