Pre-IB Grade 9 Science Practice Exam (Sample)

Study Guide

Everything you need from our exam experts!

Sample study guide. For the full version with hundreds of questions, visit: https://preibgrade9science.examzify.com

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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. Which term describes something capable of catching fire or burning?

A. Corrosion

B. Alkaline earth metals

C. Combustible

D. Reactive substance

2. In a series circuit, how is the source voltage Vs related to the voltages across components?

A. Vs = V1 - V2 - V3

B. Is = I1 = I2 = I3

C. Rs = R1 + R2 + R3

D. Vs = V1 + V2 + V3

3. Which term describes a pure substance made of only one kind of atom?

A. Pure substance

B. Solution

C. Element

D. Mixture

4. Producers are defined as:

A. Organisms that eat other organisms

B. Organisms that decompose matter

C. Organisms that store energy

D. Organisms that make their own food

5. What term refers to a living form with interacting organs?

A. Detritus

B. Organism

C. Habitat

D. Community

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6. Which term refers to materials that do not allow electricity to pass through easily?

A. Conductors

B. Matter

C. Elements

D. Insulators

7. Carnivores are:

A. Consumers that eat producers

B. Producers that make food

C. Consumers that eat other consumers

D. Decomposers

8. Qualitative observation is defined as observation without tools, less precise.

A. Observation without tools, less precise

B. Measurement with tools, more precise

C. A chemical reaction with color change

D. A numerical value with units

9. Which factor is biotic?

A. Temperature

B. Predation

C. Water

D. Sunlight

10. Which process is the evaporation of water from the leaves of a plant?

A. Respiration

B. Condensation

C. Precipitation

D. Transpiration

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Answers

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

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Explanations

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1. Which term describes something capable of catching fire or burning?

A. Corrosion

B. Alkaline earth metals

C. Combustible

D. Reactive substance

The main idea here is flammability—the property of a material that describes its ability to catch fire and burn. A substance that can ignite and sustain combustion when exposed to heat, oxygen, and an ignition source is described as combustible. This term is specifically about burning, which is why it's the best fit for "something capable of catching fire or burning." Corrosion describes a chemical reaction that wears away a material, usually with a metal reacting with air or water, and it isn't about burning. Alkaline earth metals are a group of elements; while some can burn under certain conditions, the description of burning capability isn't about the whole group. Reactive substance is a broad label for any substance that can react, not necessarily burn. So the term that best captures the idea of burning is combustible.

2. In a series circuit, how is the source voltage Vs related to the voltages across components?

A. Vs = V1 - V2 - V3

B. Is = I1 = I2 = I3

C. Rs = R1 + R2 + R3

D. Vs = V1 + V2 + V3

In a series circuit, the same current flows through every component, and the source voltage is divided into voltage drops across each component. The voltages across the components add up to the total supply, so the source voltage equals V1 plus V2 plus V3. This follows Kirchhoff's voltage law: the sum of all voltages around the loop is zero, so Vs − V1 − V2 − V3 = 0, which rearranges to Vs = V1 + V2 + V3. The other ideas describe the current being the same or the total resistance, but they don't directly state how the source voltage relates to the component voltages.

3. Which term describes a pure substance made of only one kind of atom?

A. Pure substance

B. Solution

C. Element

D. Mixture

You're being tested on how pure substances are defined by what their building blocks are. An element is a pure substance that contains only one kind of atom. That means everything in the substance is built from the same type of atom, even if those atoms bond together to form molecules (for example, O2 or N2 are still just oxygen or nitrogen molecules). Because it's composed of a single kind of atom, it's not a compound. A compound, in contrast, contains two or more different kinds of atoms bonded together (like water, which has hydrogen and oxygen). A solution is a homogeneous mixture of substances, not a pure substance on its own. So the term for a pure substance made of only one kind of atom is element.

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4. Producers are defined as:

A. Organisms that eat other organisms

B. Organisms that decompose matter

C. Organisms that store energy

D. Organisms that make their own food

Producers are organisms that make their own food from inorganic materials, using energy from light or chemical reactions. This ability to synthesize organic molecules starts every food chain and places producers at the base of the ecosystem. In most environments, plants, algae, and some bacteria carry out photosynthesis, converting carbon dioxide and water into glucose and oxygen. Because they create the organic matter that other organisms rely on for energy, they're different from consumers, which must eat other organisms, and from decomposers, which break down dead matter. Energy is stored in the chemical bonds of the produced molecules like glucose, which can then be transferred through the food web.

5. What term refers to a living form with interacting organs?

A. Detritus

B. Organism

C. Habitat

D. Community

The main idea is a living form that has multiple organ systems working together. That term is organism. An organism is any living being that carries out life processes through coordinated organs and systems that interact to keep the whole being alive—like a human or a frog, which digest, respire, circulate, and grow through their interworking parts. Detritus is dead organic material, not a living form with organs. A habitat is the place where an organism lives, not the living being itself. A community is all the different populations living in one area, not a single living form.

6. Which term refers to materials that do not allow electricity to pass through easily?

A. Conductors

B. Matter

C. Elements

D. Insulators

Electric current moves by the flow of electrons; materials that stop or resist that flow have tightly bound electrons and high resistance. An insulator is a material that does not let electricity pass through easily, which is why substances like rubber, plastic, and glass are used as coatings to keep electrical parts safe. In contrast, conductors have free-moving electrons and allow current to flow readily, like metals. The other terms are broader: matter is anything with mass and occupy space, and elements are pure substances that can be metals or nonmetals and may conduct or insulate depending on the substance. The term that precisely describes materials that resist electric flow is insulators.

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7. Carnivores are:

A. Consumers that eat producers

B. Producers that make food

C. Consumers that eat other consumers

D. Decomposers

Carnivores obtain energy by eating other animals; they are heterotrophs who rely on consuming other organisms rather than making their own food. In a simple food chain, producers stand at the base by making energy-rich compounds themselves, primary consumers are herbivores that eat producers, and carnivores are higher-level consumers that eat other animals. They are not producers, since they don't synthesize their own food, and they're not decomposers, who break down dead matter. So the best description is that carnivores are consumers that eat other consumers.

8. Qualitative observation is defined as observation without tools, less precise.

A. Observation without tools, less precise

B. Measurement with tools, more precise

C. A chemical reaction with color change

D. A numerical value with units

Qualitative observation means describing what you notice using your senses without using measuring tools or numbers. It focuses on qualities like color, shape, texture, or smell rather than how much or how big something is. Because no measurements are taken, the information is descriptive and not expressed with numeric values, so it's less precise for comparing exact amounts, but it's great for noticing features and differences. The other ideas describe using tools to measure or express results with numbers, which is quantitative rather than qualitative. So describing something as "observation without tools, less precise" captures the idea of qualitative observation.

9. Which factor is biotic?

A. Temperature

B. Predation

C. Water

D. Sunlight

Biotic factors are the living parts of an ecosystem and the interactions among living things. Predation fits this because it involves living organisms—a predator hunting and feeding on another living organism. The other options are abiotic factors, meaning non-living environmental conditions like temperature, water, and sunlight that influence organisms but are not themselves living. So predation is the biotic factor here, since it depends on living beings and their interactions.

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10. Which process is the evaporation of water from the leaves of a plant?

A. Respiration

B. Condensation

C. Precipitation

D. Transpiration

Transpiration is the process of water evaporating from plant surfaces, especially the leaves, through the stomata. As water travels from the roots up the plant, it reaches the leaves and evaporates from cell surfaces, exiting as water vapor. This not only cools the leaf but also helps pull more water up the plant due to cohesion and tension in the water column. In contrast, respiration is the energy-releasing process inside cells, condensation is water vapor turning into liquid, and precipitation is rain forming in the atmosphere. So the evaporation from leaves is transpiration.

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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://preibgrade9science.examzify.com

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

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