

CSET MULTIPLE SUBJECTS SUBTEST 2: MATH AND SCIENCE PRACTICE TEST (SAMPLE) STUDY GUIDE



Prepare with structure. Pass with confidence



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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

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1. Which term describes the variety of life in a geographic area or ecosystem?
 - A. Ecology
 - B. Evolution
 - C. Biodiversity
 - D. Population
2. Ionic bonds form in compounds between which types of atoms?
 - A. A noble gas and a metal
 - B. Two nonmetals
 - C. Two metals
 - D. A metal and a nonmetal
3. Solve the system $2x + y = 7$ and $x - y = 1$. What is x ?
 - A. $x = 2$
 - B. $x = 3$
 - C. $x = 1$
 - D. $x = 4$
4. Which statement about barometric pressure is correct?
 - A. High pressure generates storms
 - B. Low pressure generates storms
 - C. Barometric pressure measures humidity
 - D. Barometer measures wind speed
5. A cell with two complete sets of chromosomes is called what?
 - A. Haploid
 - B. Diploid
 - C. Monoploid
 - D. Polyploid
6. Which of the following is NOT an igneous rock?
 - A. Basalt
 - B. Granite
 - C. Obsidian
 - D. Marble

7. What is the opposite of distributing?

- A. Adding
- B. Subtracting
- C. Factoring
- D. Multiplying

8. Which statement describes the identity property of addition?

- A. the product of any number and zero equals zero
- B. any number + 0 equals itself
- C. the sum of a number and itself equals twice the number
- D. any number $\times$ 1 equals itself

9. In Newton's third law, for every action there is an equal and opposite what?

- A. Force
- B. Momentum
- C. Acceleration
- D. Reaction

10. During the first and third Quarter Moon phases, how is the Moon illuminated?

- A. One-quarter illuminated
- B. Three-quarters illuminated
- C. Half illuminated
- D. Full illuminated

Answers

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

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Explanations

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1. Which term describes the variety of life in a geographic area or ecosystem?

- A. Ecology
- B. Evolution
- C. Biodiversity**
- D. Population

Biodiversity is the variety of life in a geographic area or ecosystem. It captures the number of different species, the genetic differences within those species, and the variety of habitats and ecosystems present in that area. Ecology is the study of how organisms interact with each other and their environment, evolution is the process by which species change over time, and a population is a group of individuals of the same species living in a place. So biodiversity best describes the overall variety of life in that geographic area or ecosystem.

2. Ionic bonds form in compounds between which types of atoms?

- A. A noble gas and a metal
- B. Two nonmetals
- C. Two metals
- D. A metal and a nonmetal**

Ionic bonds form when electrons are transferred from a metal to a nonmetal, creating a positively charged metal ion and a negatively charged nonmetal ion. The attraction between these opposite charges is what holds the compound together. Metals tend to lose electrons because they have low ionization energy, while nonmetals tend to gain electrons because they have high electron affinity. This transfer leads to an electrostatic bond that is characteristic of compounds formed between a metal and a nonmetal. For example, common salts like table salt (sodium chloride) arise from this metal–nonmetal pairing. In contrast, a noble gas and a metal would not typically form an ionic bond because noble gases are already stable and unlikely to transfer or accept electrons; two nonmetals usually form covalent bonds by sharing electrons, and two metals form metallic bonds with delocalized electrons rather than a transfer to create ions.

3. Solve the system $2x + y = 7$ and $x - y = 1$. What is x ?

- A. $x = 2$**
- B. $x = 3$
- C. $x = 1$
- D. $x = 4$

This question tests solving a pair of linear equations by elimination. To make y disappear, add the two equations: $(2x + y) + (x - y) = 7 + 1$, which simplifies to $3x = 8$. So $x = 8/3$. Checking by substitution into $x - y = 1$ gives $y = x - 1 = 8/3 - 1 = 5/3$, which is also consistent with the first equation. Therefore, x equals $8/3$.

4. Which statement about barometric pressure is correct?

- A. High pressure generates storms
- B. Low pressure generates storms**
- C. Barometric pressure measures humidity
- D. Barometer measures wind speed

Atmospheric pressure and weather are connected: storms tend to form under low-pressure conditions when air rises. In a low-pressure area, air near the surface converges and lifts upward; as this air ascends, it cools and condenses into clouds, releasing energy that drives storms and precipitation. In contrast, high-pressure areas have sinking air that suppresses cloud formation, leading to calmer, clearer weather. Barometric pressure measures the force of the air on the surface, not humidity. Humidity is measured by other instruments, and wind speed is measured with a device like an anemometer, not a barometer. So the statement that low pressure generates storms best captures the relationship between pressure and storm formation.

5. A cell with two complete sets of chromosomes is called what?

- A. Haploid
- B. Diploid**
- C. Monoploid
- D. Polyploid

Having two complete sets of chromosomes means the cell is diploid. This is written as $2n$, reflecting one full set from each parent. In many organisms, somatic (body) cells carry two copies of each chromosome and form homologous pairs, which is why they're diploid. Gametes, by contrast, are haploid (n) and contain only one set. If a cell had more than two sets, it would be polyploid (like $3n$ or $4n$); monoploid is a term used in a few contexts to mean a single set. So the term that describes a cell with two complete chromosome sets is diploid.

6. Which of the following is NOT an igneous rock?

- A. Basalt
- B. Granite
- C. Obsidian
- D. Marble**

Rocks are grouped by how they form. Igneous rocks come from molten material that cools and solidifies, either as lava at the surface or magma underground. Their crystals form as the melt cools. Basalt forms from rapidly cooled lava, giving a fine-grained texture. Granite forms from magma cooling slowly underground, yielding larger crystals. Obsidian is volcanic glass that solidifies so quickly it doesn't have visible crystals. Marble, on the other hand, is not formed by cooling molten rock. It starts as limestone and is transformed by heat and pressure deep underground, causing the calcite grains to recrystallize into a new, interlocking mosaic. This process is metamorphism, not igneous crystallization. So marble is a metamorphic rock, not igneous.

7. What is the opposite of distributing?

- A. Adding
- B. Subtracting
- C. Factoring**
- D. Multiplying

Distributing is applying a factor outside parentheses to every term inside, using the distributive property. The operation that goes in reverse is factoring, where you pull out a common factor from several terms to rewrite the expression as a single product. For example, $12x + 15$ can be rewritten as $3(4x + 5)$, showing how a sum with a common factor comes from distributing 3 across the terms inside. The other processes—adding, subtracting, or multiplying—don't reverse that step. Adding or subtracting changes terms; multiplying scales terms, but none of these reverse the idea of turning a sum back into a product by factoring out a common factor.

8. Which statement describes the identity property of addition?

- A. the product of any number and zero equals zero
- B. any number + 0 equals itself**
- C. the sum of a number and itself equals twice the number
- D. any number $\times$ 1 equals itself

Zero acts as the identity element for addition: adding zero to any number leaves that number unchanged. For any number n , $n + 0 = n$. This is exactly what the statement describes. The other options relate to different ideas: multiplying by zero gives zero, multiplying by one gives the multiplicative identity, and $a + a = 2a$ expresses doubling, not the identity property.

9. In Newton's third law, for every action there is an equal and opposite what?

- A. Force
- B. Momentum
- C. Acceleration
- D. Reaction**

In Newton's third law, forces come in pairs that act on two different objects. When one object pushes on another, the second object pushes back with the same strength but in the opposite direction. This rebound force is the reaction. The action and the reaction are equal in magnitude and opposite in direction, and they occur simultaneously. For example, pushing against a wall: your hand exerts a force on the wall, and the wall exerts an equal and opposite force on your hand. The other options don't fit because momentum and acceleration describe motion or properties of objects, not the paired force in the action–reaction pair.

10. During the first and third Quarter Moon phases, how is the Moon illuminated?

- A. One-quarter illuminated
- B. Three-quarters illuminated
- C. Half illuminated**
- D. Full illuminated

When the Moon is at first or third quarter, the Sun–Moon–Earth geometry makes the visible Moon appear half lit. The Sun's light falls on exactly half of the Moon that we can see from Earth, with the other half in shadow. This is why both quarter phases show a 50% illuminated Moon. (In the northern hemisphere, the illuminated half appears on the right during the first quarter and on the left during the last quarter.)

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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://csetmultisubsubtest2mathsci.examzify.com>

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

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