

COLLEGE BIOLOGY EXAM 1 PRACTICE TEST (SAMPLE)

STUDY GUIDE



Prepare with structure. Pass with confidence



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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. The branch of biology that names and classifies species into a hierarchy of broader groups is called?**
 - A. Ecology
 - B. Taxonomy
 - C. Genetics
 - D. Anatomy
- 2. A chemical breakdown of a compound due to reaction with water**
 - A. Hydrolysis
 - B. Hydration
 - C. Dehydration synthesis
 - D. Oxidation
- 3. ____ is made possible by input of energy, transformation of energy from one form to another**
 - A. Energy
 - B. Matter
 - C. Life
 - D. Growth
- 4. What are linked by peptide bonds to form polypeptide chains?**
 - A. Nucleotides
 - B. Amino acids
 - C. Monosaccharides
 - D. Fatty acids
- 5. Which term is described as the main fuel for cellular work?**
 - A. Disaccharide
 - B. Protein
 - C. Polysaccharide
 - D. Monosaccharide

6. Bacteria have which kind of cell type?

- A. Prokaryotic
- B. Eukaryotic
- C. Both
- D. None

7. Something that looks the same

- A. Divergent
- B. Homogeneous
- C. Similar
- D. Monogomus

8. Complex with nucleus and membrane bound organelle- can be unicellular or multicellular

- A. Prokaryote
- B. Eukaryote
- C. Virus
- D. Bacterium

9. Which kingdom is characterized by organisms that are typically decomposers and have chitin in their cell walls?

- A. Protista
- B. Plantae
- C. Animalia
- D. Fungi

10. Which kingdom obtains food by ingesting and digesting other organisms (heterotrophs)?

- A. Plants
- B. Protists
- C. Fungi
- D. Animals

Answers

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

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Explanations

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1. The branch of biology that names and classifies species into a hierarchy of broader groups is called?

- A. Ecology
- B. Taxonomy**
- C. Genetics
- D. Anatomy

Taxonomy is the science that names and classifies organisms, placing them into a nested hierarchy such as species, genus, family, order, class, phylum, kingdom, and domain. This system lets us organize life and show how closely related different organisms are, often using a unique two-part name for each species (binomial nomenclature). The other fields focus on different questions: ecology studies how organisms interact with each other and their environment, genetics examines heredity and gene variation, and anatomy looks at the structure of organisms. So taxonomy specifically addresses naming and ordering species into broader groups, which is why it's the correct choice.

2. A chemical breakdown of a compound due to reaction with water

- A. Hydrolysis**
- B. Hydration
- C. Dehydration synthesis
- D. Oxidation

Hydrolysis is the chemical breakdown of a compound caused by reaction with water. In hydrolysis, a water molecule donates a hydrogen to one fragment and an hydroxyl group to another, effectively cleaving a covalent bond and splitting the molecule into smaller parts. This is common in biology during digestion, where enzymes catalyze the addition of water to break peptide bonds in proteins, glycosidic bonds in carbohydrates, or ester bonds in lipids. Hydration, by contrast, means water molecules simply associate with a substance without breaking its covalent bonds, which can change solubility or structure but doesn't split the molecule. Dehydration synthesis is the opposite process, where two molecules covalently join with the removal of a water molecule. Oxidation involves electron transfer or changes in oxidation state and is not defined by reaction with water to break a molecule.

3. ____ is made possible by input of energy, transformation of energy from one form to another

- A. Energy
- B. Matter
- C. Life**
- D. Growth

Life is made possible by input of energy and the transformation of energy from one form to another because all cellular work depends on metabolism. Metabolism includes breaking down molecules to release energy and using that energy to build or move things, keep conditions stable, and reproduce. For example, photosynthesis captures light energy and stores it as chemical energy in glucose, which is then converted into ATP during respiration to power processes like muscle movement, active transport, and biosynthesis. Growth needs energy to assemble new macromolecules and expand cell size and number. Without continual energy input and its transformation, living systems cannot maintain their organized state. That's why life is the best fit here.

4. What are linked by peptide bonds to form polypeptide chains?

- A. Nucleotides
- B. Amino acids**
- C. Monosaccharides
- D. Fatty acids

Peptide bonds are the links that hold amino acids together to form polypeptide chains. This bond forms when the carboxyl group of one amino acid reacts with the amino group of the next amino acid, releasing a molecule of water in a dehydration synthesis. The resulting covalent bond, an amide linkage, stitches amino acids into a polymer with a repeating backbone. The order of amino acids creates the primary structure, which then folds into functional proteins. Nucleotides, by contrast, are joined by phosphodiester bonds to form nucleic acids; monosaccharides join by glycosidic bonds to make polysaccharides; fatty acids and glycerol connect by ester bonds to form lipids.

5. Which term is described as the main fuel for cellular work?

- A. Disaccharide
- B. Protein
- C. Polysaccharide
- D. Monosaccharide**

Monosaccharide. Cells rely on simple sugars, especially glucose, as the immediate fuel for energy production. Glucose can enter glycolysis directly, get split and oxidized to generate ATP through subsequent steps in cellular respiration. Disaccharides and polysaccharides must first be broken down into monosaccharides before they can be used, so they're not as readily available for quick energy. Proteins can be used for energy only after other roles and additional processing, so they're not the primary energy source.

6. Bacteria have which kind of cell type?

- A. Prokaryotic**
- B. Eukaryotic
- C. Both
- D. None

Bacteria have prokaryotic cells. That means they lack a defined nucleus and other membrane-bound organelles. Their DNA is typically in a single circular chromosome located in a region called the nucleoid, and the cell is generally smaller with ribosomes of a different size than those in eukaryotes. Their cell walls, when present, commonly contain peptidoglycan. This prokaryotic organization distinguishes bacteria from eukaryotic cells, which have a nucleus and various membrane-bound organelles. (Archaea are also prokaryotes, but have distinct biochemistry.) So describing bacteria as prokaryotic cells best fits their cellular structure.

7. Something that looks the same

- A. Divergent
- B. Homogeneous
- C. Similar
- D. Monogomus**

The concept being tested is likeness in appearance. If something "looks the same," the best word is similar, which directly expresses that there is a resemblance in how things appear. Divergent describes differences or moving apart, not sameness. Monogamous pertains to mating patterns, not appearance. Homogeneous means uniform throughout, which can describe appearance in a broader sense, but it emphasizes uniform composition rather than just-looking-the-same relative to another object. So the simplest match to "looks the same" is similar.

8. Complex with nucleus and membrane bound organelle- can be unicellular or multicellular

- A. Prokaryote
- B. Eukaryote**
- C. Virus
- D. Bacterium

Having a nucleus and membrane-bound organelles is what defines a eukaryotic cell. This level of internal organization allows more complex structure and function, and eukaryotes can be either single-celled or multicellular, as seen in organisms from yeast to humans. In contrast, prokaryotes like bacteria lack a true nucleus and membrane-bound organelles, and viruses aren't cells at all—they're just genetic material inside a protein shell that must hijack a host cell to replicate. So the description best fits eukaryotes.

9. Which kingdom is characterized by organisms that are typically decomposers and have chitin in their cell walls?

- A. Protista
- B. Plantae
- C. Animalia
- D. Fungi**

Fungi are the organisms that commonly act as decomposers and have chitin in their cell walls. In ecosystems, fungi break down dead matter and recycle nutrients, a crucial role for soil health and nutrient cycling. Their cell walls are reinforced with chitin, a sturdy, nitrogen-containing polysaccharide that provides strength and protection. Among the options, fungi uniquely fit both traits: the ability to decompose efficiently and the presence of chitin in their cell walls. Protists are highly varied in both nutrition and cell wall composition, plants have cellulose walls and are primarily autotrophic, and animals lack cell walls altogether, so they don't match this combination.

10. Which kingdom obtains food by ingesting and digesting other organisms (heterotrophs)?

- A. Plants
- B. Protists
- C. Fungi**
- D. Animals

Heterotrophs obtain carbon and energy by consuming other organisms or their remains. Plants are autotrophs, making their own food through photosynthesis. Fungi feed by external digestion: they secrete enzymes into their surroundings to break down organic matter and then absorb the resulting nutrients. This extracellular digestion and nutrient absorption is a classic way fungi acquire food, illustrating heterotrophy. While animals also rely on heterotrophy through ingestion, the feeding strategy described aligns with fungi, making them the best fit for this statement.

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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://collegebiology1.examzify.com>

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

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