

INTRODUCTION TO PHYSICAL GEOLOGY PRACTICE EXAM (SAMPLE)

STUDY GUIDE



**SAMPLE STUDY GUIDE
WITH LIMITED QUESTIONS**

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Table of Contents

Copyright	1
Table of Contents	2
Introduction	3
How to Use This Guide	4
Questions	5
Answers	8
Explanations	10
Next Steps	15

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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. Earth materials are organized by which property?**
 - A. Density
 - B. Color
 - C. Hardness
 - D. Age

- 2. Which sequence correctly describes the stages when continents begin to break apart?**
 - A. Initial uplift rift valley formed new ocean basin formed ocean widens
 - B. Oceans widen initial uplift rift valley new ocean basin
 - C. Rift valley formed ocean widens initial uplift new ocean basin
 - D. New ocean basin formed rift valley initial uplift ocean widens

- 3. Volcanic/extrusive rocks form when magma does what?**
 - A. Rises to Earth's surface
 - B. Solidifies below the surface
 - C. Metamorphoses rocks
 - D. Precipitates from water

- 4. If two rivers have drainage basins of about equal size, the river with higher discharge is explained by what factor?**
 - A. The basin receives more rain
 - B. The basin has steeper gradient
 - C. The basin has more downstream obstacles
 - D. The basin is longer

- 5. Metamorphism can cause which of the following?**
 - A. Deformation such as faults and folds
 - B. Conversion to igneous rock
 - C. Reduction in mineral variety
 - D. Decrease in crystal size

- 6. The Tropic of Capricorn is located at approximately which latitude?**
- A. 23.5°S
 - B. 23.5°N
 - C. 66.5°S
 - D. 66.5°N
- 7. Which boundary is associated with volcanic activity along the edge of a continent (the overriding plate in an oceanic-continental setting)?**
- A. Oceanic-Oceanic Convergent
 - B. Oceanic-Continental Convergent
 - C. Continental-Continental Convergent
 - D. Divergent
- 8. Coal depositional environments are commonly associated with which setting?**
- A. Swamp
 - B. Desert
 - C. Deep marine
 - D. Mountain lake
- 9. For any given river, what is the probability that a 20-year flood will occur in 2018?**
- A. 10%
 - B. 5%
 - C. 1%
 - D. 20%
- 10. What is the depositional environment of coal?**
- A. Swamp
 - B. Desert
 - C. Deep marine
 - D. Mountain lake

Answers

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

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Explanations

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1. Earth materials are organized by which property?

- A. Density
- B. Color
- C. Hardness
- D. Age

Density is the property used to organize Earth materials because it captures how much mass a given volume contains, which strongly governs how materials behave under gravity and in fluids. This intrinsic quality tends to group minerals and rocks by composition and structure, making it a reliable way to classify broad categories. Heavier materials (higher density) relate to different minerals and rocks than lighter ones, and this contrast drives processes like sediment sorting, buoyancy, and gravity-driven separation in both natural settings and industrial contexts. Color, while noticeable, can vary a lot within a single mineral due to impurities and surface effects, so it isn't as dependable for broad organization. Hardness helps identify specific minerals but doesn't neatly separate all Earth materials into coherent groups. Age isn't a property of the material itself—it reflects the history of a sample rather than its physical nature.

2. Which sequence correctly describes the stages when continents begin to break apart?

- A. Initial uplift rift valley formed new ocean basin formed ocean widens
- B. Oceans widen initial uplift rift valley new ocean basin
- C. Rift valley formed ocean widens initial uplift new ocean basin
- D. New ocean basin formed rift valley initial uplift ocean widens

Continental breakup proceeds through a sequence driven by stretching of the lithosphere. First, the extended crust uplifts as tensional forces thicken and buoyant materials respond to thinning. This initial uplift sets up the conditions for fracturing. Next, the stretched crust breaks and subsides along faults, forming a rift valley as the crust splits into blocks. As rifting continues and the valley deepens, water can flood in, creating a new ocean basin where sea-floor spreading will later generate new crust. Finally, the ocean basin widens as new oceanic crust forms at mid-ocean ridges and the two sides move apart, expanding the ocean. That matches the progression: initial uplift rift valley formed new ocean basin formed ocean widens. If the steps were reordered, you'd have water invading before the rift existed or uplift occurring after rifting, which doesn't align with how continental breakup naturally unfolds.

3. Volcanic/extrusive rocks form when magma does what?

- A. Rises to Earth's surface
- B. Solidifies below the surface
- C. Metamorphoses rocks
- D. Precipitates from water

Volcanic/extrusive rocks form when magma reaches Earth's surface as lava and cools rapidly. The eruption relieves pressure and allows the molten rock to spread and solidify quickly, giving rise to very small crystals or a glassy texture. This rapid surface cooling is what distinguishes extrusive rocks from those that crystallize underground, which become coarse-grained intrusive rocks like granite. The other processes listed aren't how volcanic rocks form: metamorphism changes rocks under heat and pressure, and precipitation from water creates sedimentary or chemical rocks, not igneous ones.

4. If two rivers have drainage basins of about equal size, the river with higher discharge is explained by what factor?

- A. The basin receives more rain**
- B. The basin has steeper gradient
- C. The basin has more downstream obstacles
- D. The basin is longer

Discharge is the amount of water moving past a point per unit time, which mostly reflects how much water enters the river system from precipitation. If two drainage basins are about the same size, the one that receives more rainfall produces more runoff and therefore a higher downstream discharge. Steeper gradient speeds up the water but doesn't increase the total volume entering the river, so it affects timing and velocity rather than the overall discharge. Upslope obstacles or dams can delay flow and store water temporarily, altering when peak discharge arrives but not necessarily raising the total discharge. A longer basin can lose more water to evaporation and infiltration along its length, which can reduce discharge rather than increase it. So the higher discharge is best explained by more rainfall in that basin.

5. Metamorphism can cause which of the following?

- A. Deformation such as faults and folds**
- B. Conversion to igneous rock
- C. Reduction in mineral variety
- D. Decrease in crystal size

Metamorphism involves changing minerals and textures in a rock while it remains solid, driven by higher temperature, pressure, and directed stress. This stress rearranges minerals and often causes the rock to deform, producing features that record those conditions. In mountain-building zones, rocks are squeezed and stretched, so you see folds and a layered, aligned texture known as foliation as minerals realign and new metamorphic minerals form. That deformation is a hallmark of metamorphic processes tied to tectonic forces. The option that describes deformation such as faults and folds fits this idea because metamorphism is closely linked to the pressures and stresses that drive deformation and reorganization of minerals. The other statements aren't representative: metamorphism does not turn rocks into igneous rocks by melting (that's magma crystallization, though extreme conditions can partially melt rocks, it's not the normal metamorphic path); it generally creates new minerals (not reduces variety); and crystal sizes typically grow or reorient rather than consistently shrink.

6. The Tropic of Capricorn is located at approximately which latitude?

- A. 23.5°S**
- B. 23.5°N
- C. 66.5°S
- D. 66.5°N

Understanding where the tropics lie is determined by the tilt of Earth's axis, about 23.5 degrees. Because of this tilt, the Sun can be directly overhead at noon only between 23.5 degrees north and 23.5 degrees south of the equator. The southern boundary of that zone is the Tropic of Capricorn, at 23.5°S. So this location is 23.5°S. The other lines are different: 23.5°N is the Tropic of Cancer, and 66.5°N and 66.5°S are the Arctic and Antarctic Circles, not the tropics.

7. Which boundary is associated with volcanic activity along the edge of a continent (the overriding plate in an oceanic-continental setting)?

- A. Oceanic-Oceanic Convergent
- B. Oceanic-Continental Convergent**
- C. Continental-Continental Convergent
- D. Divergent

Subduction at an oceanic-continental convergence boundary drives volcanism right along the edge of the continent. The oceanic slab sinks beneath the continental plate, and as it descends it releases water and other volatiles into the overlying mantle. Those fluids lower the melting point of the mantle wedge, generating magma. This magma, being buoyant, rises to the surface and feeds volcanoes that form a volcanic arc along the continental margin. That's why the volcanic activity sits at the edge where the oceanic plate meets the continent. In contrast, other boundary types don't produce volcanism in the same way at the continental edge: oceanic-oceanic convergence forms volcanic island arcs rather than continental margins, continental-continental convergence mainly builds mountains with little volcanism, and divergent boundaries create volcanism at rifts or mid-ocean ridges rather than along a continent's edge.

8. Coal depositional environments are commonly associated with which setting?

- A. Swamp**
- B. Desert
- C. Deep marine
- D. Mountain lake

Coal forms when plant material accumulates in waterlogged, low-oxygen environments where decay is slowed, creating peat that later gets buried and transformed under heat and pressure. A swamp provides these exact conditions: abundant vegetation, standing or slow-moving water, and stagnant, anoxic conditions that let peat build up instead of fully decaying. Over time, burial and coalification turn that peat into coal. Deserts lack the necessary vegetation and moisture, deep marine settings are dominated by marine organisms rather than land-derived peat, and mountain lakes generally don't sustain the prolonged anoxic, peat-forming environment needed for coal.

9. For any given river, what is the probability that a 20-year flood will occur in 2018?

- A. 10%
- B. 5%**
- C. 1%
- D. 20%

In hydrology, a 20-year flood is defined by an annual exceedance probability of 1 in 20, or 5%. That means in any given year, the chance that the river exceeds this threshold is 5%, regardless of what happened in previous years. So for 2018, the probability of experiencing a flood of that magnitude is 5%. This doesn't imply it won't happen again soon or that it happens exactly once every 20 years; each year is an independent 5% chance.

10. What is the depositional environment of coal?

A. Swamp

B. Desert

C. Deep marine

D. Mountain lake

Coal forms from plant material that accumulates in waterlogged, oxygen-poor environments. A swamp provides the ideal setting: dead vegetation piles up as peat in stagnant, wet conditions where decay is slow due to low oxygen. With burial under sediments and increasing heat and pressure over time, this peat undergoes coalification, transforming into coal. Desert environments lack the persistent water and anoxic conditions needed to preserve plant matter; deep marine settings are dominated by sediments from oceans and organisms, not thick peat; mountain lakes may have some organic material but typically don't provide the long, continuous peat formation and subsidence required for coal.

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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://introtophysicalgeology.examzify.com>

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

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