

EARTH SCIENCE STANDARDS OF LEARNING (SOL) PRACTICE TEST (SAMPLE) STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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THE FULL VERSION STUDY GUIDE**

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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. Ores are not useful and profitable.**
 - A. True
 - B. False
 - C. Not sure
 - D. Depends
- 2. What texture is typical of rocks formed by rapid cooling at the surface?**
 - A. Fine-grained or Glassy
 - B. Coarse-grained
 - C. Medium-grained
 - D. Porphyritic
- 3. Which region is known for long ridges and valleys formed during Paleozoic tectonics?**
 - A. Piedmont
 - B. Valley and Ridge
 - C. Blue Ridge
 - D. Appalachian Plateau
- 4. Which waves are the second to reach the seismic station and cannot travel through liquids?**
 - A. P waves
 - B. S waves
 - C. L waves
 - D. Surface waves
- 5. Which solstice occurs around December 21?**
 - A. Summer Solstice
 - B. Vernal Equinox
 - C. Autumnal Equinox
 - D. Winter Solstice

6. Which term describes factors that do not change during an experiment?

- A. Experimental factors
- B. Conditions
- C. Constants
- D. Invariants

7. Which climate is hot?

- A. Arid
- B. Tropical
- C. Polar
- D. Continental

8. What are the five physiographic provinces of Virginia?

- A. Coastal Plain, Piedmont, Blue Ridge, Valley and Ridge, and the Appalachian Plateau
- B. Coastal Plain, Piedmont, Blue Ridge, Great Valley, Appalachian Plateau
- C. Coastal Plain, Piedmont, Adirondack Mountains, Valley and Ridge, Appalachian Plateau
- D. Coastal Plain, Piedmont, Blue Ridge, Valley, and Appalachian Highlands

9. Which category describes the planets that are small, rocky, and have few moons?

- A. Inner
- B. Outer
- C. Comets
- D. Stars

10. Which effect causes deflections of the atmosphere and oceans due to the rotation of the Earth?

- A. Coriolis Effect
- B. Winds
- C. Fronts
- D. Climate

Answers

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

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Explanations

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1. Ores are not useful and profitable.

- A. True
- B. False**
- C. Not sure
- D. Depends

Ores are rocks that contain a concentration of minerals valuable enough to mine and process. The usefulness comes from the metals or materials they yield—iron ore provides steel, copper ore supplies metal for electrical wiring, gold ore contributes to jewelry and electronics, and so on. Because these minerals are central to modern industry, ores are generally useful, and mining can be profitable when the ore is of sufficient grade and the market price covers the costs of extraction and processing. So the statement that ores are not useful and profitable is not correct. Of course, profitability can vary with ore quality and market conditions, but the basic idea is that ores are economic sources of useful materials.

2. What texture is typical of rocks formed by rapid cooling at the surface?

- A. Fine-grained or Glassy**
- B. Coarse-grained
- C. Medium-grained
- D. Porphyritic

Rocks that crystallize quickly at the surface end up with a fine-grained or glassy texture. When lava erupts and cools in the air or in water, there isn't time for large crystals to form, so the crystals that do develop are very small (fine-grained) or the rock solidifies into a glassy, non-crystalline state (like obsidian). In contrast, slow cooling deep underground yields coarse-grained textures with visible crystals, and porphyritic textures come from cooling in two stages, producing some large crystals within a finer matrix. So the texture that matches rapid surface cooling is fine-grained or glassy.

3. Which region is known for long ridges and valleys formed during Paleozoic tectonics?

- A. Piedmont
- B. Valley and Ridge
- C. Blue Ridge**
- D. Appalachian Plateau

The region with long, nearly parallel ridges and the valleys between them formed during the Paleozoic tectonic events that folded and faulted large swaths of sedimentary rock in the Appalachian Mountains. As continents collided and compressive forces pushed the layers, they were bent into alternating upward folds (anticlines, which become ridges) and downward folds (synclines, which become valleys). Erosion then wore away the softer rocks more quickly, leaving a repeating pattern of long ridges separated by valleys. This creates the characteristic landscape of the Valley and Ridge province. By contrast, the Blue Ridge is dominated by older, resistant metamorphic rocks that form a high, rugged belt, not a system of long parallel ridges and valleys. The Piedmont is more gently rolling hills carved from metamorphic rocks, and the Appalachian Plateau is a relatively flat-lying, plateau region with fewer long ridges.

4. Which waves are the second to reach the seismic station and cannot travel through liquids?

- A. P waves
- B. S waves**
- C. L waves
- D. Surface waves

The key idea is how different seismic waves move through Earth's materials and what that implies for their travel times. P waves are the fastest and act like compressions that push and pull in the direction of travel. Because they can move through solids, liquids, and gases, they arrive first at a seismic station after an earthquake. S waves, on the other hand, move by shearing the material—shaking rocks side to side perpendicular to the direction of travel. Liquids can't support this kind of shear, so S waves cannot propagate through liquids at all. Because they travel slower than P waves, they arrive next, making them the second to reach the station. Surface waves (which travel along the Earth's surface) typically arrive after the body waves (P and S) because they move more slowly and are constrained to the surface layer. So the waves that are second to arrive and cannot travel through liquids are the shear (S) waves.

5. Which solstice occurs around December 21?

- A. Summer Solstice
- B. Vernal Equinox
- C. Autumnal Equinox
- D. Winter Solstice**

Solstices are the two times each year when the Sun's path in the sky reaches its extreme height or lowest point because the Earth is tilted on its axis. Around December 21, the tilt is such that the Northern Hemisphere is tilted away from the Sun, making the Sun appear lowest at noon and resulting in the shortest day of the year. This is the winter solstice. After this date, days begin to lengthen as the Sun climbs higher in the sky toward spring. (In the Southern Hemisphere, the situation is reversed, and December 21 is their summer solstice.)

6. Which term describes factors that do not change during an experiment?

- A. Experimental factors
- B. Conditions
- C. Constants**
- D. Invariants

In experiments, the things that stay the same are called constants. These factors are kept unchanged so they don't influence the results, letting you see how the variable you're testing actually affects the outcome. For example, when you study how amount of sunlight affects plant growth, keeping the type of plant, soil, water level, and temperature constant means any difference in growth can be attributed to sunlight rather than those other factors. The term constants specifically describes those unchanged factors. The other ideas refer to things that can change or to the overall setup, not to the factors kept fixed. Invariants isn't the typical lab term for this context.

7. Which climate is hot?

- A. Arid
- B. Tropical**
- C. Polar
- D. Continental

Temperatures are driven by how much solar energy a place receives over the year. Tropical climates sit near the equator, where sunlight is strong and fairly consistent year-round. That constant, intense solar input keeps average temperatures high in every month, so it stays hot throughout the year. In contrast, polar regions receive less sunlight and have cold temperatures most of the year, and continental interiors experience noticeable seasonal swings with warm summers but cold winters. Some arid regions can be very hot, but aridity is about little rainfall, not consistently high temperatures. So the climate that is characteristically hot all year is the tropical climate.

8. What are the five physiographic provinces of Virginia?

- A. Coastal Plain, Piedmont, Blue Ridge, Valley and Ridge, and the Appalachian Plateau**
- B. Coastal Plain, Piedmont, Blue Ridge, Great Valley, Appalachian Plateau
- C. Coastal Plain, Piedmont, Adirondack Mountains, Valley and Ridge, Appalachian Plateau
- D. Coastal Plain, Piedmont, Blue Ridge, Valley, and Appalachian Highlands

Virginia's landscape is divided into five physiographic provinces: Coastal Plain, Piedmont, Blue Ridge, Valley and Ridge, and the Appalachian Plateau. This ordering from east to west reflects how elevation and rock type change across the state: the Coastal Plain sits at low elevation along the coast and bays, the Piedmont is a gently rolling region just inland, the Blue Ridge mountains form a high, rugged belt, the Valley and Ridge region features long, parallel ridges and valleys, and the Appalachian Plateau sits in the western part as a relatively flat, plateau-like area. The listed set matches these five distinct regions. One option uses Adirondack Mountains, which are located far to the north in New York and not part of Virginia's provinces. Another option substitutes Great Valley for Valley and Ridge, which isn't the standard Virginia designation. The remaining choice uses Appalachian Highlands instead of Appalachian Plateau, which isn't the conventional name for Virginia's western plateau region.

9. Which category describes the planets that are small, rocky, and have few moons?

- A. Inner**
- B. Outer
- C. Comets
- D. Stars

Planets that form close to the Sun are generally small and rocky, with solid surfaces. Their gravity is not strong enough to accumulate large atmospheres or many moons, so they end up with only a few natural satellites, if any. In our solar system, this group includes Mercury, Venus, Earth, and Mars. They stand in contrast to the outer planets, which are large gas or ice giants with many moons thanks to more material and stronger gravity farther from the Sun. Comets aren't planets at all—they're icy bodies that orbit the Sun and can have tails when they approach it—while stars are enormous luminous bodies, not planets. So the category that describes small, rocky worlds with few moons is the inner planets.

10. Which effect causes deflections of the atmosphere and oceans due to the rotation of the Earth?

A. Coriolis Effect

B. Winds

C. Fronts

D. Climate

The Coriolis Effect explains the deflection of moving air and ocean waters caused by Earth's rotation. As air and water try to move straight from high to low pressure, the planet's spin causes them to bend: to the right in the Northern Hemisphere and to the left in the Southern Hemisphere. This curvature shapes large-scale wind patterns and ocean currents, influencing weather and climate. Winds describe the motion itself, fronts are boundaries between air masses, and climate refers to long-term patterns—none of these alone account for the rotation-driven deflection that the Coriolis Effect describes.

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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://earthsciencesol.examzify.com>

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

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