GMAS Biology Practice Test (Sample)

Study Guide

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 term means carbon-containing?

A. Organic

B. Inorganic

C. Proteins

D. Lipids

2. The gene-directed process by which an organism matures.

A. Evolution

B. Hypothesis

C. Theory

D. Development

3. A relationship between two organisms in which one benefits and the other is harmed is known as?

A. Predation

B. Mutualism

C. Commensalism

D. Parasitism

4. Bacteria that stain pink with a Gram stain are referred to as?

A. Endospore-forming

B. Gram negative

C. Bacillus

D. Acid-fast

5. Which phage life cycle replicates the phage genome without destroying the host cell?

A. Lytic cycle

B. Lysogenic cycle

C. Activation cycle

D. Dormant phase

6. Ozone depletion results in increased exposure to ultraviolet radiation at Earth's surface.

A. Increased greenhouse gas effect

B. Global warming

C. Increased exposure to ultraviolet radiation

D. No change in UV exposure

7. Which term refers to jawless fish?

A. Osteichthyes

B. Agnatha

C. Chondrichthyes

D. Acanthopterygii

8. A difference in the concentration of a substance across a distance is known as a

A. Energy

B. Isotonic

C. Dynamic equilibrium

D. Concentration gradient

9. The principle that two species competing for the same limiting resource cannot coexist indefinitely is known as what?

A. Shared resources principle

B. Resource partitioning

C. Niche differentiation

D. Competitive exclusion

10. Which organelle carries substances, such as proteins, to various parts of the cell?

A. Endoplasmic Reticulum

B. Nucleolus

C. Chloroplast

D. Vacuole

Answers

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

Explanations

1. Which term means carbon-containing?

A. Organic

B. Inorganic

C. Proteins

D. Lipids

Carbon-containing substances are described as organic. In biology and chemistry, organic describes compounds built around carbon, typically with hydrogen and often assembled by living organisms. Proteins and lipids are examples of organic molecules, so they illustrate the idea but don't define the property themselves. Inorganic, by contrast, refers to substances without the carbon–hydrogen framework, like minerals, salts, and water. So the term that means carbon-containing is organic.

2. The gene-directed process by which an organism matures.

A. Evolution

B. Hypothesis

C. Theory

D. Development

Development is the gene-directed process by which an organism matures. It encompasses growth, cell differentiation, and the shaping of tissues and organs, all guided by patterns of gene expression and signaling that tell cells when to divide, what to become, and how to organize into a functioning organism. This contrasts with evolution, which describes genetic changes in populations over many generations, not the maturation of a single individual. A hypothesis is a testable statement, and a theory is a well-supported broad explanation, but neither captures the idea of an individual mending and forming its mature form under genetic instructions in the way development does.

3. A relationship between two organisms in which one benefits and the other is harmed is known as?

A. Predation

B. Mutualism

C. Commensalism

D. Parasitism

When one organism benefits at the expense of another, the relationship is parasitism. The parasite gains nutrients or shelter by living on or inside the host, while the host suffers reduced health, growth, or reproductive success. Examples include ticks feeding on animals or tapeworms in the digestive system. This is different from predation, where the recipient is killed and eaten; it's also different from mutualism, where both partners gain, and from commensalism, where one benefits and the other is largely unaffected. So the described relationship fits parasitism.

4. Bacteria that stain pink with a Gram stain are referred to as?

A. Endospore-forming

B. Gram negative

C. Bacillus

D. Acid-fast

Pink staining in a Gram stain indicates Gram-negative bacteria. This result comes from their cell wall structure: a thin peptidoglycan layer plus an outer membrane. During staining, crystal violet-iodine complexes are washed out by the alcohol, and the thin peptidoglycan can't hold the dye, so the counterstain makes the cells appear pink. In contrast, Gram-positive bacteria have a thick peptidoglycan layer that retains the purple dye, so they look purple. The other terms don't describe this color outcome: endospore-forming refers to the ability to produce spores, not the Gram reaction; Bacillus is a genus typically Gram-positive; acid-fast organisms resist Gram staining and require a different staining method.

5. Which phage life cycle replicates the phage genome without destroying the host cell?

A. Lytic cycle

B. Lysogenic cycle

C. Activation cycle

D. Dormant phase

In the lysogenic cycle, the phage DNA inserts into the bacterial chromosome and becomes a prophage. The host cell then replicates its own DNA along with the prophage DNA every time it divides, so the phage genome is copied without killing the cell. The host remains alive, and the phage genome is passed to daughter cells. The prophage can later be induced to enter the lytic cycle, but during lysogeny the phage isn't destroying the host. That's why this cycle fits the description.

6. Ozone depletion results in increased exposure to ultraviolet radiation at Earth's surface.

A. Increased greenhouse gas effect

B. Global warming

C. Increased exposure to ultraviolet radiation

D. No change in UV exposure

Ozone in the stratosphere acts as a sunscreen for Earth, absorbing a large portion of ultraviolet radiation from the Sun, especially the more harmful UV-B and UV-C wavelengths. When ozone is depleted, its capacity to absorb this UV radiation drops, so more ultraviolet rays reach the surface. That increased UV exposure is the direct consequence of ozone depletion. The other options mix in terms of heat-trapping greenhouse effects, which are about infrared radiation and not the specific change in UV reaching the ground, and saying there's no change would ignore the protective role of the ozone layer.

7. Which term refers to jawless fish?

A. Osteichthyes

B. Agnatha

C. Chondrichthyes

D. Acanthopterygii

Jawless fishes are classified as Agnatha, a name that literally means “without jaws” (from Greek a- “without” and gnathos “jaw”). These primitive vertebrates lack true jaws, and they include living examples like lampreys and hagfish. This set apart from Osteichthyes, which are bony fishes with ossified skeletons, and Chondrichthyes, which are cartilaginous fishes with skeletons made of cartilage. Acanthopterygii is a large subgroup within bony fishes known for their spiny fins. So the term that refers to jawless fish is Agnatha.

8. A difference in the concentration of a substance across a distance is known as a

A. Energy

B. Isotonic

C. Dynamic equilibrium

D. Concentration gradient

A concentration gradient is the difference in the amount of a substance from one location to another. When such a gradient exists, particles move naturally from regions of higher concentration to regions of lower concentration through diffusion. This flow continues until the concentrations become equal and the net movement stops, reaching dynamic equilibrium. An isotonic condition describes having equal solute concentrations between two solutions at a boundary, which is about balance across a boundary rather than a distance-based difference within space. Energy is a general term for the capacity to do work and does not itself describe the spatial distribution of a substance.

9. The principle that two species competing for the same limiting resource cannot coexist indefinitely is known as what?

A. Shared resources principle

B. Resource partitioning

C. Niche differentiation

D. Competitive exclusion

The main idea is competitive exclusion: when two species rely on the same limiting resource, they cannot coexist indefinitely. One species is better at using that resource or reproducing under those conditions, so it will outcompete the other and drive it out of the community or push it to shift to a different resource use. This is why you don’t see two identical competitors living in the exact same niche forever. Resource partitioning and niche differentiation describe ways species can coexist by using different resources or occupying different ecological roles, reducing competition. They are mechanisms that enable coexistence, not the principle that limits it. Shared resources principle isn’t a standard term for this concept. A classic demonstration of competitive exclusion comes from early studies showing that, in a shared environment with the same resources, one species outcompetes the other; but when species divide resources or occupy different niches, both can persist.

10. Which organelle carries substances, such as proteins, to various parts of the cell?

A. Endoplasmic Reticulum

B. Nucleolus

C. Chloroplast

D. Vacuole

Proteins and other newly made substances are moved around the cell through an internal transport system, and the endoplasmic reticulum serves as a central part of that system. The rough ER, studded with ribosomes, builds proteins and packages them into vesicles that bud off and travel to other destinations, such as the Golgi apparatus for further processing or directly to the cell membrane or lysosomes. This role of creating and shuttling proteins to different parts of the cell makes it the best description of carrying substances like proteins. The nucleolus mainly makes ribosomal components, chloroplasts perform photosynthesis, and vacuoles store materials, so they aren't described as transporting proteins to various cellular locations.

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!