

# LIFE SCIENCE PRACTICE EXAM (SAMPLE)

**STUDY GUIDE**



## **SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS**

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<https://lifescience.examzify.com>



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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. An organism that gets energy by eating other organisms**
  - A. Producer
  - B. Consumer
  - C. Decomposer
  - D. Food chain
- 2. Which molecule is reduced during the light-dependent reactions and carries electrons?**
  - A. ATP.
  - B. Oxygen.
  - C. NADPH.
  - D. G3P.
- 3. Reproductive structures of gymnosperms are called?**
  - A. Cones
  - B. Zygote
  - C. Ovule
  - D. Pollination
- 4. Which coordinates timing of heartbeat?**
  - A. AV node
  - B. SA node
  - C. His-Purkinje system
  - D. Atrial tissue
- 5. Which term refers to a chromosome that determines an individual's sex?**
  - A. Autosomal chromosome
  - B. Mutation
  - C. Sex chromosome
  - D. Species

- 6. Which term represents a mechanism that explains how a certain outcome occurs?**
- A. Fossil
  - B. Mechanism
  - C. Adaptation
  - D. Scientific theory
- 7. Which term best describes a relationship in which both participants benefit?**
- A. Parasitism
  - B. Invasive species
  - C. Extinction
  - D. Mutualism
- 8. Key ethical concern in genetic engineering?**
- A. Potential unintended consequences, ecological impact, and issues of consent, equity, and access.
  - B. The cost of technology.
  - C. The speed of editing.
  - D. Ethical concerns do not exist.
- 9. The struggle between organisms for resources.**
- A. Niche
  - B. Predation
  - C. Competition
  - D. Symbiosis
- 10. A structure that protects and helps disperse seeds.**
- A. Zygote
  - B. Fruit
  - C. Ovule
  - D. Germination



## **Answers**

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

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## **Explanations**

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### 1. An organism that gets energy by eating other organisms

- A. Producer
- B. Consumer**
- C. Decomposer
- D. Food chain

*In ecosystems, energy moves from producers to consumers. A consumer is an organism that gets energy by eating other organisms, whether plants or animals, so herbivores, carnivores, and omnivores fit this description. Producers, by contrast, make their own energy through photosynthesis or chemosynthesis, so they don't rely on eating others. Decomposers obtain energy by breaking down dead material and waste, recycling nutrients rather than directly consuming living organisms. A food chain is a simple way to depict who eats whom, not an organism itself.*

### 2. Which molecule is reduced during the light-dependent reactions and carries electrons?

- A. ATP.
- B. Oxygen.
- C. NADPH.**
- D. G3P.

*In the light-dependent reactions, electrons are energized by light and passed along the photosynthetic electron transport chain until they are donated to NADP<sup>+</sup>, forming NADPH. This NADPH is the reduced form of NADP<sup>+</sup> and serves as the electron carrier that delivers reducing power to the Calvin cycle in the stroma. Oxygen is produced when water is split, not reduced. ATP is generated to provide energy, while G3P is a product of the Calvin cycle, not a direct output of the light reactions. So the molecule that gets reduced and carries electrons through this stage is NADPH.*

### 3. Reproductive structures of gymnosperms are called?

- A. Cones**
- B. Zygote
- C. Ovule
- D. Pollination

*Gymnosperms reproduce using cones, also called strobili, as their reproductive structures. These cones can be male, bearing pollen, or female, housing ovules on their scales; after pollen reaches an ovule and fertilization occurs, seeds form on the cone. The zygote is the fertilized cell, not the structure itself, the ovule is the structure inside the cone that becomes a seed, and pollination is the event of pollen transfer. So, the reproductive structures are cones.*

#### 4. Which coordinates timing of heartbeat?

- A. AV node**
- B. SA node
- C. His-Purkinje system
- D. Atrial tissue

*The timing of a heartbeat is set by the sinoatrial node, the natural pacemaker of the heart. Its pacemaker cells spontaneously generate impulses at a regular rate, establishing the heart's rhythm. The impulse then travels through atrial tissue to the atrioventricular (AV) node, which adds a brief delay. That delay coordinates atrial contraction with ventricular contraction so the ventricles fill properly before they pump. After the delay, the impulse moves through the His-Purkinje system to rapidly activate the ventricles for synchronized contraction. Atrial tissue mainly serves to conduct and support atrial contraction, not to set the pace. So the primary source that coordinates the heartbeat timing is the SA node, with the AV node refining the sequence by providing the necessary delay.*

#### 5. Which term refers to a chromosome that determines an individual's sex?

- A. Autosomal chromosome
- B. Mutation
- C. Sex chromosome**
- D. Species

*Sex is determined by chromosomes, and the chromosome responsible for this trait is called the sex chromosome. In humans and many other organisms, these are the X and Y chromosomes: typically XX lines up with female development and XY with male development, though other species can have different systems. The sex chromosomes stand out from autosomal chromosomes, which are the non-sex chromosomes that carry the majority of genes but don't determine whether an individual is male or female. A mutation is a change in DNA and isn't about which chromosome determines sex, while species is simply a level of biological classification.*

#### 6. Which term represents a mechanism that explains how a certain outcome occurs?

- A. Fossil
- B. Mechanism**
- C. Adaptation
- D. Scientific theory

*Mechanisms describe the step-by-step processes or causal sequences that produce an outcome. They answer the "how" question by detailing the interactions, triggers, and paths that link cause to effect. In biology, you might point to how a signaling pathway activates a cellular response, how enzymes catalyze reactions, or how genetic regulation leads to a trait. That focus on the actual process makes mechanism the best fit for explaining how something occurs. Fossils are preserved remains and don't explain the process; an adaptation is a trait shaped by evolution, not the explanatory process itself; a scientific theory is a broad, well-supported framework, not the specific mechanism behind a single outcome.*

**7. Which term best describes a relationship in which both participants benefit?**

- A. Parasitism
- B. Invasive species
- C. Extinction
- D. Mutualism**

*In ecology, a mutualistic relationship describes an interaction in which both participants benefit. Each partner provides something the other needs—such as pollinators gaining nectar while helping plants reproduce, or nitrogen-fixing bacteria supplying usable nitrogen to plant roots in exchange for carbohydrates. Because both sides gain something valuable, this is the best term for describing a two-way benefit. By contrast, parasitism involves one organism benefiting at the expense of the other; invasive species are organisms that disrupt ecosystems rather than define a two-way beneficial interaction; and extinction is the disappearance of a species. Some mutualisms are obligate, meaning the partners rely on each other for survival, while others are facultative, where the relationship is advantageous but not essential.*

**8. Key ethical concern in genetic engineering?**

- A. Potential unintended consequences, ecological impact, and issues of consent, equity, and access.**
- B. The cost of technology.
- C. The speed of editing.
- D. Ethical concerns do not exist.

*The main idea here is that ethical questions about genetic engineering focus on responsibility for potential consequences and fairness, not just what the technology can do. Engineered changes can have unintended outcomes—traits we didn't anticipate or interactions within ecosystems that ripple beyond the modified organism. Ecological impact is a key worry because engineered traits could spread or disrupt balance in natural environments, affecting non-target species and ecosystem services. Consent, equity, and access also matter. Decisions about using these powerful tools affect people and places beyond the lab, including communities that might bear risks or gain benefits, and future generations who cannot consent to today's edits. If these ethical considerations aren't addressed, the technology could cause harm or widen social inequalities even when the scientific results look promising. While cost and speed are important practical factors and governance seeks to manage them, they don't capture the full ethical landscape as comprehensively as concerns about unintended consequences, ecological risk, and fairness. The statement that there are no ethical concerns is not accurate.*

**9. The struggle between organisms for resources.**

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

*Competition is the struggle between organisms for limited resources such as food, water, space, or mates. When resources are scarce, multiple individuals or species rely on the same resource, and their growth, survival, or reproduction can be affected as they vie for it. This interaction helps shape which organisms flourish in a given environment and can lead to outcomes like resource partitioning or competitive exclusion over time. Niche refers to the role and set of resources a species uses in its environment, including where it lives and how it obtains what it needs, while predation is a relationship where one organism feeds on another, and symbiosis is a long-term close association that can be beneficial, neutral, or harmful. The statement focuses specifically on the struggle for shared resources, which is the essence of competition.*

**10. A structure that protects and helps disperse seeds.**

- A. Zygote
- B. Fruit**
- C. Ovule
- D. Germination

*The concept here is how a plant structure protects seeds and helps spread them. A fruit forms from the ovary after fertilization and encases the seeds, providing a protective covering during development and after maturity. Fruits often have features that promote dispersal, such as appealing textures and flavors to attract animals who eat them and later disperse the seeds, or dry parts that hitch rides on fur or drift with the wind. This dual role of protection plus dispersal is what makes fruit the best answer. Zygote refers to the fertilized egg that will develop into the embryo, not a protective dispersal structure. An ovule is the structure inside the flower that contains the egg and, after fertilization, becomes a seed. Germination is the process by which a seed begins to grow into a new plant.*

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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](mailto:hello@examzify.com).

Or visit your dedicated course page for more study tools and resources:

<https://lifescience.examzify.com>

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

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