

FLORIDA BIOLOGY EOC PRACTICE TEST (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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THE FULL VERSION STUDY GUIDE

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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. What type of selection favors individuals at both extremes of a trait?**
 - A. Stabilizing selection
 - B. Directional selection
 - C. Disruptive selection
 - D. Neutral selection
- 2. What do vacuoles store?**
 - A. Food, water, and minerals
 - B. Proteins and enzymes
 - C. Chlorophyll
 - D. Cell wall materials
- 3. What term describes the attraction between two unlike substances?**
 - A. Adhesion
 - B. Capillary Action
 - C. Cohesion
 - D. Dissolution
- 4. What determines the phenotype of an organism?**
 - A. The interaction of its genotype with the environment
 - B. Only its genetic makeup
 - C. The number of chromosomes in its cells
 - D. The environment alone
- 5. What term describes a diagram that organizes organisms based on the physical traits of their ancestors and descendants?**
 - A. Phylogenetic tree
 - B. Cladogram
 - C. Dendrogram
 - D. Taxonomy chart
- 6. What type of bonds hold the two strands of a DNA molecule together?**
 - A. Covalent bonds
 - B. Ionic bonds
 - C. Hydrogen bonds
 - D. Disulfide bonds

7. When water freezes and expands, what effect does this have on its density?

- A. Freezing makes water more dense
- B. Freezing makes water less dense
- C. Freezing does not change density
- D. Freezing only affects density in saltwater

8. What is a mutation?

- A. A change in cell structure
- B. A change in chromosome number
- C. A change in a cell's genetic material
- D. Uncontrolled cell division

9. What is the role of the circulatory system?

- A. Regulating body temperature
- B. Transporting nutrients, gases, and waste products
- C. Facilitating digestion
- D. Providing structural support

10. Which term describes the presence of more than two alleles for one gene?

- A. Codominance
- B. Multiple alleles
- C. Polygenic inheritance
- D. Sex-linked traits

Answers

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

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Explanations

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1. What type of selection favors individuals at both extremes of a trait?

- A. Stabilizing selection
- B. Directional selection
- C. Disruptive selection**
- D. Neutral selection

Disruptive selection is the type of natural selection that favors individuals at both extremes of a trait while selecting against the average or intermediate phenotypes. This process can lead to increased variation in a population by promoting the survival and reproduction of extreme forms. For example, in a habitat where both very large and very small seeds are available but medium-sized seeds are scarce, birds with beaks that are either very small or very large would be better adapted to obtain food compared to those with medium-sized beaks. Over time, this could result in a population with more individuals exhibiting extreme beak sizes as opposed to the average beak size. This contrasts with stabilizing selection, which favors individuals with intermediate traits, and directional selection, which favors individuals at one extreme. Furthermore, neutral selection does not favor any particular trait or phenotype, allowing those traits to drift in frequency without selection pressure. Hence, disruptive selection is significant in generating diversity within a population by favoring traits that are not typically common in the average individuals of that population.

2. What do vacuoles store?

- A. Food, water, and minerals**
- B. Proteins and enzymes
- C. Chlorophyll
- D. Cell wall materials

Vacuoles are essential organelles found in both plant and animal cells, primarily responsible for storing various substances. The correct answer highlights that vacuoles store food, water, and minerals, which is crucial for cellular functions and overall homeostasis. In plant cells, vacuoles often occupy a large portion of the cell's volume and play a significant role in maintaining turgor pressure, which helps support the plant structure. They can also store nutrients and waste products, contributing to the cell's metabolic processes and health. The options referencing proteins and enzymes, chlorophyll, and cell wall materials do not accurately describe the primary function of vacuoles. While chlorophyll is stored in chloroplasts, proteins and enzymes are typically synthesized in ribosomes and processed in the endoplasmic reticulum rather than stored in vacuoles. Cell wall materials are primarily related to the synthesis of substances like cellulose, which occurs in specialized areas of the cell rather than being stored in vacuoles. Thus, the role of vacuoles as storage sites for food, water, and minerals is integral to understanding their function in cellular biology.

3. What term describes the attraction between two unlike substances?

- A. Adhesion**
- B. Capillary Action
- C. Cohesion
- D. Dissolution

The term that describes the attraction between two unlike substances is adhesion. This phenomenon occurs when different types of molecules or surfaces interact and stick together. For instance, when water molecules come into contact with a surface, such as glass, the water adheres to the surface due to the attraction between water molecules and the molecules of the glass. Understanding adhesion is crucial in various biological processes. For example, it plays a significant role in how water moves through plant tissues, as well as in the formation of droplet shapes on different surfaces. In contrast, cohesion is the attraction between similar molecules, which is a different process that involves the sticking together of water molecules themselves. Capillary action is a result of both adhesion and cohesion but specifically refers to the movement of liquid within narrow spaces against external forces like gravity. Dissolution describes the process by which a solute dissolves in a solvent, which does not specifically relate to the attraction between unlike substances.

4. What determines the phenotype of an organism?

- A. The interaction of its genotype with the environment**
- B. Only its genetic makeup
- C. The number of chromosomes in its cells
- D. The environment alone

The phenotype of an organism is determined by the interaction of its genotype with the environment. The genotype refers to the genetic makeup of the organism, including the alleles present, while the environment encompasses all external factors that can influence expression of those genes, such as temperature, nutrition, and exposure to certain chemicals or conditions. For example, a plant might have the genetic potential to grow tall (genotype), but if it is grown in poor soil (environment), it may not reach that height. Conversely, two plants with identical genotypes may look different if they are grown in different environments, illustrating how environmental factors can affect the expression of genes. This concept highlights the importance of both genetic and environmental influences in shaping observable traits, or phenotypes, in organisms. Understanding this interaction is key to the field of genetics and developmental biology. It also underscores that phenotype cannot be attributed solely to genetics or environmental factors independently; rather, it is the result of a dynamic interplay between the two.

5. What term describes a diagram that organizes organisms based on the physical traits of their ancestors and descendants?

- A. Phylogenetic tree**
- B. Cladogram
- C. Dendrogram
- D. Taxonomy chart

A phylogenetic tree is a diagram that shows the evolutionary relationships between organisms based on their physical traits. A cladogram is a type of phylogenetic tree, so it is not the most accurate term for this type of diagram. A dendrogram is also a type of phylogenetic tree that shows relationships between organisms, but it typically focuses on statistical analysis and does not necessarily consider evolutionary relationships. A taxonomy chart is a diagram that shows the classification of organisms into different categories, such as kingdom, phylum, class, etc. While this information can be helpful in understanding the relationships between organisms, it is not specifically based on physical traits. Thus, it is not the most accurate term for this type of diagram.

6. What type of bonds hold the two strands of a DNA molecule together?

- A. Covalent bonds
- B. Ionic bonds
- C. Hydrogen bonds**
- D. Disulfide bonds

The correct choice identifies hydrogen bonds as the forces that hold the two strands of a DNA molecule together. In the double helix structure of DNA, the two strands are composed of a backbone formed by sugar and phosphate groups that are linked by covalent bonds. However, the strands are paired through complementary nitrogenous bases (adenine with thymine and guanine with cytosine) that are held together by hydrogen bonds. These hydrogen bonds are crucial because they provide enough stability to keep the two strands aligned while still allowing for the strands to separate easily during processes such as replication and transcription. This feature is vital for the functions of DNA, allowing it to store genetic information and facilitate its transfer during cell division and protein synthesis. The relatively weaker nature of hydrogen bonds compared to covalent bonds is what makes the unwinding of DNA simpler during these processes, while still maintaining the integrity of the genetic code.

7. When water freezes and expands, what effect does this have on its density?

- A. Freezing makes water more dense
- B. Freezing makes water less dense**
- C. Freezing does not change density
- D. Freezing only affects density in saltwater

When water freezes and expands, it forms a crystalline structure that takes up more space than liquid water. This expansion causes the density of ice to be less than the density of liquid water. Therefore, when water freezes, it becomes less dense, making option B the correct answer. Option A is incorrect because freezing water actually makes it less dense, not more dense. Option C is incorrect because freezing does change the density of water. Option D is incorrect because the density of water changes when it freezes regardless of whether it is freshwater or saltwater.

8. What is a mutation?

- A. A change in cell structure
- B. A change in chromosome number
- C. A change in a cell's genetic material**
- D. Uncontrolled cell division

A mutation is specifically defined as a change in a cell's genetic material. This encapsulates alterations in the DNA sequence that can occur for various reasons, including errors during DNA replication, exposure to radiation, or chemical influences. Mutations can affect individual genes or larger segments of DNA and can lead to variations in traits among organisms. By understanding that a mutation affects genetic information, we see that it often has a direct impact on the functioning of proteins and can ultimately influence an organism's phenotype. This is why the emphasis on genetic material is critical; mutations are the fundamental drivers of genetic diversity, evolution, and sometimes disease. The options provided that refer to changes in cell structure, chromosome number, or uncontrolled cell division do relate to biological processes, but they do not accurately capture the essence of what a mutation specifically is. While changes in chromosome number could be related to genetic mutations, they are considered a separate category of genetic alteration.

9. What is the role of the circulatory system?

- A. Regulating body temperature
- B. Transporting nutrients, gases, and waste products**
- C. Facilitating digestion
- D. Providing structural support

The circulatory system plays a vital role in transporting nutrients, gases, and waste products throughout the body. This system, primarily composed of the heart, blood, and blood vessels, ensures that oxygen is delivered to tissues and organs while carbon dioxide and other metabolic wastes are carried away for excretion. Nutrients absorbed from the digestive tract are also distributed via the bloodstream to cells that require them for energy, growth, and repair. By continuously circulating blood through the body, the circulatory system maintains homeostasis, helping to regulate various bodily functions and ensuring that cells receive the essential substances they need to operate effectively. This transport mechanism is crucial for sustaining life and supporting numerous physiological processes. Other options, while important functions in the body, do not directly describe the primary role of the circulatory system.

10. Which term describes the presence of more than two alleles for one gene?

- A. Codominance
- B. Multiple alleles**
- C. Polygenic inheritance
- D. Sex-linked traits

The term that describes the presence of more than two alleles for one gene is "multiple alleles." In genetics, while most genes have only two alleles (one inherited from each parent), some genes can have three or more alternative forms, contributing to a broader variety of phenotypes within a population. A classic example of multiple alleles is the ABO blood type system in humans, where the presence of alleles A, B, and O leads to four possible blood types. Codominance refers to a situation where two alleles are expressed equally in a heterozygous individual, rather than indicating the number of alleles for a gene. Polygenic inheritance involves multiple genes influencing a trait, leading to a continuous range of phenotypes, rather than focusing on a single gene with multiple alleles. Sex-linked traits pertain to genes located on sex chromosomes, which can exhibit patterns of inheritance that are different from other traits but do not address the concept of having multiple alleles for a single gene.

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://floridabiologyeoc.examzify.com>

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

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