

9TH GRADE BIOLOGY SOL PRACTICE TEST (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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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. Which term describes the interaction of organisms for obtaining resources such as food and habitat?**
 - A. Predation
 - B. Succession
 - C. Food web
 - D. Competition

- 2. The hypothesis that evolution of a species occurs in periods of rapid change separated by little or no change is called**
 - A. Gradualism
 - B. Uniformitarianism
 - C. Catastrophism
 - D. Punctuated equilibrium

- 3. Mutualism is best described as**
 - A. One species benefits while the other is harmed.
 - B. The interaction has no effect on either species.
 - C. Both species are harmed.
 - D. Both species benefit from the interaction.

- 4. If an organism is unicellular and autotrophic, to which kingdom is it most commonly assigned?**
 - A. Protista
 - B. Monera
 - C. Fungi
 - D. Plantae

- 5. Biotic factors include which of the following?**
 - A. Water
 - B. Temperature
 - C. Living organisms
 - D. Weather patterns

6. A compound that is being dissolved is called a ____.
- A. Solvent
 - B. Solute
 - C. Solution
 - D. Solubility
7. An organism that makes its own food from inorganic sources is called a(n) ____.
- A. Heterotroph
 - B. Consumer
 - C. Autotroph
 - D. Decomposer
8. Which statement best defines coevolution?
- A. Evolution occurs only within a single species.
 - B. Two species evolve in response to each other over time.
 - C. Coevolution means one species causes the extinction of the other.
 - D. Evolution happens only due to abiotic factors.
9. Analogous structures are best defined as:
- A. Evolved from a common ancestor and have the same structure
 - B. Share a common evolutionary origin and similar structure
 - C. Have identical DNA sequences
 - D. Evolved separately; created differently but serve the same purpose
10. Which term best describes organisms that break down dead matter and recycle nutrients?
- A. Decomposer
 - B. Detritivore
 - C. Scavenger
 - D. Producer

Answers

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

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Explanations

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1. Which term describes the interaction of organisms for obtaining resources such as food and habitat?

- A. Predation
- B. Succession
- C. Food web
- D. Competition**

Competition is the interaction where organisms vie for limited resources like food and living space. This overlap in needs can happen between members of the same species or between different species, shaping who gets access to resources and driving adaptations such as resource partitioning or changes in behavior. For example, two squirrels trying to gather acorns or plants growing in the same area competing for sunlight illustrate competition in action. Predation involves one organism hunting and consuming another, which is about feeding relationships rather than shared resource use. Succession is the gradual change in the composition of a community over time after a disturbance. A food web maps who eats whom in an ecosystem, showing energy transfer, but it's not the specific interaction where organisms compete for the same limited resources.

2. The hypothesis that evolution of a species occurs in periods of rapid change separated by little or no change is called

- A. Gradualism
- B. Uniformitarianism
- C. Catastrophism
- D. Punctuated equilibrium**

The pattern of evolutionary change: whether it happens in steady, gradual steps or in short bursts. The best description here says evolution occurs in rapid spurts separated by long periods of little or no change. This idea, called punctuated equilibrium, means species mostly stay the same for long times (stasis) and new forms arise quickly when conditions change or isolation occurs, producing noticeable change in a relatively short era. By contrast, gradualism envisions slow, continuous change over long periods; uniformitarianism is a geological principle about slow, ongoing processes shaping Earth over time; catastrophism focuses on sudden, dramatic events causing rapid changes but not the recurring pattern of long stability with brief rapid shifts. So the rapid-change-with-long-stasis pattern fits punctuated equilibrium.

3. Mutualism is best described as

- A. One species benefits while the other is harmed.
- B. The interaction has no effect on either species.
- C. Both species are harmed.
- D. Both species benefit from the interaction.**

Mutualism describes a relationship where both species benefit from each other, boosting each partner's fitness. For example, bees get nectar from flowers, while flowers gain help with pollination. Clownfish find protection among sea anemones, and the anemones may benefit from cleaning and nutrient scraps the fish provide. In the human body, gut bacteria help digest food and produce vitamins, while we offer a stable habitat and resources. This is different from relationships where one species is harmed or where the effect on one is neutral.

4. If an organism is unicellular and autotrophic, to which kingdom is it most commonly assigned?

A. Protista

B. Monera

C. Fungi

D. Plantae

The main idea here is how scientists group organisms by cellular structure and how they obtain energy. A single-celled organism that can make its own food is typically a unicellular photosynthetic eukaryote, like many algae. Protista is the kingdom that is used for such organisms in many intro biology courses because they are single-celled and eukaryotic, and many are autotrophic. Plantae, by contrast, are multicellular and organized into tissues; Fungi are mostly heterotrophic decomposers; Monera covers prokaryotic organisms, which lack a true nucleus. Since the description points to a one-celled photosynthetic organism, Protista is the best fit.

5. Biotic factors include which of the following?

A. Water

B. Temperature

C. Living organisms

D. Weather patterns

Biotic factors are the living parts of an environment—the organisms themselves and how they interact. This includes plants, animals, fungi, bacteria, and the relationships among them, like predation, decomposition, and symbiosis. Abiotic factors are the nonliving parts, such as water, temperature, and weather patterns. In the options given, water and weather patterns describe nonliving aspects, while living organisms describe the living components. So, the best choice is the one that refers to living organisms.

6. A compound that is being dissolved is called a ____.

A. Solvent

B. Solute

C. Solution

D. Solubility

The compound that is being dissolved is the solute. In a mixture, the solute is the substance that gets dissolved, while the substance doing the dissolving is the solvent, and together they form a solution. For example, when sugar dissolves in water, sugar is the solute and water is the solvent, resulting in a sugar-water solution. Solubility is simply a property's measure of how much solute can dissolve in a given amount of solvent under specific conditions.

7. An organism that makes its own food from inorganic sources is called a(n)

- _____
- A. Heterotroph
- B. Consumer
- C. Autotroph**
- D. Decomposer

Autotrophs are organisms that convert inorganic materials into organic food. They capture energy from light (photosynthesis) or from chemical reactions with inorganic substances (chemosynthesis) to turn carbon dioxide and water into organic molecules like glucose. This ability to make their own organic matter is what bases the food chain, with plants, algae, and many bacteria as examples. Other options describe organisms that obtain energy by eating other organisms (heterotrophs and consumers) or by breaking down dead material (decomposers), which does not involve making organic molecules from inorganic inputs.

8. Which statement best defines coevolution?

- A. Evolution occurs only within a single species.
- B. Two species evolve in response to each other over time.**
- C. Coevolution means one species causes the extinction of the other.
- D. Evolution happens only due to abiotic factors.

Coevolution is when two species influence each other's evolution over time through their interactions. When one species develops a new trait, it changes the selective pressures on its partner, and that partner responds with its own adaptations, leading to a cycle of reciprocal changes. A classic example is flowering plants and their pollinators: plants evolve traits like bright colors and nectar rewards to attract pollinators, while pollinators evolve features that let them access the nectar more efficiently. Predator and prey pairs also show this back-and-forth evolution, with each side gaining improvements that push the other to adapt again. This idea stands apart from evolution happening in just one species, or evolution driven only by nonliving factors, or the notion that one species must drive the other to extinction.

9. Analogous structures are best defined as:

- A. Evolved from a common ancestor and have the same structure
- B. Share a common evolutionary origin and similar structure
- C. Have identical DNA sequences
- D. Evolved separately; created differently but serve the same purpose**

Analogous structures come from convergent evolution: different species facing similar challenges independently evolve features that perform the same function. They look different in origin or internal makeup because they come from separate lineages, yet they end up solving the same environmental problem. That's why wings in birds, bats, and insects all enable flight despite not sharing a recent common wing-building ancestor—the structures evolved separately to serve the same purpose. In contrast, traits that come from a common ancestor or rely on the same genes would fit other concepts, not analogous structures. So the idea that these features evolved separately, were created differently, but serve the same purpose best defines analogies.

10. Which term best describes organisms that break down dead matter and recycle nutrients?

A. Decomposer

B. Detritivore

C. Scavenger

D. Producer

Breaking down dead matter and recycling nutrients is done by decomposers. These organisms secrete enzymes that break apart the large, complex molecules in dead organisms and waste into simpler, usable nutrients, releasing them back into the soil, water, or atmosphere for other organisms to use. Fungi and many bacteria are classic examples, turning litter and waste into forms that plants can absorb again. Detritivores, like earthworms, help by physically fragmenting material, but the key idea here is the chemical breakdown and recycling of nutrients, which is the specialty of decomposers. Scavengers feed on decaying matter but don't primarily break it down to recycle nutrients, and producers create their own organic matter from energy sources.

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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://9thradebiologysol.examzify.com>

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

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