

BIOLOGY MYA 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	15

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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 organelle is the site of photosynthesis in plant cells?**
 - A. Chloroplasts
 - B. Mitochondria
 - C. Golgi
 - D. Lysosomes
- 2. Cells that lack proper control of the cell cycle and can invade other tissues are referred to as**
 - A. Cancer cells
 - B. Normal cells
 - C. Stem cells
 - D. Quiescent cells
- 3. Which enzyme connects Okazaki fragments on the lagging strand by forming covalent bonds?**
 - A. DNA ligase
 - B. RNA primase
 - C. Base pairs
 - D. Hydrogen bond
- 4. What do we call an individual who carries one recessive allele but usually shows the dominant trait?**
 - A. Carrier
 - B. Pedigree
 - C. Autosomal
 - D. Sex-linked trait
- 5. Which term describes the global sum of all ecosystems, including living and nonliving components?**
 - A. Biosphere
 - B. Ecosystem
 - C. Biome
 - D. Habitat

- 6. What is the simple sugar that serves as the basic subunit of carbohydrates?**
- A. Monosaccharide
 - B. Amino acid
 - C. Polymer
 - D. Lipid
- 7. Movement of a chemical through the biological and geological parts of an ecosystem is called what?**
- A. Biogeochemical cycle
 - B. Hydrologic cycle
 - C. Predation
 - D. Habitat
- 8. Which model links organisms by their feeding relationships?**
- A. Food chain
 - B. Food web
 - C. Nutrient cycle
 - D. Ecosystem
- 9. Which term refers to the expressed portions of a gene that code for proteins?**
- A. Exons
 - B. Introns
 - C. Promoters
 - D. UTRs
- 10. What is the pathway of water from the atmosphere to Earth's surface, below ground, and back to the atmosphere?**
- A. Biogeochemical cycle
 - B. Hydrologic cycle
 - C. Energy pyramid
 - D. Population density

Answers

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

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Explanations

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1. Which organelle is the site of photosynthesis in plant cells?

A. Chloroplasts

B. Mitochondria

C. Golgi

D. Lysosomes

Photosynthesis in plant cells occurs in chloroplasts, organelles that contain the green pigment chlorophyll. These structures capture light energy and drive the reactions that convert carbon dioxide and water into glucose and oxygen. The light-dependent reactions happen on the thylakoid membranes, producing ATP and NADPH, which then power the Calvin cycle in the stroma to make sugar. This is different from mitochondria, which generate ATP through respiration, and from Golgi and lysosomes, which handle processing and breakdown of cellular materials rather than photosynthesis.

2. Cells that lack proper control of the cell cycle and can invade other tissues are referred to as

A. Cancer cells

B. Normal cells

C. Stem cells

D. Quiescent cells

Uncontrolled growth with the ability to invade other tissues describes cancer cells. These cells have mutations that disrupt normal cell-cycle controls, so they keep dividing despite signals to stop, and they often lose the adhesion and tissue boundaries that keep cells in place. They also acquire changes that let them break through surrounding structures and spread to new locations (metastasis). Normal cells are tightly regulated and respect tissue boundaries; stem cells can divide but are controlled and usually remain within their developmental context; quiescent cells are sitting in a non-dividing, resting state. So the description aligns with cancer cells, which combine unchecked proliferation with invasive behavior.

3. Which enzyme connects Okazaki fragments on the lagging strand by forming covalent bonds?

A. DNA ligase

B. RNA primase

C. Base pairs

D. Hydrogen bond

Joining the short pieces on the lagging strand requires a covalent bond to stitch the backbone together. After primers are laid and each fragment is extended, the gaps between adjacent Okazaki fragments are joined by DNA ligase, which catalyzes the formation of phosphodiester bonds between the adjacent 3' end of one fragment and the 5' end of the next. This covalent linkage converts a series of fragments into a continuous strand. In contrast, RNA primase just lays down the RNA primers, so it doesn't seal the fragments. Base pairs and hydrogen bonds are the non-covalent interactions that stabilize the DNA double helix, not the covalent backbone connection between fragments.

4. What do we call an individual who carries one recessive allele but usually shows the dominant trait?

- A. Carrier**
- B. Pedigree
- C. Autosomal
- D. Sex-linked trait

Carrier status for a recessive allele means having one dominant and one recessive allele for a gene. The dominant allele masks the recessive one, so the person typically shows the dominant trait. But the recessive allele is still present and can be passed to offspring, which is why carriers are important in predicting inheritance of recessive conditions. This differs from a pedigree, which is simply a diagram of family relationships showing how traits are inherited; autosomal refers to the location of the gene on a non-sex chromosome, and sex-linked traits involve genes on the sex chromosomes and their inheritance patterns.

5. Which term describes the global sum of all ecosystems, including living and nonliving components?

- A. Biosphere**
- B. Ecosystem
- C. Biome
- D. Habitat

The global sum of all ecosystems, including living and nonliving components, is the biosphere. Think of the biosphere as the entire life-supporting envelope of Earth—the air, water, soil, climate, and all the living organisms that interact within them across every corner of the planet. It covers every ecosystem from deep oceans to high mountains and everything in between, because it's about life and the physical systems that sustain it on a planetary scale. An ecosystem refers to a local system where a community interacts with its immediate environment; a biome is a very large regional type defined by climate and predominant life; a habitat is the specific place where an organism lives. So, only the biosphere conveys the idea of the whole planet's life-supporting system.

6. What is the simple sugar that serves as the basic subunit of carbohydrates?

- A. Monosaccharide**
- B. Amino acid
- C. Polymer
- D. Lipid

The basic subunit of carbohydrates is a monosaccharide, a single sugar unit. Monosaccharides are the simplest carbohydrates and serve as the building blocks for more complex carbohydrates. When monosaccharides join, they form disaccharides (two sugars) or polysaccharides (many sugars). Examples like glucose, fructose, and galactose illustrate these single-sugar units that can be linked together to create larger carbohydrate molecules. Amino acids are the building blocks of proteins, not carbohydrates. A polymer is a general term for a large molecule made of repeating units, which can describe carbohydrates when they form long chains, but it isn't the simplest sugar itself. Lipids are a separate class of biomolecules and are not sugars.

7. Movement of a chemical through the biological and geological parts of an ecosystem is called what?

- A. Biogeochemical cycle**
- B. Hydrologic cycle
- C. Predation
- D. Habitat

Biogeochemical cycles describe how a chemical moves through living organisms and the nonliving parts of the environment. Elements like carbon, nitrogen, and phosphorus cycle between biotic components (plants, animals, microbes) and abiotic components (air, water, soil, rocks) through processes such as photosynthesis, respiration, decomposition, mineral weathering, and nutrient uptake. This interconnected movement links biology and geology, showing how matter is recycled in ecosystems. The hydrologic cycle focuses specifically on water's movement through evaporation, condensation, precipitation, and runoff, not the movement of all chemicals. Predation involves feeding relationships, and habitat is the physical place where organisms live, not the cycling of elements.

8. Which model links organisms by their feeding relationships?

- A. Food chain**
- B. Food web
- C. Nutrient cycle
- D. Ecosystem

Understanding how energy moves in a community is captured by showing who eats whom. A food web does this by connecting many species through feeding relationships, creating a network of energy pathways from producers up to apex consumers and including omnivores and decomposers. It reflects the complexity of real ecosystems where organisms have multiple food sources and predators. In contrast, a food chain describes a single, linear sequence of feeding—someone eats someone else, in a straight line—so it doesn't capture the many interconnections. A nutrient cycle tracks the movement of chemical elements like carbon and nitrogen through air, water, soil, and organisms, not feeding connections. An ecosystem refers to the whole system, including abiotic factors, but the specific model that links organisms by feeding relationships is the food web.

9. Which term refers to the expressed portions of a gene that code for proteins?

- A. Exons**
- B. Introns
- C. Promoters
- D. UTRs

Exons are the expressed portions of a gene that code for proteins. In genes, exons and introns are initially transcribed, but introns are removed during RNA processing while exons are joined to form the mature mRNA. This mature mRNA is then translated into a protein. Promoters regulate where transcription starts and aren't part of the final mRNA, while untranslated regions (UTRs) are transcribed but not translated into protein; they help regulate translation and mRNA stability. So the protein-coding, expressed segments are the exons.

10. What is the pathway of water from the atmosphere to Earth's surface, below ground, and back to the atmosphere?

A. Biogeochemical cycle

B. Hydrologic cycle

C. Energy pyramid

D. Population density

The hydrologic cycle describes how water moves through the atmosphere, the surface, and below ground, and back into the atmosphere. Water is lifted from bodies of water by evaporation and from plants by transpiration, then it condenses into clouds and falls as precipitation. Once on land, water can infiltrate soil and rock to become groundwater or flow over the surface as runoff into rivers and lakes. This liquid water at the surface can evaporate again, continuing the cycle. This pathway specifically tracks water's journey through air, land, and underground back to air. Biogeochemical cycles involve multiple elements, not just water; the energy pyramid maps energy transfer among trophic levels; population density is a measure of how many organisms live in a given area.

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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://biologymya.examzify.com>

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

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