

ENGINEERING AND CONSTRUCTION SURVEYING 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. Which term describes the process of transferring a known elevation from a benchmark to a working point using differential leveling?**
 - A. Reference point
 - B. Plumb line
 - C. Elevation benchmark transfer
 - D. Site grading plan

- 2. Which term is used for marking the locations of construction elements on site according to the design plans?**
 - A. Grade stake
 - B. Cut stake
 - C. Fill stake
 - D. Layout survey (construction)

- 3. Identify the coastal protection feature that is typically sloped and placed to absorb wave energy along a shoreline.**
 - A. Revetment
 - B. Seawall
 - C. Anchorage area
 - D. Multibeam echo sounder survey

- 4. Which term describes the prepared native or engineered soil surface upon which pavement layers are constructed?**
 - A. Subgrade
 - B. Median
 - C. Shoulder
 - D. Borrow pit

- 5. What term describes the horizontal distance between two adjacent transmission towers?**
 - A. Span length
 - B. Conductor clearance
 - C. Grounding grid survey
 - D. Substation survey

- 6. Which OLS surface slopes upward and outward from the edges of the runway strip/approach surface?**
- A. Inner horizontal surface
 - B. Conical surface
 - C. Transitional surface
 - D. Approach surface
- 7. Which term describes the stake marking the intersection of the design cut/fill slope with the natural ground surface?**
- A. Cut section
 - B. Borrow pit
 - C. Subgrade
 - D. Slope stake
- 8. Which term describes the survey that plans the substation's layout including equipment positions and grounding network?**
- A. Wind turbine siting survey
 - B. Easement corridor (power)
 - C. Substation survey
 - D. Catenary curve
- 9. What general term is used for determining the exact position of each support structure along a route in transmission or telecom projects?**
- A. Structure spotting
 - B. Plot plan
 - C. Equipment layout survey
 - D. Process unit survey
- 10. What term refers to the comprehensive assessment of a port facility's navigation channels and landside areas?**
- A. Bathymetric contour (isobath)
 - B. Marine terminal survey
 - C. Anchorage area
 - D. Dock survey

Answers

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

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Explanations

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1. Which term describes the process of transferring a known elevation from a benchmark to a working point using differential leveling?

- A. Reference point
- B. Plumb line
- C. Elevation benchmark transfer**
- D. Site grading plan

Transferring a known elevation from a benchmark to a working point using differential leveling is called elevation benchmark transfer. The process relies on a benchmark with a precisely known elevation. By setting up the level between the benchmark and the working point, you take a back-sight reading on the benchmark and a fore-sight reading on the working point. The elevation of the working point is then computed as the benchmark elevation plus the difference between the back-sight and fore-sight readings ($E_p = E_B + (BS - FS)$). This method is the standard way to carry a height reference from a fixed mark to another location for staking out or construction. A reference point is just a reference location without necessarily having a known elevation. A plumb line is used to establish vertical alignment, not to transfer elevations. A site grading plan is a design document showing proposed earthwork, not the measurement procedure itself.

2. Which term is used for marking the locations of construction elements on site according to the design plans?

- A. Grade stake
- B. Cut stake
- C. Fill stake
- D. Layout survey (construction)**

Translating design plans to the field to mark exact locations is the essence of construction layout. The term used is layout survey (construction layout). This process establishes control points and transfers lines, centerlines, and dimensions from the drawings to the site, so that walls, columns, footings, utilities, and other elements are placed exactly where the plans specify. Crews set out stakes, strings, and marks to guide construction and ensure proper alignment, spacing, and orientation with the drawings. The other stakes relate to earthwork rather than marking element locations: grade stakes indicate target elevations for final grade, while cut and fill stakes show how much material to remove or add.

3. Identify the coastal protection feature that is typically sloped and placed to absorb wave energy along a shoreline.

- A. Revetment**
- B. Seawall
- C. Anchorage area
- D. Multibeam echo sounder survey

Coastal protection structures are designed to dissipate wave energy rather than just block it. A revetment is a sloped barrier placed along the shore, built with rocks or concrete armor units, that breaks up and absorbs incoming waves as they run up the face. The slope helps dissipate energy across a broad area, reducing erosion at the toe and along the shoreline. In contrast, a seawall is typically vertical or near-vertical and mainly reflects waves rather than absorbing energy, while an anchorage area and a multibeam echo sounder survey are not protective shoreline features.

4. Which term describes the prepared native or engineered soil surface upon which pavement layers are constructed?

A. Subgrade

B. Median

C. Shoulder

D. Borrow pit

The key idea is naming the foundation surface that actual pavement layers rest on. This is the subgrade—the prepared native or engineered soil surface that carries the pavement above. It's treated through compaction and sometimes stabilization to achieve the required strength and stiffness so loads from traffic are distributed safely into the ground. The subgrade sits below the subbase and base layers and forms the essential foundation for the whole pavement structure. The other terms describe unrelated road features or material sources: the median is the central division between opposing traffic lanes, the shoulder is the paved or graded edge beside the travel lanes, and a borrow pit is a source from which fill material is obtained.

5. What term describes the horizontal distance between two adjacent transmission towers?

A. Span length

B. Conductor clearance

C. Grounding grid survey

D. Substation survey

Span length is the distance between two successive transmission towers, i.e., the horizontal spacing along the line. This spacing is a key design parameter because it directly affects conductor sag, tension, and overall stability under load and weather. The term describes how far apart the supports are, not how high the conductor sits above the ground or other electrical aspects. The other terms refer to different aspects of the system—conductor clearance is the vertical space below the line, grounding grid survey deals with the grounding network, and substation survey relates to layouts and conditions within a substation. Since the question asks for the horizontal distance between adjacent towers, span length is the correct term.

6. Which OLS surface slopes upward and outward from the edges of the runway strip/approach surface?

A. Inner horizontal surface

B. Conical surface

C. Transitional surface

D. Approach surface

In Obstacle Limitation Surfaces, the boundary that begins at the edge of the runway strip or approach surface and rises outward to connect with the outer conical surface is the transitional surface. It serves as the connecting ramp between the inner, near-runway areas and the outer cones, so it slopes upward and outward starting from that edge. The inner horizontal surface remains level, the conical surface itself continues outward from the transitional boundary, and the approach surface runs along the direction of the approach rather than starting at that edge.

7. Which term describes the stake marking the intersection of the design cut/fill slope with the natural ground surface?

- A. Cut section
- B. Borrow pit
- C. Subgrade
- D. Slope stake**

Think about how slopes are laid out in earthwork. The slope stake marks the exact point where the designed cut or fill slope meets the natural ground. It provides a precise reference so the crew can cut down to the intended slope or build up to it, along that line. This stake guides excavation and fill work along the slope, ensuring the finished surface follows the planned incline. The other terms describe different things: a cut section is a vertical slice showing how much material to remove, a borrow pit is a source of fill material, and subgrade is the finished surface beneath pavement. The stake marking where the design slope intersects the existing ground is the slope stake.

8. Which term describes the survey that plans the substation's layout including equipment positions and grounding network?

- A. Wind turbine siting survey
- B. Easement corridor (power)
- C. Substation survey**
- D. Catenary curve

This term describes the survey used to plan a substation's layout, including where equipment sits and how the grounding network is arranged. It covers mapping the site for transformers, switchgear, busbars, protection gear, cable trenches, and the grounding system, along with required clearances, access, and safety considerations. The other options focus on different aspects: wind turbine siting surveys determine turbine locations and related interconnections; easement corridor surveys establish legal rights of way for transmission lines; and catenary curve studies pertain to the shape and sag of overhead conductors. Therefore, this term best matches planning a substation's layout and grounding network.

9. What general term is used for determining the exact position of each support structure along a route in transmission or telecom projects?

- A. Structure spotting**
- B. Plot plan
- C. Equipment layout survey
- D. Process unit survey

Structure spotting is the process of determining the exact locations for each support structure along a transmission or telecom route. It turns the approved route alignment into precise stakeouts, giving coordinates and offsets from the route centerline so poles or towers can be erected in the correct spots with the required clearances and elevations. This step follows route approval and precedes construction staking, ensuring the entire line meets design and clearance constraints along its length. Plot plan is a general site map showing features on a parcel, not the sequence of locating line supports. Equipment layout survey focuses on arranging equipment within a facility, not along a route. Process unit survey relates to surveys of process plant units, not transmission or telecom routing.

10. What term refers to the comprehensive assessment of a port facility's navigation channels and landside areas?

A. Bathymetric contour (isobath)

B. Marine terminal survey

C. Anchorage area

D. Dock survey

The main idea being tested is a survey type that covers both waterway access and the surrounding port operations. A marine terminal survey is used to evaluate a port facility in a holistic way, examining the navigation channels, approach depths, turning basins, and mooring areas in the water, while also assessing landside areas such as berths, yards, roads, rail access, and utilities. This comprehensive scope supports safe vessel movements, efficient cargo handling, and future planning for dredging, channel realignment, berth layout, and infrastructure upgrades. Bathymetric contour (isobath) refers to a map line showing equal depths and is part of hydrographic data; it does not by itself address landside facilities or overall terminal operations. Anchorage area is simply a location where ships anchor, not a survey type. Dock survey focuses on the dock structures and mooring facilities themselves, rather than the full port-wide navigation and landside integration.

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://engrconstsurveying.examzify.com>

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

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