FMS Science 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. In a chemical equation, what do coefficients specify?

A. The state of matter of each substance

B. The number of molecules involved

C. The ratio of reactants to products

D. The total energy change

2. Which of the following is not a standard component of a graph showing a dependent variable?

A. A random decorative image

B. Data points

C. Axis labels

D. A title describing the relationship

3. Density, according to the material, changes as you move down the periodic table in which way?

A. Decreases

B. Remains constant

C. Increases

D. Varies with temperature

4. Earthquakes are caused by plates sliding past each other. This activity is characteristic of which boundary?

A. Convergent boundary

B. Transform boundary

C. Divergent boundary

D. Subduction boundary

5. In a graph that shows how a result changes with a factor, which variable is typically plotted on the y-axis?

A. Independent variable

B. Dependent variable

C. Control variable

D. Time

6. What forms when eroded sediments are deposited as a river slows?

A. Dune

B. Delta

C. Moraine

D. Ridge

7. A substance consisting of two or more elements chemically combined is called a

A. Element

B. Compound

C. Mixture

D. Solution

8. What term describes elements found in a vertical column sharing similar properties?

A. Rows

B. Columns

C. Elements

D. Families/Groups

9. What is gravity?

A. The force which governs the motion of all objects in our solar system.

B. A property of light that bends around objects

C. The rate at which planets orbit the Sun

D. The attraction between masses on Earth only

10. In a simple two-variable graph, which axis is typically used for the variable that is varied and observed as the outcome?

A. X-axis

B. Y-axis

C. Z-axis

D. Time axis

Answers

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

Explanations

1. In a chemical equation, what do coefficients specify?

A. The state of matter of each substance

B. The number of molecules involved

C. The ratio of reactants to products

D. The total energy change

Coefficients show how many molecules (or moles) of each substance participate in the reaction. They are the numbers in front of the formulas that balance the equation, so they tell you the exact amounts needed for the reaction to proceed while preserving mass. Because of that, reading the coefficients gives the relative quantities of reactants and products—the ratio of how much of each substance is involved. The state of matter (solid, liquid, gas, aqueous) is not determined by these numbers; it's indicated separately after the substance. The total energy change isn't set by the coefficients either; energy changes depend on the specific substances and conditions, described by thermodynamic data rather than the counts of molecules.

2. Which of the following is not a standard component of a graph showing a dependent variable?

A. A random decorative image

B. Data points

C. Axis labels

D. A title describing the relationship

When presenting data about a dependent variable, a graph should clearly communicate what was measured and how it relates to the conditions you tested. The essential pieces are data points, axis labels, and a descriptive title. Data points show the actual measurements of the dependent variable for each level of the independent variable, letting you see trends, patterns, or correlations. Axis labels indicate what each axis represents and include units, so you know what the numbers mean and how the variables relate. A title provides a quick description of the relationship being shown, giving viewers immediate context about which variables are involved and what the graph is illustrating. A random decorative image doesn't convey any data or meaning about the relationship, and it can distract from interpreting the graph, so it isn't considered a standard component.

3. Density, according to the material, changes as you move down the periodic table in which way?

A. Decreases

B. Remains constant

C. Increases

D. Varies with temperature

Density is how much mass fits in a given volume. In solids, especially metals, atoms stack in a fairly tight lattice. As you move down a group, atoms become heavier (more protons and neutrons) while their overall packing volume doesn't increase enough to offset that added mass. So the mass per unit volume grows, and density increases. This is a general trend for metals at a given temperature, though there are exceptions among nonmetals and noble gases, and density can change with temperature.

4. Earthquakes are caused by plates sliding past each other. This activity is characteristic of which boundary?

A. Convergent boundary

B. Transform boundary

C. Divergent boundary

D. Subduction boundary

Earthquakes happen when rocks that are resting against each other along a boundary are stuck by friction, then suddenly slip and release energy. The key idea here is horizontal, side-by-side motion: the plates slide past one another rather than moving toward or away from each other. That sideways shear is exactly what occurs at transform boundaries, where two tectonic plates grind past each other along faults. This ongoing sliding explains the frequent earthquakes seen along transform boundaries like the San Andreas Fault. By contrast, divergent boundaries involve plates moving apart and creating new crust, and convergent/subduction boundaries involve collision where one plate slides beneath another—motions that produce earthquakes too, but the description of slipping past each other most directly points to a transform boundary.

5. In a graph that shows how a result changes with a factor, which variable is typically plotted on the y-axis?

A. Independent variable

B. Dependent variable

C. Control variable

D. Time

The y-axis shows the result you're measuring—the outcome that depends on the factor you're changing. When you vary a factor, the thing that changes in response is the dependent variable, so it's plotted on the vertical axis. The factor itself, which you control, sits on the x-axis as the independent variable. Control variables are kept constant and aren't what you're measuring. Time could appear on an axis if you're specifically looking at changes over time, but for a general setup where a result changes with a factor, the outcome is on the y-axis.

6. What forms when eroded sediments are deposited as a river slows?

A. Dune

B. Delta

C. Moraine

D. Ridge

When a river slows down, it loses the energy needed to carry the sediment it has eroded from its watershed. That sediment then settles out of the water and accumulates where the river meets a still body of water, like an ocean or a lake. Over time this deposition builds up land that fans out into the water, forming a delta. The coarsest material tends to drop first near the mouth, while finer material can be carried farther, helping create the network of channels and silt deposits that characterizes a delta. Dunes are shaped by wind rather than water, moraine is formed from glacial debris left behind as a glacier advances or retreats, and a ridge is a long, elevated crest formed by tectonic or glacial processes. These features aren't the result of a slowing river depositing sediment at its mouth.

7. A substance consisting of two or more elements chemically combined is called a

A. Element

B. Compound

C. Mixture

D. Solution

Two or more elements chemically bonded form a compound. In a compound, the elements join in a fixed ratio and the resulting substance has properties that are different from the elements on their own. This is different from a mixture, where substances are simply physically combined and can usually be separated by physical means, and from a solution, which is a homogeneous mixture where the components are dissolved but not chemically bonded to each other. To separate a compound into its elements, chemical changes that break the bonds are needed, not just physical separation. Water (H2O) and table salt (NaCl) are classic examples.

8. What term describes elements found in a vertical column sharing similar properties?

A. Rows

B. Columns

C. Elements

D. Families/Groups

Vertical columns in the periodic table are called groups or families. Elements in the same column share similar properties because they have the same number of valence electrons, which gives them similar outer-shell configurations and chemistry. For example, alkali metals in one group all have one valence electron and react similarly, while noble gases in another group are very unreactive due to a full outer shell. Rows are periods and run horizontally, so they describe a different kind of pattern. The term that describes elements in a vertical column with similar properties is families or groups.

9. What is gravity?

A. The force which governs the motion of all objects in our solar system.

B. A property of light that bends around objects

C. The rate at which planets orbit the Sun

D. The attraction between masses on Earth only

Gravity is the force that attracts objects with mass toward each other. In the solar system, this pull from the Sun keeps planets in ellipses rather than drifting off, and it also binds moons to their planets and governs the paths of comets and asteroids. So, describing gravity as the force that governs the motion of all objects in our solar system best captures its essential role in producing orbital motion. The other statements describe something unrelated to gravity: light bending is about light, not gravity; the rate of orbit is about how fast something goes, not the cause of the motion; and gravity doesn't stop at Earth—it acts between all masses, everywhere, even though Earth's gravity is what we feel most directly locally.

10. In a simple two-variable graph, which axis is typically used for the variable that is varied and observed as the outcome?

A. X-axis

B. Y-axis

C. Z-axis

D. Time axis

In a simple two-variable graph, the variable you deliberately vary is placed on the X-axis. This arrangement lets you control the input and observe how the outcome on the Y-axis responds as you move left to right. In other words, the X-axis holds the independent variable, the thing you change, while the Y-axis holds the dependent variable, the observed result. The Z-axis is only used for three-dimensional plots, and a time axis isn't the default in a basic two-variable relationship unless you're specifically plotting change over time. So, the axis for the varied variable is the X-axis.

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://fmsscience.examzify.com

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