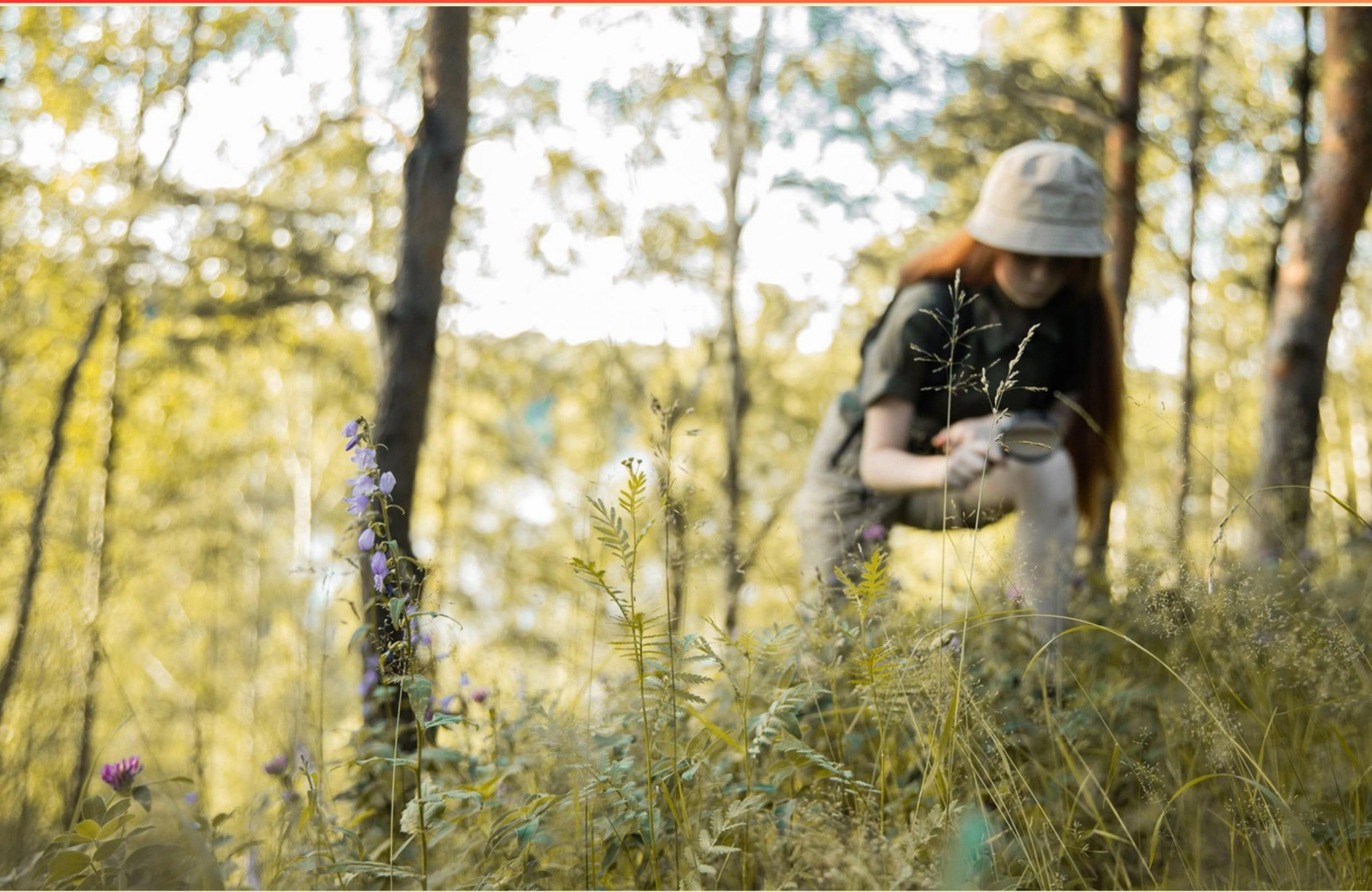


PE ENVIRONMENTAL QUALITATIVE PRACTICE EXAM (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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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. The land spreading criteria for wastes high in cadmium and PCBs are designed to protect which resource?**
 - A. Groundwater
 - B. Surface water
 - C. Air quality
 - D. Soil quality
- 2. What is the focus of Title 40 of the Code of Federal Regulations (40 CFR)?**
 - A. Protection of the environment and human health
 - B. Regulation of building codes
 - C. Energy policy
 - D. Agricultural subsidies
- 3. Which NO_x control technique is commonly used to reduce NO_x formation in internal combustion engines?**
 - A. Exhaust Gas Recirculation
 - B. Three-way catalytic converter
 - C. Positive crankcase ventilation
 - D. Oxygenated fuels
- 4. What average particle diameters define the lower and upper particulate matter as a pollutant?**
 - A. 0.5-1 μm
 - B. 1.5-7.5 μm
 - C. 2.5-10 μm
 - D. 10.5-20 μm
- 5. A modification class that is used to modify an existing permit to incorporate groundwater monitoring wells is:**
 - A. Class I modification
 - B. Class III modification
 - C. Class IV modification
 - D. Class II modification

- 6. Which ion is not typically associated with water hardness?**
- A. Calcium
 - B. Magnesium
 - C. Iron
 - D. Sodium
- 7. What is the National Oil and Hazardous Substance Pollution Contingency Plan (NCP) commonly known as?**
- A. A state-level plan for water management
 - B. National Oil and Hazardous Substance Pollution Contingency Plan (NCP), commonly known as the National Contingency Plan
 - C. A program for air quality compliance
 - D. A framework for safe drinking water
- 8. Which of the following would NOT result in an improved performance of secondary clarifiers?**
- A. decreasing the depth of the inlet baffles
 - B. increasing the length of influent weirs
 - C. feeding chemicals to improve the settling of bio-floc
 - D. constructing a third secondary clarifier
- 9. The organic components typically found in MSW are:**
- A. carbon, hydrogen, and oxygen only
 - B. carbon, hydrogen, oxygen, nitrogen, sulfur, and ash
 - C. carbon, oxygen, and phosphorus
 - D. carbon, hydrogen, oxygen, and heavy metals
- 10. Which GPS term refers to a rover receiving position corrections at the time of survey from a GPS base station?**
- A. Real time kinematic differential GPS
 - B. Differential correction
 - C. Dilution of precision
 - D. Post processed kinematic positioning

Answers

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

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Explanations

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1. The land spreading criteria for wastes high in cadmium and PCBs are designed to protect which resource?

A. Groundwater

B. Surface water

C. Air quality

D. Soil quality

Groundwater protection is the main objective here. When wastes high in cadmium and PCBs are spread on land, contaminants can move downward through the soil with percolating water and reach groundwater. Groundwater is a major drinking-water source; once contaminated, it's very hard to clean up. Cadmium is a toxic metal that can be mobilized in soil water, especially under certain pH conditions, and PCBs are persistent organic contaminants that, even though they tend to stick to soil, can still leach into groundwater. So the land-spreading criteria are designed to limit how much of these substances can be applied and to account for soil properties and depth to groundwater, reducing the risk of groundwater contamination. While surface water and air can be affected via other pathways, the rules focus on preventing groundwater pollution.

2. What is the focus of Title 40 of the Code of Federal Regulations (40 CFR)?

A. Protection of the environment and human health

B. Regulation of building codes

C. Energy policy

D. Agricultural subsidies

The focus is on protecting the environment and human health through federal environmental regulations. Title 40 of the CFR contains the rules that the Environmental Protection Agency uses to regulate pollution and safeguard air, water, and land. It provides the regulatory framework for implementing major environmental laws—like the Clean Air Act, Clean Water Act, Safe Drinking Water Act, and hazardous waste rules—covering standards, permits, reporting, and enforcement to reduce pollution and protect ecosystems and people. That's why it fits: building codes, energy policy, and agricultural subsidies are governed by other areas of law and regulation, not the environmental protection framework codified in this title.

3. Which NO_x control technique is commonly used to reduce NO_x formation in internal combustion engines?

A. Exhaust Gas Recirculation

B. Three-way catalytic converter

C. Positive crankcase ventilation

D. Oxygenated fuels

Controlling NO_x formation in engines hinges on lowering combustion temperatures and reducing the oxygen available during the flame. Exhaust Gas Recirculation achieves this by routing a portion of the exhaust back into the intake. The recirculated gas is inert relative to combustion, diluting the air–fuel mixture and increasing the charge's heat capacity, which lowers peak temperatures and slows the burning process. With lower peak temperatures, the thermal NO_x pathway is suppressed, so NO_x formation drops significantly. In contrast, a three-way catalytic converter treats NO_x after combustion, converting it to nitrogen in the exhaust, but it depends on maintaining a near-stoichiometric air–fuel ratio and does not prevent NO_x formation inside the cylinder. Positive crankcase ventilation mainly handles crankcase emissions and has little direct effect on NO_x formation in the combustion chamber. Oxygenated fuels can modify combustion characteristics, but they are not the primary, reliable method to directly suppress NO_x formation in engines.

4. What average particle diameters define the lower and upper particulate matter as a pollutant?

- A. 0.5-1 μm
- B. 1.5-7.5 μm
- C. 2.5-10 μm**
- D. 10.5-20 μm

Particulate matter is classified by how large the particles are, because size affects health and behavior in the air. The two main regulatory categories are PM_{2.5} (2.5 micrometers and smaller) and PM₁₀ (up to 10 micrometers). The range that defines the coarse portion between these cutoffs is 2.5 to 10 micrometers, which is why this option best fits the idea of the lower and upper limits used to describe common PM pollutants. Other ranges don't align with the standard size classifications: smaller than 2.5 μm misses the lower fine-particle cutoff, ranges that span both sides of the boundary aren't the standard definitions, and larger ranges exceed the PM₁₀ category.

5. A modification class that is used to modify an existing permit to incorporate groundwater monitoring wells is:

- A. Class I modification
- B. Class III modification
- C. Class IV modification
- D. Class II modification**

Modifications to a permit are categorized by how much they change the permit and what review they require. Adding groundwater monitoring wells means you have to update the permit to specify the new monitoring locations, sampling frequency, parameters, QA/QC, reporting, and any related corrective actions. This changes the monitoring obligations and the permit text itself, and typically triggers regulatory review and public involvement, but it doesn't entail a complete overhaul of the facility's processes or emission limits. That middle level of change is why it fits a moderate modification category. A purely administrative edit that doesn't affect monitoring or limits would be a minor modification, while changes that alter emission limits or expand the facility's scope would be major and require more extensive proceedings.

6. Which ion is not typically associated with water hardness?

- A. Calcium
- B. Magnesium
- C. Iron
- D. Sodium**

Hardness comes from the ions that form insoluble scales with carbonate and bicarbonate in water, mainly calcium and magnesium. These multivalent cations readily precipitate as calcium carbonate and magnesium carbonate, giving water its characteristic scaling and soap-foaming issues. Sodium, on the other hand, is monovalent and tends to stay dissolved as sodium salts, so it doesn't contribute to hardness in the same way. Iron can appear as Fe²⁺ or Fe³⁺ and can affect water quality in other ways, but it isn't the primary driver of hardness. This is why the sodium ion is not typically associated with water hardness.

7. What is the National Oil and Hazardous Substance Pollution Contingency Plan (NCP) commonly known as?

- A. A state-level plan for water management
- B. National Oil and Hazardous Substance Pollution Contingency Plan (NCP), commonly known as the National Contingency Plan**
- C. A program for air quality compliance
- D. A framework for safe drinking water

The National Contingency Plan is the nationwide framework for responding to oil spills and releases of hazardous substances. Because it serves as the national blueprint guiding how federal, state, and local agencies coordinate, mobilize resources, and carry out cleanup, it's commonly known by the shorter name—the National Contingency Plan. The other options describe topics like state water management, air quality programs, or safe drinking water, which are not about the contingency planning for oil spills and hazardous substances.

8. Which of the following would NOT result in an improved performance of secondary clarifiers?

- A. decreasing the depth of the inlet baffles**
- B. increasing the length of influent weirs
- C. feeding chemicals to improve the settling of bio-floc
- D. constructing a third secondary clarifier

Improving a secondary clarifier's performance lies in controlling how the incoming flow is distributed and how long solids stay in the basin to settle. The inlet arrangement, including baffles, is key to dissipating jet energy and steering flow across the clarifier so you avoid short-circuiting and resuspension of settled solids. Decreasing the depth of the inlet baffles would weaken their ability to intercept and redirect the incoming jet, allowing high-velocity flow to lag through the basin and promoting short-circuiting and disturbance of settled sludge. That makes settling less efficient, so this change would not improve performance. In contrast, increasing the length of influent weirs spreads the flow over a longer area, reducing short-circuiting; adding chemicals helps flocculation and settling; and adding a third secondary clarifier increases capacity and residence time. All of these would generally enhance performance.

9. The organic components typically found in MSW are:

- A. carbon, hydrogen, and oxygen only
- B. carbon, hydrogen, oxygen, nitrogen, sulfur, and ash**
- C. carbon, oxygen, and phosphorus
- D. carbon, hydrogen, oxygen, and heavy metals

Organic matter in municipal solid waste is built from carbon-based compounds, so the main elements you expect are carbon, hydrogen, and oxygen. Nitrogen and sulfur are also common because many organic molecules (like proteins and certain plastics with additives) contain these elements. Ash represents the inorganic mineral residue that accompanies the organic fraction when waste is burned or analyzed, and it's typically reported alongside the organic components because it influences combustion behavior and residue characteristics. So listing carbon, hydrogen, oxygen, nitrogen, sulfur, and ash captures the typical elemental makeup encountered in MSW's organic-rich fraction. Other options omit one or more of these elements or include items that aren't characteristic of the organic content.

10. Which GPS term refers to a rover receiving position corrections at the time of survey from a GPS base station?

A. Real time kinematic differential GPS

B. Differential correction

C. Dilution of precision

D. Post processed kinematic positioning

Real-time kinematic differential GPS describes getting position corrections from a base station while you're surveying. The base knows its exact position and computes corrections for the rover's measurements, sending them in real time so the rover can apply them immediately and determine a precise position on the spot. This is what gives real-time, centimeter-level accuracy during the survey. Differential corrections without the real-time aspect would be applied after data collection (post-processed), and dilution of precision is about satellite geometry affecting error, not about receiving corrections. Post-processed positioning uses corrections after the fact rather than during the survey.

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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://peenviqualitative.examzify.com>

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

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