

EARTH SCIENCE – EARTH'S WATERS PRACTICE TEST (SAMPLE)

STUDY GUIDE



**SAMPLE STUDY GUIDE
WITH LIMITED QUESTIONS**

**VISIT US ONLINE FOR
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. Define evapotranspiration and potential evapotranspiration.**
 - A. ET is evaporation only; PET is precipitation
 - B. ET is evaporation from soil only; PET is potential rainfall
 - C. ET is actual evaporation plus plant transpiration; PET is the amount of ET that would occur if water availability were unlimited
 - D. ET is plant transpiration only; PET equals rainfall
- 2. What is water from a sea or ocean with an average salinity of 35 ppt called?**
 - A. Seawater
 - B. Freshwater
 - C. Brackish water
 - D. Saltwater
- 3. Which pair consists of heating processes?**
 - A. Melting and Evaporation
 - B. Condensation and Freezing
 - C. Melting and Condensation
 - D. Evaporation and Freezing
- 4. What are water rights and allocation issues?**
 - A. Legal rules for allocating water among users; can involve riparian rights, prior appropriation, basins, and cross-border allocations; conflicts arise in scarcity
 - B. Only seasonal forecasts determine water distribution
 - C. Water rights refer to property ownership of rivers
 - D. Allocation issues are solved solely by market price
- 5. Another large system of ocean currents that affect weather and climate is known as what?**
 - A. Gulf Stream
 - B. El Niño
 - C. Great Ocean Conveyor Belt
 - D. Pacific Gyre

6. Which process occurs when water vapor cools and condenses to form clouds?
- A. Condensation
 - B. Evaporation
 - C. Sublimation
 - D. Precipitation
7. Which ocean is the third largest and lies between India, Africa, and the Indonesian islands?
- A. Indian Ocean
 - B. Pacific Ocean
 - C. Atlantic Ocean
 - D. Arctic Ocean
8. The positive hydrogen end of one water molecule attracts the __ ends of neighboring water molecules.
- A. negative oxygen
 - B. positive hydrogen
 - C. positive oxygen
 - D. negative hydrogen
9. What happens to wave energy as depth decreases toward shore?
- A. It increases as depth decreases toward shore, causing waves to steepen and break
 - B. It decreases near the shore
 - C. It remains constant with depth
 - D. It is unaffected by depth
10. In the water-budget equation $P = ET + R + \Delta S$, what does ΔS represent?
- A. Change in storage
 - B. Evapotranspiration
 - C. Precipitation
 - D. Runoff

Answers

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

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Explanations

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1. Define evapotranspiration and potential evapotranspiration.

- A. ET is evaporation only; PET is precipitation
- B. ET is evaporation from soil only; PET is potential rainfall
- C. ET is actual evaporation plus plant transpiration; PET is the amount of ET that would occur if water availability were unlimited**
- D. ET is plant transpiration only; PET equals rainfall

ET represents how water is lost to the atmosphere from a landscape, and it includes both evaporation from surfaces (soil, water) and transpiration from plant leaves. The amount of ET that would occur if water were not limiting is called potential evapotranspiration, which depends on climate factors like temperature, solar radiation, humidity, and wind. So the correct understanding is that ET is actual evaporation plus plant transpiration, while PET is the hypothetical maximum ET under unlimited water supply. This distinguishes ET from rainfall and from evaporation alone, since plants add transpiration and water availability sets how much ET can actually happen. In practice, ET may be lower than PET when soils are dry, and PET reflects atmospheric demand rather than actual water loss.

2. What is water from a sea or ocean with an average salinity of 35 ppt called?

- A. Seawater**
- B. Freshwater
- C. Brackish water
- D. Saltwater

Salinity tells us how salty water is, measured in parts per thousand. The ocean has an average salinity of about 35 ppt, so water from a sea or ocean with that salinity is seawater. Freshwater has very low salinity, brackish water sits between freshwater and seawater in salinity, and while saltwater is a common everyday term for salty water, the precise term for ocean water is seawater. Therefore, water from the sea with about 35 ppt salinity is seawater.

3. Which pair consists of heating processes?

- A. Melting and Evaporation**
- B. Condensation and Freezing
- C. Melting and Condensation
- D. Evaporation and Freezing

Endothermic phase changes absorb heat, so a pair that includes two processes requiring energy input is the one that's being tested. Melting, where a solid becomes a liquid, needs energy to weaken the crystal structure; evaporation, where a liquid becomes a gas, also needs energy to allow molecules to escape into the vapor phase. That means both steps in the pair are heating processes. In the other options, at least one step releases heat rather than absorbing it. Condensation (gas to liquid) and freezing (liquid to solid) are exothermic, releasing heat as the substance changes state. So they aren't both heating processes. Similarly, mixing a heating process with a cooling one in the remaining pairs shows they aren't both heating either.

4. What are water rights and allocation issues?

- A. Legal rules for allocating water among users; can involve riparian rights, prior appropriation, basins, and cross-border allocations; conflicts arise in scarcity
- B. Only seasonal forecasts determine water distribution**
- C. Water rights refer to property ownership of rivers
- D. Allocation issues are solved solely by market price

Water rights and allocation are about who can use water and how much, governed by laws, rules, and institutions. The main idea is that water use is regulated to resolve competing needs, especially in areas of scarcity. Legal frameworks define who has access to water and under what conditions, including systems like riparian rights (for those with land along a water source) and prior appropriation (first in time, first in right), as well as basin-wide or cross-border agreements. When demand exceeds supply, conflicts arise, and these rules help manage conflicts through permits, allocations, and enforcement. It's not just about forecasts or hydrology, and water rights aren't simply ownership of a river. Rights are about the legal permission to use water resources, often with limits and responsibilities. Allocation issues aren't solved solely by market price either; while pricing can influence use, governance, environmental needs, infrastructure, and interstate or international agreements also shape how water is allotted and conserved.

5. Another large system of ocean currents that affect weather and climate is known as what?

- A. Gulf Stream
- B. El Niño
- C. Great Ocean Conveyor Belt**
- D. Pacific Gyre

The big idea here is the global thermohaline circulation, often called the Great Ocean Conveyor Belt. This is the continuous loop of surface and deep currents worldwide that is driven by differences in water density caused by temperature and salinity. Warm, lighter water moves toward higher latitudes near the surface, where it cools, becomes denser, sinks, and travels as deep currents to other regions, eventually rising again and completing the loop. This massive system links all the oceans and moves heat around the planet, helping to regulate climate and weather patterns. Why this best fits: it describes a global, long-lasting circulation that influences climate on a broad scale by redistributing heat and affecting nutrient and carbon exchange. The other options are important current patterns or events, but they are narrower in scope: the Gulf Stream is a major surface current within part of the system; El Niño is a tropical Pacific climate pattern that shifts surface temperatures and weather but is not a planet scale circulation; a Pacific Gyre is a large surface current system specific to the Pacific. The Great Ocean Conveyor Belt captures the idea of the global, density-driven circulation that underpins long-term climate behavior.

6. Which process occurs when water vapor cools and condenses to form clouds?

A. Condensation

B. Evaporation

C. Sublimation

D. Precipitation

Condensation is the process where water vapor in the air loses enough energy to change into liquid water. As moist air rises and cools, water vapor molecules slow down and cling together around tiny particles in the air, forming liquid droplets that make up clouds. Evaporation would be liquid becoming vapor, not forming clouds directly. Sublimation is solid turning directly into gas, and precipitation is the falling rain or snow that happens after droplets in the cloud grow too large. So the described step—vapor cooling and turning into liquid droplets that create clouds—is condensation.

7. Which ocean is the third largest and lies between India, Africa, and the Indonesian islands?

A. Indian Ocean

B. Pacific Ocean

C. Atlantic Ocean

D. Arctic Ocean

Oceans are ranked by size, and their geographic borders show where each one sits. The Indian Ocean is the third largest ocean, and its location matches the description given: it lies between the Indian subcontinent (India) and the coast of Africa, with its eastern edge extending toward the Indonesian islands. It is bordered by Asia to the north, Africa to the west, Australia and the Indonesian archipelago to the east, and the Southern Ocean to the south. That combination of size and position is why this ocean fits the clue about being between India, Africa, and the Indonesian islands.

8. The positive hydrogen end of one water molecule attracts the __ ends of neighboring water molecules.

A. negative oxygen

B. positive hydrogen

C. positive oxygen

D. negative hydrogen

Water molecules are polar, with oxygen pulling electron density toward itself. This gives oxygen a partial negative charge and the hydrogens a partial positive charge. Because of that, the positive hydrogen end of one molecule is attracted to the negatively charged ends on neighboring molecules, which are the oxygen ends. This hydrogen-bonding interaction between the hydrogen of one molecule and the oxygen of another helps hold water together and explains its cohesion and other unique properties.

9. What happens to wave energy as depth decreases toward shore?

- A. It increases as depth decreases toward shore, causing waves to steepen and break**
- B. It decreases near the shore
- C. It remains constant with depth
- D. It is unaffected by depth

As depth gets shallower, waves slow down and their interaction with the seabed causes the crests to grow taller in a process called shoaling. The amount of energy carried by the wave stays (roughly) the same as it travels toward shore, but because the wave slows, the energy becomes more concentrated in a smaller cross-section. That increased energy density makes the waves steeper, with larger height relative to the wavelength, until they become unstable and break near the shore. So, wave energy concentrates as depth decreases, leading to steeper waves and breaking.

10. In the water-budget equation $P = ET + R + \Delta S$, what does ΔS represent?

- A. Change in storage**
- B. Evapotranspiration
- C. Precipitation
- D. Runoff

In a water-budget, you account for where water comes from and where it goes over a time period. Precipitation adds water to the system, while evapotranspiration and runoff remove water. The remaining piece of the balance is the change in stored water, represented by ΔS . This term captures how much water is stored in soils, groundwater, surface water, and even snowpack or ice, increasing or decreasing over the interval. A positive ΔS means storage has grown, while a negative ΔS means storage has been depleted. So ΔS specifically represents change in storage. For example, if precipitation is 100 units and ET plus runoff total 60 units, ΔS would be 40 units, indicating storage increased by 40. The other terms—evapotranspiration, precipitation, and runoff—are the inputs or outputs, not the storage change.

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://earthscienceearthswaters.examzify.com>

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

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