Biology Marking Period 3 Practice Test (Sample)

Study Guide

BY EXAMZIFY

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

1. Which feature is NOT common to plant, animal, and bacterial cells?

A. Mitochondria

B. DNA

C. Cytoplasm

D. Cell membrane

2. Which feature is characteristic of plant cells?

A. Have a cell wall

B. Lack chloroplasts

C. Have a flexible shape

D. Are prokaryotic

3. Which term is defined by the phrase 'a living thing'?

A. Organ

B. Organism

C. Tissue

D. Cell

4. Which statement describes typical bacterial cells?

A. Have a nucleus

B. Contain mitochondria

C. No nucleus

D. Are multicellular

5. What does the Golgi apparatus do?

A. Produces energy

B. Detoxifies chemicals

C. Breaks down waste

D. Packages and ships proteins

6. What does the rough ER do?

A. Detoxifies chemicals

B. Packages proteins

C. The rough ER helps produce proteins.

D. Stores energy

7. What does an energy pyramid illustrate?

A. All trophic levels have the same amount of energy.

B. Energy decreases upward, with producers at the bottom and top predators at the top.

C. Energy increases at higher trophic levels.

D. Only the top predator uses energy from producers.

8. Which statement about energy transfer is true?

A. Energy moves equally through all trophic levels.

B. Energy is stored entirely in biomass at higher levels.

C. Each transfer is 100% efficient.

D. Only about 10% of energy is transferred to the next level because most energy is used for metabolism, movement, growth, reproduction, and heat loss.

9. Which factor is biotic?

A. Predators

B. Soil pH

C. Sunlight

D. Temperature

10. Which statement about eukaryotes is true?

A. Eukaryotes have a nucleus and are usually multicellular.

B. Eukaryotes lack a nucleus.

C. Eukaryotes have no membrane-bound organelles.

D. Eukaryotes reproduce only by spores.

Answers

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

Explanations

1. Which feature is NOT common to plant, animal, and bacterial cells?

A. Mitochondria

B. DNA

C. Cytoplasm

D. Cell membrane

The feature being tested is which cell component is missing in bacteria but present in plant and animal cells. Mitochondria are membrane-bound organelles that power eukaryotic cells by producing ATP through cellular respiration. Plants and animals have mitochondria, but bacteria—being prokaryotes—do not have any membrane-bound organelles like mitochondria. In contrast, DNA is present in all cells (though bacteria have a circular chromosome in the cytoplasm, not a nucleus), the cytoplasm fills the cell interior in all three, and the cell membrane is the enclosing boundary for all. So mitochondrial presence is not common to all three cell types.

2. Which feature is characteristic of plant cells?

A. Have a cell wall

B. Lack chloroplasts

C. Have a flexible shape

D. Are prokaryotic

Plants have a cell wall, a stiff layer that surrounds the plasma membrane and is made of cellulose. This wall makes plant cells rigid, giving tissues their structured shape and helping the plant stay upright. This feature distinguishes them from animal cells, which lack a cell wall and therefore have more flexible shapes. While plant cells are eukaryotic and typically contain chloroplasts for photosynthesis, the presence of the cell wall is the characteristic feature that stands out.

3. Which term is defined by the phrase 'a living thing'?

A. Organ

B. Organism

C. Tissue

D. Cell

The main idea here is how we name living things versus their parts. An organism is a living thing that can carry out life processes. It can be a single-celled creature like bacteria or a complex multicellular being like a human. The other terms describe parts of an organism: a cell is the basic unit of life, a tissue is a group of similar cells performing a function, and an organ is a structure made of tissues that carries out a specific job. So the phrase “a living thing” points to an organism because it refers to the whole living entity, whether it’s one cell or many cells working together.

4. Which statement describes typical bacterial cells?

A. Have a nucleus

B. Contain mitochondria

C. No nucleus

D. Are multicellular

Bacteria are prokaryotes, so their DNA is not enclosed by a nuclear membrane. Instead, their genetic material sits in the cytoplasm in a region called the nucleoid, and they lack membrane-bound organelles like mitochondria. Because of this, bacterial cells are typically unicellular. Statements about having a nucleus or containing mitochondria describe eukaryotic cells, and while some bacteria can form surface communities, they are not multi- cellular organisms in the same way as complex multicellular life. The defining feature here is the absence of a nucleus.

5. What does the Golgi apparatus do?

A. Produces energy

B. Detoxifies chemicals

C. Breaks down waste

D. Packages and ships proteins

The Golgi apparatus acts as the cell's packaging and dispatch center for proteins and lipids. It receives cargo from the endoplasmic reticulum, where proteins are made, and then it modifies them (such as adding sugar tags), sorts them, and packs them into vesicles. These vesicles then deliver the molecules to their final destinations—outside the cell, to the plasma membrane, or to lysosomes and other organelles. This dispatch role is what sets it apart from mitochondria (which generate energy), the smooth ER and peroxisomes (which detoxify chemicals), and lysosomes (which break down waste). So it's the packaging and shipping of proteins that best fits the Golgi's function.

6. What does the rough ER do?

A. Detoxifies chemicals

B. Packages proteins

C. The rough ER helps produce proteins.

D. Stores energy

The rough endoplasmic reticulum is studded with ribosomes, which makes it the site where new proteins are synthesized. As ribosomes build polypeptide chains, these chains are threaded into the ER lumen or inserted into the ER membrane, guided by signal sequences. Inside the ER, the proteins begin to fold and may receive initial modifications with help from chaperone proteins. Once properly folded, they're packed into transport vesicles that bud from the ER and carry the proteins to the Golgi apparatus for further processing and sorting to their final destinations, such as secretion, incorporation into membranes, or lysosomes. Detoxification is mainly a job of the smooth ER, and storing energy is handled by mitochondria (and chloroplasts in plants), so those roles don't fit the rough ER's function. Therefore, describing it as helping produce proteins is the best answer.

7. What does an energy pyramid illustrate?

A. All trophic levels have the same amount of energy.

B. Energy decreases upward, with producers at the bottom and top predators at the top.

C. Energy increases at higher trophic levels.

D. Only the top predator uses energy from producers.

Energy moves through an ecosystem in a one-way flow from the sun to producers and then through successive feeding levels. At each step, only a portion of the energy is stored in the next level; much of the rest is lost as heat from metabolic processes, daily activity, and undigested material. Because of this continual loss, energy available declines as you move upward from producers at the base to herbivores, then to carnivores, and finally to top predators. That's why the base has the most energy and the top has the least. The statement that best fits this pattern is that energy decreases upward, with producers at the bottom and top predators at the top. The other ideas—equal energy at all levels, energy increasing higher up, or only the top predator using energy from producers—don't reflect how energy actually flows through ecosystems.

8. Which statement about energy transfer is true?

A. Energy moves equally through all trophic levels.

B. Energy is stored entirely in biomass at higher levels.

C. Each transfer is 100% efficient.

D. Only about 10% of energy is transferred to the next level because most energy is used for metabolism, movement, growth, reproduction, and heat loss.

When energy moves from one trophic level to the next, most of it is used to power life processes rather than being carried forward as usable biomass. Organisms must fuel cellular respiration, movement, digestion, growth, and reproduction, and a lot of energy is lost as heat during these processes. Because of this, only a fraction—about 10% on average—of the energy available at one level becomes new biomass at the next level. This is why energy pyramids slope upward and higher levels tend to have less energy and fewer individuals. The 10% rule is an average; the exact amount can vary, but energy transfer is never 100% efficient, and energy is not stored entirely in biomass at higher levels.

9. Which factor is biotic?

A. Predators

B. Soil pH

C. Sunlight

D. Temperature

Biotic factors are the living parts of an environment that shape how ecosystems function. Predators are living organisms that interact with other organisms by hunting and feeding, which directly affects prey populations, community structure, and energy flow. That living aspect is what makes predators biotic. In contrast, soil pH is a chemical property of the soil, sunlight is energy from the sun, and temperature is a physical condition of the environment. All of these are nonliving, or abiotic, factors.

10. Which statement about eukaryotes is true?

A. Eukaryotes have a nucleus and are usually multicellular.

B. Eukaryotes lack a nucleus.

C. Eukaryotes have no membrane-bound organelles.

D. Eukaryotes reproduce only by spores.

Think about what sets eukaryotes apart: they have a true nucleus enclosed by a membrane and internal compartments formed by membrane-bound organelles like mitochondria and the Golgi apparatus. This organization enables complex cellular functions and supports multicellular life in many lineages, such as animals, plants, and fungi. That combination—nucleus plus membrane-bound organelles and the tendency toward multicellularity—is why this statement is true. It wouldn't be true that eukaryotes lack a nucleus or lack membrane-bound organelles, since those features define them and distinguish them from prokaryotes. And while some eukaryotes can reproduce by spores, many do not rely solely on spores, so "reproduce only by spores" isn't universally accurate.

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://biologymarkingperiod3.examzify.com

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