GMAS BIOLOGY PRACTICE TEST (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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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.

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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!

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Questions

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1. What are the three common shapes of bacteria?

A. Coccus, Rod, Spirillum

B. Bacillus, Coccus, Filament

C. Amoeba, Coccus, Spiral

D. Virus, Rod, Capsule

2. What term refers to the scale of biological organization from atoms up to populations?

A. Hierarchy

B. Scale of Complexity

C. Organization

D. Taxonomy

3. What term describes a living or non-living carrier that transmits a pathogen between hosts (for example via water, air, or animals)?

A. Reservoir

B. Fomite

C. Transmission vector

D. Droplet

4. What is the attraction between molecules of the same substance called?

A. Adhesion

B. Cohesion

C. Ionic bond

D. Covalent bond

5. Two identical chromosomes that split and contain the same genetic material.

A. Chromosomes

B. Chromatids

C. Genes

D. Nucleotides

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6. Organisms that use hydrogen sulfide or other chemicals as an energy source instead of light are called what?

A. Chemoautotrophs

B. Lithoautotrophs

C. Photoautotrophs

D. Chemoheterotrophs

7. An insecticide that is also toxic to animals and humans is known as which chemical?

A. Agent Orange

B. Roundup

C. DDT

D. Atrazine

8. Which component of a DNA nucleotide is a nitrogen-containing base?

A. Nitrogen base

B. 5-carbon sugar

C. Mutation

D. Amino acid

9. What bonds connect amino acids to form polypeptide chains?

A. Hydrogen bonds

B. Peptide bonds

C. Ionic bonds

D. Disulfide bonds

10. Which term describes a haploid reproductive cell that unites with another to form a zygote?

A. Zygote

B. Gamete

C. Chromosome

D. Allele

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Answers

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

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Explanations

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1. What are the three common shapes of bacteria?

A. Coccus, Rod, Spirillum

B. Bacillus, Coccus, Filament

C. Amoeba, Coccus, Spiral

D. Virus, Rod, Capsule

Bacteria are commonly categorized by their shape, which leads to three familiar forms: cocci (spherical), bacilli (rod-shaped), and spirilla (spiral-shaped). This trio is the standard way scientists summarize bacterial morphology, so listing cocci, rod-shaped, and spirillum covers the main basic shapes you'll encounter. The other options mix organisms or features that aren't used to describe bacterial shapes: amoeba is a different kind of single-celled organism, viruses are not bacteria, and terms like capsule or filament refer to structures or growth forms, not the basic single-cell shapes. So focusing on cocci, rod-shaped, and spirillum best represents the three common bacterial morphologies.

2. What term refers to the scale of biological organization from atoms up to populations?

A. Hierarchy

B. Scale of Complexity

C. Organization

D. Taxonomy

The main idea is how biological systems become increasingly intricate as you move from the simplest units to the largest groups. This progression from atoms to molecules, organelles, cells, tissues, organs, organ systems, organisms, and up to populations is described as the scale of complexity. It emphasizes that each step adds new properties and functions that weren't present at the previous level, reflecting the growing interconnections and emergent behaviors of life. That focus on the buildup of complexity and emergent properties at each level is why this term fits best. A hierarchy is related but centers on ranked levels rather than the depth of increasing complexity; organization is a broad, general term for how things are arranged; taxonomy is about classifying and naming organisms, not the sequence of organizational levels.

3. What term describes a living or non-living carrier that transmits a pathogen between hosts (for example via water, air, or animals)?

A. Reservoir

B. Fomite

C. Transmission vector

D. Droplet

A transmission vector is the carrier that moves a pathogen from one host to another. It can be living, like a mosquito that spreads malaria, or in broader contexts even nonliving media such as water or air that transport the pathogen to new hosts. The key idea is the role of the carrier in facilitating transfer between hosts. This is different from a reservoir, which is the environment or organism where the pathogen lives and persists, not necessarily the immediate conduit of transmission; a fomite refers to an inanimate object that can carry pathogens, and a droplet is a mode of transmission rather than the carrier itself. So the term that best matches the description of a carrier that transmits between hosts is transmission vector.

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4. What is the attraction between molecules of the same substance called?

A. Adhesion

B. Cohesion

C. Ionic bond

D. Covalent bond

The attraction between like molecules within a substance is cohesion. This is due to intermolecular forces that pull molecules toward one another. In water, for example, hydrogen bonds between molecules create cohesion, giving water high surface tension and the ability to form droplets and to move up narrow tubes via capillary action. This differs from adhesion, which is the attraction between unlike substances (water sticking to glass). Ionic and covalent bonds are chemical bonds that hold atoms together within or between molecules, not the intermolecular attractions that keep separate molecules of the same substance linked together. So cohesion is the term for the pull between molecules of the same substance.

5. Two identical chromosomes that split and contain the same genetic material.

A. Chromosomes

B. Chromatids

C. Genes

D. Nucleotides

Two identical copies that stay attached and later separate are sister chromatids. They are produced when a chromosome is replicated during S phase, creating two identical DNA molecules held together at the centromere. They stay together until anaphase of cell division, when the centromeres split and each chromatid becomes an individual chromosome going to a daughter cell. Because they come from the same DNA, they carry the same genetic information. Chromosomes, genes, and nucleotides don't fit this description as neatly. A chromosome can refer to a single piece of DNA, not necessarily a replicated pair. Genes are the functional units of heredity, not copies of DNA themselves. Nucleotides are the building blocks of DNA, not structures that split into identical copies.

6. Organisms that use hydrogen sulfide or other chemicals as an energy source instead of light are called what?

A. Chemoautotrophs

B. Lithoautotrophs

C. Photoautotrophs

D. Chemoheterotrophs

The main idea is how organisms obtain energy and carbon. If an organism uses chemical reactions for its energy instead of light, that's chemotrophy. If it also uses carbon dioxide as its carbon source, it's an autotroph. Put those together and organisms that run on chemical energy and fix CO_2 are chemoautotrophs. Hydrogen sulfide is a classic chemical energy source for this type of metabolism, so they're categorized as chemoautotrophs. Lithoautotrophs are a related, more specific group that uses inorganic electron donors like H_2S, but chemoautotrophs is the broader and most inclusive term for organisms using chemical energy to build biomass from CO_2.

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7. An insecticide that is also toxic to animals and humans is known as which chemical?

A. Agent Orange

B. Roundup

C. DDT

D. Atrazine

Understanding why certain pesticides affect non-target organisms helps explain why this particular chemical stands out. DDT is an insecticide that disrupts nerve function, making it highly effective against insects. However, it also proves toxic to many other animals and humans, which is why it has been linked to health concerns and environmental harm. It's also known for its persistence in the environment and tendency to bioaccumulate in food chains, leading to long-lasting ecological effects. The other compounds listed are not insecticides: Agent Orange is a defoliant herbicide with toxic dioxin components; Roundup and Atrazine are herbicides. So the chemical that is an insecticide and toxic to animals and humans is DDT.

8. Which component of a DNA nucleotide is a nitrogen-containing base?

A. Nitrogen base

B. 5-carbon sugar

C. Mutation

D. Amino acid

DNA nucleotides have three parts: a 5-carbon sugar (deoxyribose), a phosphate group, and a nitrogen-containing base. The base is the component that carries genetic information because its sequence encodes genes and pairs with the complementary base on the other strand (A with T, C with G). The sugar forms the backbone, and the phosphate links sugars together. A mutation is a change in the nucleotide sequence, not a structural component of the nucleotide. An amino acid is a building block of proteins, not part of DNA.

9. What bonds connect amino acids to form polypeptide chains?

A. Hydrogen bonds

B. Peptide bonds

C. Ionic bonds

D. Disulfide bonds

Peptide bonds connect amino acids to form polypeptide chains. This covalent bond forms when the amino group of one amino acid reacts with the carboxyl group of the next, releasing a water molecule in a dehydration synthesis. This linkage creates the protein's backbone and allows the amino acid sequence to extend into a long chain. Other interactions, like hydrogen bonds, ionic bonds, and disulfide bridges, influence folding and stability but do not join the amino acids in the main chain. Hydrogen bonds stabilize secondary structures, ionic bonds form between charged side chains, and disulfide bonds link cysteine residues to stabilize tertiary or quaternary structures.

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10. Which term describes a haploid reproductive cell that unites with another to form a zygote?

A. Zygote

B. Gamete

C. Chromosome

D. Allele

Haploid reproductive cells that unite to form a zygote are called gametes. They carry a single set of chromosomes and come together during fertilization to restore the diploid chromosome number in the zygote. In animals, sperm and eggs are both gametes; in plants, pollen and ovules serve the same role. The zygote, by contrast, is the fertilized cell that results from this union and is diploid. A chromosome is the DNA-containing structure within cells, not a cell type, and an allele is a version of a gene, not a cell. So the term that fits the description is gamete.

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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://gmasbiology.examzify.com

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

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