

ACC BIOLOGY ACCUPLACER PRACTICE TEST (SAMPLE)

STUDY GUIDE



Prepare with structure. Pass with confidence



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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	16

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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 is a molecule that consists of two or more different elements called?

- A. Element
- B. Compound
- C. Mixture
- D. Isotope

2. Which part of the microscope is used to focus light on the specimen?

- A. Eyepiece
- B. Objective lens
- C. Condenser
- D. Diaphragm

3. What component of the cell membrane is crucial for its fluidity and flexibility?

- A. Cholesterol
- B. Phospholipids
- C. Proteins
- D. Carbohydrates

4. Which molecule is the main energy currency of the cell?

- A. DNA
- B. RNA
- C. ATP (adenosine triphosphate)
- D. Glucose

5. What is a characteristic of reversible reactions?

- A. They can easily be reversed under normal conditions
- B. They require a catalyst to change direction
- C. They are not influenced by temperature
- D. They only occur in solid-state

- 6. What term describes the bonds formed when two or more atoms join together?**
- A. Covalent bonds
 - B. Ionic bonds
 - C. Molecules
 - D. Isotopes
- 7. Which structure directs the formation of the mitotic spindle during cell division?**
- A. Centrioles
 - B. Mitochondria
 - C. Golgi apparatus
 - D. Ribosomes
- 8. What is generated during the light reaction of photosynthesis?**
- A. ATP and NADPH
 - B. Glucose and oxygen
 - C. Pyruvate and acetyl coenzyme A
 - D. Carbon dioxide and water
- 9. What happens to the catalyst at the end of a chemical reaction?**
- A. It is converted into a product
 - B. It remains intact and can be reused
 - C. It becomes a reactant
 - D. It is destroyed
- 10. What term describes the membrane-bound structures found within a cell?**
- A. Cytoplasmic organelles
 - B. Cell membranes
 - C. Cell walls
 - D. Prokaryotic structures

Answers

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

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Explanations

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1. What is a molecule that consists of two or more different elements called?

- A. Element
- B. Compound**
- C. Mixture
- D. Isotope

A molecule made up of two or more different elements is referred to as a compound. This definition comes from the fact that compounds are formed when atoms of different elements chemically combine in fixed proportions, resulting in a substance that has distinct properties separate from those of its constituent elements. For instance, water (H₂O) is a compound made up of hydrogen and oxygen atoms. In contrast, an element is a pure substance that cannot be broken down into simpler substances by chemical means and consists of only one type of atom. A mixture involves two or more substances that are physically combined, where each substance retains its individual properties. An isotope refers to atoms that have the same number of protons but different numbers of neutrons, which relates specifically to variations of individual elements rather than combinations of different elements.

2. Which part of the microscope is used to focus light on the specimen?

- A. Eyepiece
- B. Objective lens
- C. Condenser**
- D. Diaphragm

The condenser is the part of the microscope responsible for focusing light on the specimen. It is located below the stage and works to concentrate light from the light source onto the specimen, enhancing the clarity and brightness of the image being viewed. By altering the position of the condenser, a user can adjust the focus of the light, which is crucial for optimal illumination and resolving details in the specimen. The eyepiece serves primarily to magnify the image produced by the objective lens and is used for viewing. The objective lens magnifies the specimen, but it does not focus the light; instead, it captures the light that has already been directed towards the specimen. The diaphragm, on the other hand, controls the amount of light that reaches the specimen, but it does not focus that light. Understanding the specific function of each component is essential for using the microscope effectively and gaining clear observations of biological specimens.

3. What component of the cell membrane is crucial for its fluidity and flexibility?

- A. Cholesterol
- B. Phospholipids**
- C. Proteins
- D. Carbohydrates

The component of the cell membrane that is crucial for its fluidity and flexibility is cholesterol. Cholesterol molecules are interspersed within the phospholipid bilayer and play a significant role in maintaining the membrane's structural integrity across varying temperatures. They help to stabilize the membrane, preventing it from becoming too rigid at lower temperatures and too fluid at higher temperatures. This balancing act is essential for the proper functioning of the cell, as it ensures that the membrane remains adaptable to changes while still protecting the cell's internal environment. Phospholipids also contribute to the fluid nature of the membrane, forming the basic structure of the bilayer, but it is the presence of cholesterol that fine-tunes the fluidity and flexibility, allowing the cell membrane to function effectively in different conditions. Therefore, while phospholipids provide the foundational layer, cholesterol is the key player in modulating fluidity and flexibility.

4. Which molecule is the main energy currency of the cell?

- A. DNA
- B. RNA
- C. ATP (adenosine triphosphate)**
- D. Glucose

Adenosine triphosphate, or ATP, is the main energy currency of the cell. It plays a crucial role in energy transfer within cells, acting as a universal energy carrier that powers various biochemical reactions. ATP consists of an adenosine molecule attached to three phosphate groups. The energy stored in the bonds between the phosphate groups can be released when these bonds are broken, particularly the bond between the second and third phosphate groups, resulting in adenosine diphosphate (ADP) and an inorganic phosphate. Cells utilize ATP to fuel essential processes such as muscle contraction, nerve impulse propagation, and biosynthesis of macromolecules. This ability to drive cellular activities is why ATP is often referred to as the "energy currency" – similar to how money is used to facilitate transactions, ATP provides the necessary energy to complete cellular tasks. While DNA and RNA are vital nucleic acids involved in genetic information storage and protein synthesis, they are not directly involved in energy transfer. Glucose is a primary energy source and can be metabolized to produce ATP, but glucose itself is not used directly as an energy currency within the cell. Instead, it is the breakdown of glucose that ultimately leads to the synthesis of ATP, emphasizing the unique role of

5. What is a characteristic of reversible reactions?

- A. They can easily be reversed under normal conditions**
- B. They require a catalyst to change direction
- C. They are not influenced by temperature
- D. They only occur in solid-state

Reversible reactions are characterized by their ability to proceed in both the forward and reverse directions under certain conditions. The correct understanding is that they can easily be reversed under normal conditions, which is a fundamental trait of such reactions. This means that the products can react to form the original reactants, and this process can happen spontaneously, depending on the specific conditions like temperature and concentration. While it is true that catalysts can influence the rate of reactions, reversible reactions do not necessarily require a catalyst to change direction; they can occur spontaneously in either direction as long as the conditions are favorable. Temperature, concentration, and pressure can all influence the position of equilibrium in reversible reactions, showing that temperature does play a significant role. Moreover, reversible reactions can occur in various states of matter, including gas, liquid, and solid, rather than being restricted to solely solid-state. Understanding these characteristics is crucial as they highlight the dynamic nature of chemical equilibrium and the reversibility of certain chemical processes.

6. What term describes the bonds formed when two or more atoms join together?

- A. Covalent bonds
- B. Ionic bonds
- C. Molecules**
- D. Isotopes

The term that best describes the bonds formed when two or more atoms join together is "molecules." A molecule is defined as a group of two or more atoms that are chemically bonded together, which can occur through different types of bonding, such as covalent or ionic bonds. In this context, the term "molecules" emphasizes the end result of these atomic connections, which are stable entities made up of bonded atoms. While covalent and ionic bonds refer to specific types of chemical bonds between atoms, they do not collectively describe the broader concept of what happens when atoms join. Covalent bonds involve the sharing of electrons between atoms, and ionic bonds involve the transfer of electrons, leading to the attraction between positively and negatively charged ions. "Isotopes" refers to variants of a chemical element that have the same number of protons but different numbers of neutrons, which is unrelated to the concept of atom bonding. Thus, "molecules" accurately captures the idea of multiple atoms coming together to form a unified structure, making it the most appropriate term in this context.

7. Which structure directs the formation of the mitotic spindle during cell division?

- A. Centrioles**
- B. Mitochondria
- C. Golgi apparatus
- D. Ribosomes

The structure responsible for directing the formation of the mitotic spindle during cell division is the centrioles. Centrioles are cylindrical organelles located near the nucleus in animal cells. They are part of the centrosome, which plays a crucial role in organizing the microtubules that make up the mitotic spindle. During cell division, specifically in mitosis, the centrioles replicate and move to opposite poles of the cell. They help orchestrate the assembly of the microtubules that form the spindle apparatus, which is essential for separating the sister chromatids and ensuring that each daughter cell receives an accurate number of chromosomes. This spindle apparatus connects to the chromosomes at their kinetochores, facilitating their movement during anaphase. In contrast, mitochondria are primarily involved in energy production, the Golgi apparatus processes and packages proteins and lipids, and ribosomes are the sites of protein synthesis. These structures do not play a direct role in forming the mitotic spindle, highlighting the specific function of centrioles in this critical aspect of cell division.

8. What is generated during the light reaction of photosynthesis?

- A. ATP and NADPH**
- B. Glucose and oxygen
- C. Pyruvate and acetyl coenzyme A
- D. Carbon dioxide and water

During the light reactions of photosynthesis, the primary products formed are ATP and NADPH. These reactions occur in the thylakoid membranes of chloroplasts, where sunlight is absorbed by chlorophyll molecules. The energy from this light is used to split water molecules (photolysis) into oxygen, protons, and electrons. The released electrons travel through the electron transport chain, leading to the synthesis of ATP through chemiosmosis and the reduction of NADP⁺ to form NADPH. ATP serves as an energy carrier, while NADPH acts as a reducing agent, providing the necessary electrons and hydrogen for the subsequent light-independent reactions (Calvin cycle) where carbon dioxide is fixed into glucose. Thus, ATP and NADPH are crucial for converting light energy into chemical energy, which is used in the synthesis of carbohydrates. The other options listed do not accurately represent the products generated in the light reactions. For example, glucose and oxygen are produced in the later stages of photosynthesis, specifically during the Calvin cycle. Pyruvate and acetyl coenzyme A are products of cellular respiration, not photosynthesis, while carbon dioxide and water are reactants in the overall process of photosynthesis rather than products of the light reactions.

9. What happens to the catalyst at the end of a chemical reaction?

- A. It is converted into a product
- B. It remains intact and can be reused**
- C. It becomes a reactant
- D. It is destroyed

In a chemical reaction, a catalyst is a substance that accelerates the reaction without being consumed or permanently altered in the process. At the end of the reaction, the catalyst remains chemically unchanged and can be reused in subsequent reactions. This characteristic of catalysts allows them to facilitate multiple reactions over time without the need for replenishment, making them essential for many biological processes and industrial applications. This is in contrast to the other options. A catalyst does not become a product, meaning the first choice is incorrect. It also does not turn into a reactant or become destroyed in the reaction, which eliminates the last two alternatives. Thus, the correct statement regarding a catalyst's role is that it remains intact and available for further use after the reaction has occurred.

10. What term describes the membrane-bound structures found within a cell?

A. Cytoplasmic organelles

B. Cell membranes

C. Cell walls

D. Prokaryotic structures

The term that accurately describes the membrane-bound structures found within a cell is cytoplasmic organelles. These organelles are specialized structures that perform distinct functions vital to the cell's operations. Examples of cytoplasmic organelles include the nucleus, mitochondria, endoplasmic reticulum, and Golgi apparatus, each playing critical roles in processes such as energy production, protein synthesis, and transporting molecules within the cell. Cell membranes refer to the lipid bilayer that surrounds the entire cell, providing a barrier and facilitating communication and transport; however, they are not membrane-bound structures inside the cell itself. Cell walls are rigid structures that provide support and protection, typically found in plants, fungi, and some prokaryotes, but they are not present in animal cells and do not classify as intracellular organelles. Prokaryotic structures generally refer to components of prokaryotic cells (like bacteria), which lack membrane-bound organelles, distinguishing them from eukaryotic cells. The focus here on cytoplasmic organelles highlights their vital role and unique characteristics within eukaryotic cells.

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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://accbioaccuplacer.examzify.com>

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

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