Biology and Earth Science – Forces, Magnetism, Moon Phases, Microbiomes, and Ecosystems 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. When something stays mostly the same over time.

A. Change

B. Stability

C. Energy

D. Food web

2. Which term describes a push or pull that can change an object's motion?

A. Friction

B. Matter

C. Speed

D. Force

3. A moon phase that looks like less than half a circle from Earth.

A. Gibbous

B. Crescent Moon

C. New Moon

D. Full Moon

4. The ability to make things move or change.

A. Molecule

B. Change

C. Stability

D. Energy

5. Which statement best describes the role of decomposers in nutrient cycling?

A. They regulate population size.

B. They convert chemical energy from glucose.

C. They store energy in the form of starch.

D. They break down dead matter and release nutrients.

6. Which organisms convert light energy into chemical energy stored as sugars, forming the base of most ecosystems?

A. Producer

B. Consumer

C. Decomposer

D. System

7. What type of magnet has a magnetic field produced by electric current?

A. Permanent Magnet

B. Electromagnet

C. Ferrite Magnet

D. Temporary Magnet

8. Which term describes a group of atoms joined together in a particular way?

A. Energy

B. Change

C. Stability

D. Molecule

9. What term describes a model that shows what eats what in an ecosystem?

A. Indirect effect

B. Food web

C. Stability

D. Resource population

10. Which phase of the Moon appears smaller than a half circle when viewed from Earth?

A. Full Moon

B. New Moon

C. Crescent Moon

D. Quarter Moon

Answers

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

Explanations

1. When something stays mostly the same over time.

A. Change

B. Stability

C. Energy

D. Food web

Stability means a system stays largely the same over time, keeping its structure, processes, and overall balance even when small disturbances occur. In ecosystems, a stable system maintains similar species composition and energy flow, with populations that don't swing wildly and a nutrient cycle that keeps working as before, returning to a typical state after minorups and downs. This is why the idea of staying mostly unchanged over time fits best. The other ideas don't capture that sense. Change describes something that varies over time, not staying the same. Energy is about the capacity to do work and how energy moves through a system, not about remaining constant. A food web is a network of feeding relationships, which can shift as species come and go, so it doesn't inherently imply staying the same.

2. Which term describes a push or pull that can change an object's motion?

A. Friction

B. Matter

C. Speed

D. Force

A push or pull that can change an object's motion is a force. A force is any interaction that can change an object's velocity or direction, and it can act through contact (like pushing a cart) or at a distance (like gravity pulling a falling object). Forces are vectors, meaning they have both magnitude and direction, and the net force on an object determines its acceleration according to F = ma. For example, pushing speeds up a cart, while friction is a force that opposes motion and can slow it down. Matter is just what something is made of, and speed is how fast something moves, not the action that changes motion. So the term that describes a push or pull capable of changing motion is force.

3. A moon phase that looks like less than half a circle from Earth.

A. Gibbous

B. Crescent Moon

C. New Moon

D. Full Moon

How much of the Moon's sunlit face you can see from Earth determines the phase. When we can see less than half of the illuminated portion, the Moon appears as a crescent—a thin curved sliver. This happens around the time of the New Moon, either just after it (waxing crescent) or just before it again (waning crescent). The other terms describe different amounts of illumination: a gibbous Moon is more than half lit but not full, a New Moon shows no illuminated face to us, and a Full Moon is fully illuminated. So the scenario "less than half illuminated" corresponds to a crescent Moon.

4. The ability to make things move or change.

A. Molecule

B. Change

C. Stability

D. Energy

Energy is the capacity to do work, to cause motion or change in a system. When you hear "the ability to make things move or change," that describes energy—the push or power behind actions. For example, a car moves because it has energy turning into kinetic energy, fuels store chemical energy that powers engines, and muscles convert chemical energy into motion. The other words aren't about that active capacity: a molecule is a basic unit of matter, change is the result or process itself, and stability is a state of balance. So energy best fits the idea of what enables movement or change.

5. Which statement best describes the role of decomposers in nutrient cycling?

A. They regulate population size.

B. They convert chemical energy from glucose.

C. They store energy in the form of starch.

D. They break down dead matter and release nutrients.

Decomposers play a key role in nutrient cycling by breaking down dead matter and releasing nutrients back into the environment, where plants can reuse them. They convert complex organic materials from dead organisms and waste into simpler inorganic nutrients (like nitrogen and phosphorus) that become available for uptake by plants and other organisms. This recycling keeps nutrients circulating through the ecosystem and maintains soil fertility. Other processes described are different. Regulating population size involves interactions like predation and competition, not just decomposition. Converting chemical energy from glucose happens in living cells during metabolism, not in the act of decomposing dead matter. Storing energy as starch occurs in photosynthetic or storage tissues, not in decomposers.

6. Which organisms convert light energy into chemical energy stored as sugars, forming the base of most ecosystems?

A. Producer

B. Consumer

C. Decomposer

D. System

Producers do this. They capture light energy and convert it into chemical energy stored in sugars through photosynthesis. Plants, algae, and some bacteria use light to drive reactions that combine carbon dioxide and water into organic molecules like glucose, storing energy in the bonds of those sugars. This stored energy becomes the foundation of most ecosystems because consumers rely on these organic molecules for energy and carbon, either directly by eating producers or indirectly by eating organisms that consumed producers. Decomposers recycle nutrients by breaking down organic matter but don't initiate the energy capture from light, and a "system" is not an organism.

7. What type of magnet has a magnetic field produced by electric current?

A. Permanent Magnet

B. Electromagnet

C. Ferrite Magnet

D. Temporary Magnet

Electric current in a wire produces a magnetic field. When that wire is wound into a coil around a soft iron core, the magnetic field becomes strong and easily controllable, which is the defining feature of an electromagnet. Unlike permanent magnets, which generate their field from the alignment of internal domains and don't need current to exist, an electromagnet's field appears only when current flows and can be varied or switched off by changing the current. Materials like ferrites are used as permanent-magnet materials, not to create a field with current, and a temporary magnet refers to material that can be magnetized in an external field but doesn't sustain a field on its own when current is removed. So the magnet whose field is produced by electric current is an electromagnet.

8. Which term describes a group of atoms joined together in a particular way?

A. Energy

B. Change

C. Stability

D. Molecule

A molecule is a group of atoms bonded together in a specific arrangement, forming a distinct unit with its own properties. This bonding gives the molecule its shape and behavior, as seen in water (two hydrogen atoms and one oxygen atom) or oxygen gas (two oxygen atoms). Energy, change, and stability describe different ideas: energy is the capacity to do work, change is a process, and stability is about how likely a system is to remain the same. They don't name a group of atoms joined together, so the correct concept is molecule.

9. What term describes a model that shows what eats what in an ecosystem?

A. Indirect effect

B. Food web

C. Stability

D. Resource population

A model showing who eats whom in an ecosystem is a food web. It maps the network of feeding relationships among producers, herbivores, and various levels of consumers, illustrating how energy moves through an ecosystem. Food webs capture multiple pathways and potential indirect effects, unlike a single food chain which shows only one linear path. The other terms describe specific ideas rather than the whole network: an indirect effect is about how one interaction influences another through a chain; stability refers to how resistant or resilient the ecosystem is to change; and resource population means the amount of available food resources, not the network of who eats whom.

10. Which phase of the Moon appears smaller than a half circle when viewed from Earth?

A. Full Moon

B. New Moon

C. Crescent Moon

D. Quarter Moon

The Moon’s apparent size in the sky stays roughly the same; what changes is how much of its near side is lit by the Sun. When the illuminated portion is less than half of the disk, it looks smaller than a half-circle, which is the crescent phase. This occurs after the New Moon (waxing crescent) and before the New Moon again (waning crescent). In contrast, a Full Moon shows nearly the entire disk lit, a New Moon is barely visible because the lit side faces away, and a Quarter Moon shows exactly half of the disk lit, appearing as a clear half-circle. So the phase that appears smaller than a half circle is the crescent Moon.

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://bioearthsciforcesmagnetism.examzify.com

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