Dual Enrollment Physical Science Midterm Practice Test (Sample)

Study Guide

Everything you need from our exam experts!

Table of Contents

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 cloud type appears last in the list?

A. Cirrus

B. Cumulus

C. Stratus

D. Nimbus

2. What instrument is used to measure atmospheric pressure?

A. Barometer

B. Hygrometer

C. Anemometer

D. Thermometer

3. A block with density 2.0 g/cm³ is placed in water (density 1.0 g/cm³). Will the block float or sink, and why?

A. Float

B. Sink

C. Hover

D. Dissolve

4. Which pair correctly labels a negatively charged ion and a positively charged ion?

A. Cation; Anion

B. Anion; Cation

C. Ion; Molecule

D. Negative Ion; Positive Ion

5. Which of the following is NOT a characteristic of metals?

A. Good Conductors

B. Ductile

C. Malleable

D. Brittle Solids

6. In a balanced chemical equation, the coefficient indicates the number of molecules.

A. Subscripts

B. Moles

C. Coefficient

D. Molarity

7. The symbol (l) after a chemical formula indicates which phase?

A. Solid

B. Gas

C. Liquid

D. Aqueous

8. What tend to lose electrons from their valence shells when they become ions?

A. Nonmetals

B. Metalloids

C. Noble gases

D. Metals

9. Which group tends to form salts with other elements?

A. Noble Gases

B. Halogens

C. Chalcogens

D. Transition Elements

10. The formation of two new compounds from two original compounds is called

A. Single-Replacement

B. Synthesis

C. Double-Replacement

D. Decomposition

Answers

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

Explanations

1. Which cloud type appears last in the list?

A. Cirrus

B. Cumulus

C. Stratus

D. Nimbus

Think about order in a list. The last item in a sequence is the one that comes at the very end. In the given sequence of cloud names, cirrus appears first, then cumulus, then stratus, and finally nimbus. Since nimbus is the final item, it appears last, making it the correct choice. While nimbus is often discussed in cloud classifications as rain-bearing, here the focus is simply the position in the list, not the cloud type itself. The other names come earlier in the sequence, so they aren't last.

2. What instrument is used to measure atmospheric pressure?

A. Barometer

B. Hygrometer

C. Anemometer

D. Thermometer

Measuring atmospheric pressure relies on an instrument that responds to the weight of the air above us. A barometer does exactly that by translating air pressure into a readable value. This is essential for understanding weather changes and altitude effects, with readings often given in millibars or kilopascals. The other tools have different purposes: a hygrometer measures humidity, an anemometer gauges wind speed, and a thermometer records temperature. Therefore, the barometer is the instrument used to measure atmospheric pressure.

3. A block with density 2.0 g/cm³ is placed in water (density 1.0 g/cm³). Will the block float or sink, and why?

A. Float

B. Sink

C. Hover

D. Dissolve

Density tells you how heavy something is for its size, and buoyancy depends on how much water you can push out of the way. Water has a density of 1.0 g/cm^3, so the upward buoyant force equals the weight of the water displaced. If the block is denser than water, its weight for the same volume is greater than the buoyant force the water can provide, so gravity wins and the block sinks. With a density of 2.0 g/cm^3, this block is heavier per volume than water, so it will sink rather than float, hover, or dissolve.

4. Which pair correctly labels a negatively charged ion and a positively charged ion?

A. Cation; Anion

B. Anion; Cation

C. Ion; Molecule

D. Negative Ion; Positive Ion

When atoms gain electrons they become negatively charged, and the term for that is anion. When atoms lose electrons they become positively charged, called a cation. So the pair that correctly labels a negatively charged ion and a positively charged ion is anion and cation. The other optionsSwap the labels or use terms that aren't the standard names for charged species, like "negative ion" and "positive ion" (which are less common in formal chemistry), or mix in "ion" with "molecule," which isn't specifically about charge.

5. Which of the following is NOT a characteristic of metals?

A. Good Conductors

B. Ductile

C. Malleable

D. Brittle Solids

Metals owe many of their common properties to metallic bonding, where electrons are free to move like a sea around positive ions. That free-moving electron cloud allows metals to conduct heat and electricity efficiently, and it also lets layers of atoms slide past one another when a force is applied, giving metals their malleability and ductility. Because of this bonding, being a good conductor, and being malleable and ductile are typical metal characteristics. Brittle solids, on the other hand, describe materials that fracture easily without noticeable plastic deformation. That isn't a general feature of metals; while some metals or specific alloys can behave brittly in certain conditions, metals as a class are not defined by brittleness. Hence, "brittle solids" is not a characteristic that fits metals in the usual sense.

6. In a balanced chemical equation, the coefficient indicates the number of molecules.

A. Subscripts

B. Moles

C. Coefficient

D. Molarity

In a balanced chemical equation, the coefficient is the scaling factor that shows how many molecules (or, equivalently, moles) of each substance are involved in the reaction. It sets the relative amounts of reactants and products so the total number of atoms of each element is the same on both sides. For example, in $2\ H_2 + O_2 \rightarrow 2\ H_2O$, the coefficients tell you that two molecules of hydrogen gas react with one molecule of oxygen gas to produce two molecules of water. Subscripts are about the composition of a single molecule (how many atoms of each element are in that molecule), not how much you have overall, which is why they don't indicate amounts. Molarity is a measure of concentration (moles per liter) and isn't part of balancing the equation.

7. The symbol (l) after a chemical formula indicates which phase?

A. Solid

B. Gas

C. Liquid

D. Aqueous

In chemical notation, the parentheses after a formula show the substance's physical state. The symbol (l) means the liquid phase. So the substance is in liquid form under the given conditions. This contrasts with solid (s), gas (g), and aqueous (aq) states. For example, H2O(l) is liquid water, while H2O(g) would be water vapor.

8. What tend to lose electrons from their valence shells when they become ions?

A. Nonmetals

B. Metalloids

C. Noble gases

D. Metals

Metals tend to lose electrons from their outermost shell when they form ions. This happens because metals have relatively low ionization energy, so their valence electrons are held less tightly. By shedding these electrons, a metal atom becomes a positively charged ion and moves toward the electron configuration of the nearest noble gas, gaining stability. Nonmetals, on the other hand, usually gain electrons to complete their valence shell, while noble gases already have full valence shells and resist forming ions under normal conditions. Metalloids can show mixed behavior depending on the particular element and circumstances.

9. Which group tends to form salts with other elements?

A. Noble Gases

B. Halogens

C. Chalcogens

D. Transition Elements

Salts form when a nonmetal accepts electrons to become a negatively charged ion and a metal donates electrons to become a positively charged ion, then these ions attract to each other. The group that tends to form salts with other elements is the halogens because they are highly electronegative and readily gain one electron to achieve a noble-gas configuration. In reactions with metals, halogens become halide ions (for example, Cl^-, F^-, Br^-, I^-), which easily pair with metal cations to produce a wide variety of salts such as sodium chloride and potassium iodide. Noble gases are very unreactive and seldom form salts under normal conditions. Chalcogens do form many oxide and sulfide salts, but their tendency to form salts with a broad range of elements isn't as universal as that of halogens. Transition elements form a lot of compounds and complex ions as well, including salts, but the characteristic broad formation of simple ionic salts with metals is most typical of halogens.

10. The formation of two new compounds from two original compounds is called

A. Single-Replacement

B. Synthesis

C. Double-Replacement

D. Decomposition

Two compounds exchanging partners to form two new compounds is a double-displacement (metathesis) reaction. In this type, the ions switch partners, so AB + CD → AD + CB. The key idea is that two starting substances produce two different new substances, rather than a single product or a breakdown into simpler pieces. This differs from synthesis, where combining materials yields one product; decomposition, where one substance breaks into multiple products; and single-replacement, where one element replaces another in a compound to form a new compound plus a free element. A classic example is a salt solution reaction where NaCl and AgNO3 form NaNO3 and AgCl.

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://dualenrollmentphysicalscimidterm.examzify.com

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