Bioenvironmental Engineering (BEE) Block 10 Practice Exam (Sample)

Study Guide

BY EXAMZIFY

Everything you need from our exam experts!

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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

1. Can the HAZMATID EliteTM quantify chemicals?

A. Yes

B. No

C. Sometimes

D. Not sure

2. Which option correctly lists the resources used to help preserve samples?

A. United States Air Force School Of Aerospace Medicine (USAFSAM) Laboratory and Army Public Health Command (USAPHC)

B. United States Air Force School Of Aerospace Medicine (USAFSAM) Laboratory

C. Army Public Health Command (USAPHC)

D. Centers for Disease Control and Prevention (CDC)

3. Which item is included as an area to consider when evaluating a site?

A. Soil Composition

B. Shopping Center Proximity

C. Proximity to entertainment venues

D. Color of buildings

4. What is the general term for sampling not based on probability that relies on knowledge or judgment?

A. A non-statistical

B. Simple random

C. Stratified random

D. Systematic grid

5. Which type of auger has several different types of interchangeable heads and is designed to take larger volumes of soil?

A. Screw

B. Bucket

C. Hand

D. Gas-powered

6. Which sampler should be used in rocky soils as a preferred option for undisturbed subsurface sampling?

A. Veihmeyer Tube Sampler

B. Push Tube Sampler

C. Split Spoon Tube Sampler

D. A Trier Sampler

7. Biased sampling is also known as which term?

A. Biased sampling

B. Judgmental sampling

C. Random sampling

D. Systematic sampling

8. Which factor is listed as a pollution concern when evaluating a site?

A. Proximity to factories

B. Air Pollution

C. Water Pollution

D. Noise Pollution

9. Can augers be used to sample for volatile organic compounds (VOCs)?

A. Yes

B. No

C. Only hand augers

D. Only gas-powered

10. Which of the following is a listed type of tube sampler?

A. Veihmeyer

B. Auger

C. Core sampler

D. Gravimeter

Answers

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

Explanations

1. Can the HAZMATID EliteTM quantify chemicals?

A. Yes

B. No

C. Sometimes

D. Not sure

HazMatID Elite is built to identify chemicals, not measure how much of them is present. It works by collecting a spectrum from the sample and comparing that fingerprint to a library to name the substance. Quantifying an amount would require calibration, known sample geometry, and often a different analytical approach because spectral intensity can vary with concentration, path length, matrix effects, and overlapping signals. In the field, this device provides a chemical identity, not a concentration value. For measurement of quantity, you'd need lab-based methods such as GC-MS or other calibrated quantitative techniques.

2. Which option correctly lists the resources used to help preserve samples?

A. United States Air Force School Of Aerospace Medicine (USAFSAM) Laboratory and Army Public Health Command (USAPHC)

B. United States Air Force School Of Aerospace Medicine (USAFSAM) Laboratory

C. Army Public Health Command (USAPHC)

D. Centers for Disease Control and Prevention (CDC)

When preserving samples in this context, you rely on both specialized laboratory capabilities and military public health guidance. The USAF School of Aerospace Medicine Laboratory provides the hands-on technical capacity for handling, processing, and storing specimens, including validated preservation methods, temperature-controlled storage, and proper chain-of-custody practices essential for reliable sample integrity in aerospace medicine research. The Army Public Health Command supplies the standard operating procedures, regulatory oversight, and public health expertise that ensure those preservation methods meet DoD and Army requirements and that samples are managed consistently across programs. Together, these two resources cover both the technical preservation work and the necessary policy and oversight to keep samples viable and compliant. While civilian agencies like the CDC are important public health partners, the most relevant resources for preserving samples in this military/public health context are the combination of the USAF laboratory capabilities and the Army public health guidance.

3. Which item is included as an area to consider when evaluating a site?

A. Soil Composition

B. Shopping Center Proximity

C. Proximity to entertainment venues

D. Color of buildings

Soil properties are a key factor when evaluating a site because they determine how water and contaminants behave underground, as well as how the ground will perform for construction and any containment systems. The soil's texture (the mix of sand, silt, and clay), organic matter, mineral content, pH, and structure influence permeability, porosity, sorption of contaminants, drainage, and the potential for settlement or instability. Together, these characteristics tell you whether a site can safely support foundations, resist flooding or erosion, and prevent unwanted migration of pollutants. Choices like proximity to shopping centers or entertainment venues are more about land-use planning or social context, not the environmental or geotechnical suitability of the site. The color of buildings is an aesthetic consideration and generally does not affect environmental site evaluation, unless you were specifically analyzing energy use or microclimate in a broader urban design context, which is not the standard focus for evaluating a site in this context.

4. What is the general term for sampling not based on probability that relies on knowledge or judgment?

A. A non-statistical

B. Simple random

C. Stratified random

D. Systematic grid

In sampling, you distinguish methods that rely on random selection (probability sampling) from those that rely on the investigator's knowledge or judgment (non-probability or non-statistical sampling). When you choose units based on what you know about the situation, or pick convenient or specifically targeted sites because they're most informative, you're using a non-statistical approach. This captures the general term described: sampling not based on probability and driven by expertise or judgment. This approach is common in field work where a complete sampling frame isn't available or when quick, focused insights are needed. It includes purposive or convenience selections, which are practical but can introduce bias and limit how well you can generalize findings to a larger population. The other terms imply some random component or a systematic scheme with known probabilities. Simple random, stratified random, and systematic grid all involve probability or a prescribed random-like process, which is not the case when the choice is driven by knowledge or judgment rather than a probabilistic rule.

5. Which type of auger has several different types of interchangeable heads and is designed to take larger volumes of soil?

A. Screw

B. Bucket

C. Hand

D. Gas-powered

The main idea here is choosing a tool that is built to move larger amounts of soil and can be customized with different heads. A bucket auger fits this best because it digs and simultaneously collects soil in a bucket, allowing a larger volume to be moved with each pass. The ability to swap in different heads makes it versatile for various soil conditions and tasks, so you can optimize for quicker removal and different excavation needs. In contrast, a screw auger mainly relies on the spiral blade to bore and move soil, which is efficient for creating holes but isn't designed to maximize the collected volume in one go. A hand auger is manual and typically handles only small, shallow samples. A gas-powered auger provides power for larger or deeper holes but doesn't inherently focus on interchangeable heads for increasing volume, making it less about the variable head configuration and more about raw power and depth.

6. Which sampler should be used in rocky soils as a preferred option for undisturbed subsurface sampling?

A. Veihmeyer Tube Sampler

B. Push Tube Sampler

C. Split Spoon Tube Sampler

D. A Trier Sampler

When sampling in rocky soils, the goal is to preserve the natural soil structure while obtaining an undisturbed subsurface sample. The Veihmeyer tube sampler achieves this by using a rigid, thick-walled cylinder to take a relatively undisturbed soil column as it is driven or pushed into the subsurface. This design minimizes disturbance to the soil fabric and moisture content, which is crucial in rocky or hard layers where other methods can smear, fracture, or otherwise alter the in-situ conditions. The result is a representative sample of the soil mass that retains its density and stratification, making it preferable for undisturbed sampling in rocky conditions. Push-tube samplers are useful but can struggle with very hard layers and may disturb the soil structure more as they advance. Split-spoon samplers are typically used for disturbed samples and soil behavior tests that don't require intact structure. Trier samplers are robust and used in certain stiff or cohesive soils, but the Veihmeyer tube's simplicity and ability to yield an undisturbed column in rocky soils make it the better choice in this scenario.

7. Biased sampling is also known as which term?

A. Biased sampling

B. Judgmental sampling

C. Random sampling

D. Systematic sampling

Biased sampling occurs when the researcher selects units based on their own judgment rather than using random or objective criteria, which can skew results. The term that describes this approach is judgmental sampling, also called purposive sampling. It's used when you want to focus on particular characteristics or experiences that you believe are most informative for the study. Because the sample isn't randomly chosen, the results may not generalize to the broader population. In contrast, random sampling aims to give every member of the population an equal chance of selection, reducing bias, while systematic sampling selects units at regular intervals. Both are designed to minimize selection bias, unlike judgmental (biased) sampling.

8. Which factor is listed as a pollution concern when evaluating a site?

A. Proximity to factories

B. Air Pollution

C. Water Pollution

D. Noise Pollution

Noise pollution is a pollution concern in site evaluations because sound levels from a site or nearby activities can directly affect people's health, comfort, and overall quality of life, and they are governed by regulatory limits. In practice, you assess existing ambient noise, anticipate future sources from the site (equipment, traffic, operations), and plan mitigations like quieter equipment, barriers, increased distance, or restricted operating hours. This makes noise a tangible, controllable factor that planners must address to ensure the site fits with surrounding uses and complies with standards. Proximity to factories points to potential pollution risk but isn't a pollutant itself, while air and water pollution refer to actual contaminants rather than nuisance factors; the question highlights a pollution concern that is often specifically addressed in siting due to its direct impact on people and regulatory control, which is noise pollution.

9. Can augers be used to sample for volatile organic compounds (VOCs)?

A. Yes

B. No

C. Only hand augers

D. Only gas-powered

VOCs are measured by capturing the gas phase where these compounds actually reside, not by collecting solid soil material. An auger is designed to remove soil cores and bring solid samples back for analysis. It does not sample the air or pore-gas within the soil in a way that yields a representative VOC concentration, and it can even disturb or contaminate VOCs through degassing or from drilling fluids and the auger itself. For VOCs, use dedicated air or soil-gas sampling methods—such as sorbent tubes or evacuated canisters for ambient air, or soil-gas probes and headspace techniques for soil VOCs. So augers are not used to sample VOCs.

10. Which of the following is a listed type of tube sampler?

A. Veihmeyer

B. Auger

C. Core sampler

D. Gravimeter

Tube samplers are designed to capture a relatively undisturbed column of soil inside a hollow tube so the sample stays representative of depth. Veihmeyer is the name most closely associated with a standard tube sampler used in soil sampling, where a tube is inserted into the soil to retrieve a relatively intact core. This makes it a listed type of tube sampler. An auger is a penetrating tool that twists into the soil to pull out material, but it doesn't function as a simple tube sampler and often disturbs the soil structure. A core sampler does collect a cylindrical core, and while it is similar in purpose, it's typically categorized separately from the traditional "tube sampler" family. A gravimeter is a device for measuring gravity, not a sampling tool, so it wouldn't be considered a tube sampler.

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://beeblock10.examzify.com

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