

CST Level 1 Land Surveyor Certification Practice (Sample)

Study Guide



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. What is the best pencil hardness to use while taking field notes?**
 - A. 2H**
 - B. 3H**
 - C. 4H**
 - D. 5H**
- 2. Which instrument is primarily used to measure angles in vertical and horizontal planes?**
 - A. Total Station**
 - B. EDM**
 - C. Theodolite**
 - D. Surveying Level**
- 3. What is an alidade used for in surveying?**
 - A. Measuring temperature**
 - B. Sighting points in plane table surveying**
 - C. Drawing accurate angles**
 - D. Calculating land elevation**
- 4. What type of system does metes and bounds use to describe land?**
 - A. A grid system**
 - B. A physical features and distances system**
 - C. A numerical coordinate system**
 - D. A visual representation system**
- 5. What is the term used for making a path through woods and brush for surveying?**
 - A. Tree clearing**
 - B. Line cutting**
 - C. Vegetation removal**
 - D. Brush clearing**

- 6. Engineering maps are primarily used for which purpose?**
- A. Mapping weather patterns**
 - B. Detailing the layout of construction projects**
 - C. Surveying aerial views of land**
 - D. Tracking migration of wildlife**
- 7. Which survey type can be conducted over small areas without worrying about the Earth's shape?**
- A. Control Surveying**
 - B. Geodetic Surveying**
 - C. Plane Surveying**
 - D. Cadastral Surveying**
- 8. What distinguishes a back bearing from a standard bearing?**
- A. It is measured from the south axis**
 - B. It is measured from the north axis**
 - C. It is used for horizontal distances**
 - D. It uses a different angle format**
- 9. What is the maximum wattage for an external radio station before needing a license?**
- A. 0.5 watts**
 - B. 1 watt**
 - C. 5 watts**
 - D. 10 watts**
- 10. What is the typical speed limit in construction zones on highways?**
- A. 25 mph**
 - B. 35 mph**
 - C. 45 mph**
 - D. 55 mph**

Answers

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

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Explanations

1. What is the best pencil hardness to use while taking field notes?

A. 2H

B. 3H

C. 4H

D. 5H

In field surveying, the best pencil hardness for taking notes is typically around 3H. This hardness strikes a good balance between durability and legibility. A 3H pencil produces clear, sharp lines that are suitable for writing detailed observations, measurements, and sketches in various outdoor conditions, including exposure to moisture and the potential for smudging. Harder pencils, such as 4H or 5H, produce even finer lines but may be more prone to breaking under pressure or may not write well on rough surfaces. While a softer pencil like 2H can provide richer lines, it may smudge easily and wear down quickly when used in a dynamic field environment. Therefore, the 3H pencil is often seen as the most practical choice for maintaining clarity and ensuring notes remain legible over time, especially when conditions are less than ideal.

2. Which instrument is primarily used to measure angles in vertical and horizontal planes?

A. Total Station

B. EDM

C. Theodolite

D. Surveying Level

The theodolite is specifically designed for measuring angles in both vertical and horizontal planes, making it the primary instrument for this function in land surveying. It consists of a rotating telescope mounted on a base, allowing surveyors to accurately measure angles to a high degree of precision. The theodolite can measure horizontal angles between two points, as well as vertical angles, which are essential for various surveying tasks, such as determining the slope of a landform or establishing control points in construction. In contrast, while a total station includes the functions of a theodolite and can measure angles, it is primarily a more advanced tool that integrates electronic distance measurement (EDM) capabilities. This means that while it also measures angles, its primary feature includes distance measurement. EDM itself focuses on measuring distances using electromagnetic waves and doesn't have the capability to measure angles directly. A surveying level is designed for measuring height differences and establishing horizontal planes, but does not measure angles at all. Thus, the theodolite accurately holds the position of the instrument specifically intended for measuring angles in both planes.

3. What is an alidade used for in surveying?

- A. Measuring temperature
- B. Sighting points in plane table surveying**
- C. Drawing accurate angles
- D. Calculating land elevation

An alidade is a crucial tool in surveying, particularly in plane table surveying. It is primarily used for sighting and aligning points on a plane table. By providing a straight edge with a sighting device or telescopic sight, the alidade allows surveyors to establish line of sight to specific geographical features or points of interest. This process is vital for accurately mapping land and creating detailed survey plans. The use of an alidade enhances precision in determining positions, ensuring that survey data collected is reliable and accurate. In contrast, the other options do not correctly represent the function of an alidade. Measuring temperature relates to meteorological instruments, drawing accurate angles requires a different set of tools such as a protractor or compass, and calculating land elevation usually involves the use of level instruments or GPS equipment rather than an alidade. Therefore, the correct choice highlights the specific role of the alidade in surveying tasks.

4. What type of system does metes and bounds use to describe land?

- A. A grid system
- B. A physical features and distances system**
- C. A numerical coordinate system
- D. A visual representation system

Metes and bounds is a system used to describe land that relies on physical features and distances. This method utilizes natural landmarks, such as rivers, trees, and rocks, along with measurements of distance and direction to delineate property boundaries. By incorporating these physical features, metes and bounds provides a clear and practical way to define land parcels, particularly in irregular shapes, which cannot be easily defined using more geometric methods like a grid system. The emphasis on tangible landmarks ensures that the descriptions are relevant to the actual landscape, making it easier for surveyors and landowners to understand and visualize the boundaries. This approach is especially useful in rural areas or locations where conventional surveying techniques may be less applicable. Options that refer to grid systems or numerical coordinate systems pertain to different methods of land description that rely on fixed points or mathematical coordinates, which do not accurately reflect the metes and bounds approach. Visual representation systems may aid in illustrating land boundaries but do not describe the system itself, which is fundamentally based on the combination of physical features and distance measurements.

5. What is the term used for making a path through woods and brush for surveying?

A. Tree clearing

B. Line cutting

C. Vegetation removal

D. Brush clearing

The term "line cutting" refers specifically to the process of creating a clear path through woods and brush in preparation for surveying activities. This involves cutting through vegetation to establish a straight line of sight, which is crucial for accurate measurement and alignment in surveying tasks. Line cutting ensures that surveyors have unobstructed visibility along the intended survey route, facilitating the accurate placement of instruments and making it easier to collect data efficiently. While the other terms like "tree clearing," "vegetation removal," and "brush clearing" may describe related activities involving the removal of plants and shrubs, they do not specifically encapsulate the surveying context of establishing a defined, linear path necessary for conducting measurements. Each of these alternatives can refer to broader or different processes than the focused activity of line cutting, which is designed to enhance visibility and access for survey operations.

6. Engineering maps are primarily used for which purpose?

A. Mapping weather patterns

B. Detailing the layout of construction projects

C. Surveying aerial views of land

D. Tracking migration of wildlife

Engineering maps serve a vital purpose in the planning and execution of construction projects. They are specifically designed to provide detailed representations of the physical features and layout of these projects. This includes important information such as the locations of structures, roadways, utilities, and environmental considerations necessary for effective construction management. By focusing on the meticulous details related to construction, engineering maps help engineers and architects visualize how a project will fit into its surrounding environment, identify potential challenges, and plan accordingly. They incorporate various elements such as scale, dimensions, topographical features, and existing infrastructure, which are essential for sound engineering and successful project outcomes. In contrast, other options address unrelated areas. For example, mapping weather patterns pertains to meteorological studies, surveying aerial views supports broad spatial analyses rather than detailed planning, and tracking wildlife migration is associated with ecological research. Each of these activities demands specialized mapping techniques or data that are not the primary function of engineering maps.

7. Which survey type can be conducted over small areas without worrying about the Earth's shape?

- A. Control Surveying**
- B. Geodetic Surveying**
- C. Plane Surveying**
- D. Cadastral Surveying**

Plane surveying is the correct choice because it operates under the assumption that the Earth's surface is flat for small areas. This simplification is valid when working over limited distances, allowing for relatively easy calculations and measurements without taking the curvature of the Earth into account. In practice, plane surveying uses horizontal and vertical angle measurements, along with distances, to determine positions without needing to adjust for the Earth's shape. This makes it ideal for projects like property surveys or small construction sites. Other survey types, while important in their contexts, are not based on this flat-earth assumption. Control surveying typically requires precise control points that account for the Earth's curvature, which is crucial for larger survey areas. Geodetic surveying, on the other hand, is specifically designed to measure large areas and requires consideration of the Earth's elliptical shape. Cadastral surveying focuses on property boundaries and involves legal considerations; while it may sometimes be conducted over small areas, it is still more complex compared to the straightforward approach of plane surveying.

8. What distinguishes a back bearing from a standard bearing?

- A. It is measured from the south axis**
- B. It is measured from the north axis**
- C. It is used for horizontal distances**
- D. It uses a different angle format**

A back bearing is distinguished from a standard bearing primarily in the way it is defined around a particular direction. A back bearing is essentially the opposite direction of a given standard bearing and is measured from the same reference line, typically the north axis. In surveying, standard bearings are expressed as angles measured clockwise from the north or south axes, while back bearings measure the direction from the original line of sight back to the point of origin. Measuring from the south axis does not accurately represent the nature of back bearings in relation to standard bearings, as both are ultimately connected to the north or south references. Understanding that a back bearing always refers to a return path is crucial and clarifies the directional aspect rather than the axis used for measurement. In summary, the unique characteristic of a back bearing lies in its angular relation to the original bearing direction, providing essential information for navigation and surveying by indicating the reverse path.

9. What is the maximum wattage for an external radio station before needing a license?

- A. 0.5 watts**
- B. 1 watt**
- C. 5 watts**
- D. 10 watts**

The maximum wattage for an external radio station before needing a license is 1 watt. This regulation is set by the Federal Communications Commission (FCC) in the United States. Under the Part 15 rules, unlicensed low-power transmissions can occur as long as they do not exceed this wattage threshold. This limit allows individuals to operate small, personal radio transmitters without the burden of licensing fees or complex regulatory processes, making it easier for hobbyists and small broadcasters to share their content legally. Transmissions at or below 1 watt are meant to minimize interference with licensed services and ensure that the signals produced are short-range, primarily meant for local or personal use. It's important for users to be aware of these regulations to avoid potential fines or enforcement actions from the FCC due to unauthorized transmission.

10. What is the typical speed limit in construction zones on highways?

- A. 25 mph**
- B. 35 mph**
- C. 45 mph**
- D. 55 mph**

The typical speed limit in construction zones on highways often varies by state and specific project circumstances, but a common standard in many areas is 45 mph. This speed is chosen to balance safety with efficiency, allowing for the safe movement of vehicles through potentially hazardous areas while still maintaining reasonable traffic flow. In construction zones, workers and equipment are frequently in close proximity to moving traffic, necessitating lower speeds to minimize the risk of accidents. A speed limit of 45 mph allows enough margin for drivers to react to sudden changes and hazards while navigating these zones, where conditions might be less predictable than on standard roadways. Other options such as 25 mph and 35 mph are generally seen in more restricted areas or residential zones, while 55 mph could be too high given the increased risks associated with construction work occurring directly alongside traffic. Thus, 45 mph serves as an effective compromise, providing a manageable speed that enhances safety without causing significant delays.

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://cstlevel1landsurveyor.examzify.com>

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