LAND SURVEYOR IN TRAINING (LSIT) 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

1. **In the EF example, the local elevation used is?**
   - A. 6,320 ft
   - B. 6,000 ft
   - C. 5,000 ft
   - D. 6,500 ft

2. **In the simple three-parameter datum conversion method, how many origin offsets are used?**
   - A. One origin offset
   - B. Two origin offsets
   - C. Three origin offsets
   - D. Four origin offsets

3. **Positional accuracy for primary horizontal and vertical control shall be reported as which terms?**
   - A. Local Accuracy and Network Accuracy
   - B. RMSE
   - C. Confidence Interval Only
   - D. Standard Deviation Only

4. **What is the Height of Instrument (HI) in leveling?**
   - A. Elevation of the line of sight of an instrument above or below a selected reference datum.
   - B. Reading taken on a rod held on a point whose elevation is to be determined.
   - C. Reading taken on a rod held on a point of known or assumed elevation.
   - D. An intermediate point between two bench marks.

5. **What does the network positional accuracy of a control point quantify?**
   - A. The uncertainty in the coordinates of the control point with respect to the geodetic datum at the 95-percent confidence level.
   - B. The time stability of the control point coordinates.
   - C. The average distance between control points in the network.
   - D. The precision of measuring instruments used in data collection.

6. Which technique is used to establish elevations on project control points?

A. Barometric leveling

B. Single-epoch GNSS only

C. Differential leveling techniques

D. Trigonometric leveling

7. The local positional accuracy of a control point is a number that represents the uncertainty at the 95% confidence level in coordinates relative to what?

A. Elevation differences to the reference point

B. The density of monuments in the area

C. The uncertainty in coordinates of this control point relative to adjacent connected or measured control points at 95% confidence

D. The coordinates of this point only

8. Which of the following is a route survey used for alignment of linear features?

A. Reconnaissance, preliminary survey and location survey for an alignment

B. Boundary determination and land ownership mapping

C. Aerial photography interpretation

D. Construction staking of a city grid

9. In differential leveling, which equation correctly expresses Height of Instrument (HI)?

A. HI = Elevation + BS

B. Elevation = HI - FS

C. HI = Elevation - BS

D. Elevation = FS - HI

10. Latitude lines measure what?

A. measure north-south position between the poles.

B. measure east-west position between the equator.

C. measure distance from the Prime Meridian.

D. measure height above sea level.

Answers

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

Explanations

1. In the EF example, the local elevation used is?

A. 6,320 ft

B. 6,000 ft

C. 5,000 ft

D. 6,500 ft

When working with elevations, you anchor every calculation to a known reference elevation, the local benchmark, and then apply the measured height differences to reach other points. In the EF example, the reference point's elevation is given as 6,320 ft, so this value becomes the baseline used for all subsequent elevations. This ensures consistency with the chosen datum and correctly propagates the vertical measurements. The other numbers don't match the benchmark specified in the EF example, so they wouldn't produce the correct elevations.

2. In the simple three-parameter datum conversion method, how many origin offsets are used?

A. One origin offset

B. Two origin offsets

C. Three origin offsets

D. Four origin offsets

In this method, you shift the origin of one datum relative to the other using translations along each axis. Those shifts are the origin offsets, and there are three of them—one along X, one along Y, and one along Z. Since this approach includes only translations (no rotation or scale), the total number of origin offsets is three.

3. Positional accuracy for primary horizontal and vertical control shall be reported as which terms?

A. Local Accuracy and Network Accuracy

B. RMSE

C. Confidence Interval Only

D. Standard Deviation Only

When reporting positional accuracy for primary horizontal and vertical control, two levels are used: local accuracy and network accuracy. Local accuracy describes how well points within the local control network agree with their positions in the local frame—it's about the precision and consistency of measurements within a localized area. Network accuracy, on the other hand, assesses the overall quality of the control network across a broader region, reflecting how well the network ties into the larger reference framework and how errors propagate across the network. Reporting both conveys that the local network is precise while the network as a whole remains consistent across the wider area. Other statistics like RMSE, confidence intervals, or standard deviation are useful metrics, but they don't capture this two-tier reporting approach that specifically characterizes primary control networks.

4. What is the Height of Instrument (HI) in leveling?

A. Elevation of the line of sight of an instrument above or below a selected reference datum.

B. Reading taken on a rod held on a point whose elevation is to be determined.

C. Reading taken on a rod held on a point of known or assumed elevation.

D. An intermediate point between two bench marks.

Height of Instrument is the vertical distance from the reference datum up to the instrument's line of sight. This value represents how high the instrument is positioned above the datum and is the constant you use to convert rod readings into elevations. You determine it by taking a staff reading on a point of known elevation and adding that reading to the known elevation (HI = known elevation + staff reading). Then any point's elevation is found by subtracting that point's staff reading from HI (Elevation = HI − reading). This definition directly captures what HI measures—the height of the instrument's line of sight above the datum—unlike rod readings or intermediate placements, which describe measurements or locations rather than the instrument's height.

5. What does the network positional accuracy of a control point quantify?

A. The uncertainty in the coordinates of the control point with respect to the geodetic datum at the 95-percent confidence level.

B. The time stability of the control point coordinates.

C. The average distance between control points in the network.

D. The precision of measuring instruments used in data collection.

The network positional accuracy is about how uncertain the computed coordinates of a control point are after the network is adjusted, relative to the geodetic datum. This uncertainty comes from the propagation of measurement errors through the network solution, and it is usually expressed as a 95% confidence region (often a 3D ellipsoid) around the point's coordinates. In practice, the smaller this accuracy value, the more precisely the point's position is known with respect to the datum. It's not about how long the point's coordinates stay the same over time, not about how far apart control points are from each other, and not about the precision of the surveying instruments themselves—those relate to stability, point density, or instrument capability rather than the resulting coordinate accuracy within the datum.

6. Which technique is used to establish elevations on project control points?

A. Barometric leveling

B. Single-epoch GNSS only

C. Differential leveling techniques

D. Trigonometric leveling

Establishing elevations on project control points relies on measuring vertical differences with high precision, and the method designed for that is differential leveling. In this approach, a level and a graduated staff are used to take back-sight and fore-sight readings as you move from one point to the next, then compute the height differences and transfer elevations from a known benchmark to the new points. Repeated measurements and careful sequencing minimize instrument errors and refraction effects, providing a reliable height network that ties all points to a common datum. Barometric leveling estimates height changes from atmospheric pressure, but weather conditions and air-density variations introduce errors that make it unsuitable for precise control elevations. A single GNSS epoch can give height information, but relying on one epoch yields insufficient accuracy for a network of control points without additional sessions and complex gravity/geoid corrections. Trigonometric leveling uses angles and slope distances to infer vertical differences but is more sensitive to measurement errors and refraction, and generally less precise than differential leveling. For the most accurate and dependable elevations on project control points, differential leveling techniques are used.

7. The local positional accuracy of a control point is a number that represents the uncertainty at the 95% confidence level in coordinates relative to what?

A. Elevation differences to the reference point

B. The density of monuments in the area

C. The uncertainty in coordinates of this control point relative to adjacent connected or measured control points at 95% confidence

D. The coordinates of this point only

Local positional accuracy is about how well a control point's position is known within the surrounding network. The 95% confidence level means the plotted position has a statistical envelope showing where the true position is likely to be, based on how the point is connected and measured against neighboring points. In other words, it reflects the uncertainty of this point's coordinates relative to adjacent connected or measured control points, derived from the network adjustment. This relative, network-based uncertainty is what matters for ensuring the control point fits consistently with the rest of the survey network, not the absolute value of the point alone. The other ideas don't fit because elevation differences are vertical, which is a different type of accuracy; the density of monuments doesn't determine the statistical uncertainty; and focusing on the coordinates of this point alone ignores how it relates to the rest of the network, which is essential for local positional accuracy.

8. Which of the following is a route survey used for alignment of linear features?

A. Reconnaissance, preliminary survey and location survey for an alignment

B. Boundary determination and land ownership mapping

C. Aerial photography interpretation

D. Construction staking of a city grid

Route survey is the process used to determine the path of linear projects such as roads, railways, or pipelines. It begins with reconnaissance to explore feasible corridors and identify major constraints, then uses a preliminary survey to compare options and develop an approximate alignment and right of way needs, followed by a location survey that fixes the exact alignment on the ground with precise control points. This sequence provides the data needed to design and construct the route while considering terrain, utilities, drainage, and property access. The other activities described aren't route surveys: boundary determination maps property lines, aerial photography interpretation is a planning tool, and construction staking of a city grid lays out built structures rather than establishing a route alignment.

9. In differential leveling, which equation correctly expresses Height of Instrument (HI)?

A. HI = Elevation + BS

B. Elevation = HI - FS

C. HI = Elevation - BS

D. Elevation = FS - HI

The relationship being tested is how instrument height relates to a known point and the backsight in differential leveling. When you set up the instrument, you read a backsight on a point with a known elevation. That backsight reading represents how far the instrument is above that point. To get the Height of Instrument, you add that backsight to the known elevation of the reference point: HI = Elevation + BS. This makes sense because if the reference point is at elevation E and the backsight reads BS, the instrument is at height E + BS. Once HI is known, the elevation of any point you measure with fore sights is found by Elevation = HI - FS, which is why the other sign patterns aren't used for HI. Using HI = Elevation - BS would imply subtracting the backsight would increase HI improperly, and Elevation = FS - HI reverses the relationship entirely. So the correct expression for Height of Instrument is HI = Elevation + BS.

10. Latitude lines measure what?

A. measure north-south position between the poles.

B. measure east-west position between the equator.

C. measure distance from the Prime Meridian.

D. measure height above sea level.

Latitude lines indicate how far north or south a location lies. They run east–west around the globe and are measured in degrees north or south of the equator (0° at the equator, up to 90° at the poles). This north–south position is what latitude pinpoints on maps and in GPS. By contrast, longitude lines measure east–west position relative to the Prime Meridian, and height above sea level is elevation, not a latitude measurement.

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://landsurveyorlsit.examzify.com

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