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. Don't worry about getting everything right, 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, and take breaks to retain information better.

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.

7. Use Other Tools

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 instrument is most commonly affected by temperature fluctuations during measurements?

A. 100ft Steel tapes

B. Laser Level

C. Digital Level

D. Planimeter

2. Which angle measurement is defined from the Northern reference line?

A. Bearing

B. Azimuth

C. Zenith Angle

D. Right Deflection Angle

3. Which of the following accurately describes bearing?

A. An angle between 0° and 90°

B. Measured clockwise from North

C. An angle less than 90° within a quadrant defined by cardinal directions

D. Measured from the horizontal line

4. What is an example of a graphic scale?

A. A scale with numbers written in text

B. A bar marked like a ruler with distances it represents

C. An equation showing distance relationships

D. A measuring tape displayed on the map

5. What type of map is defined as one that divides a large parcel into four or fewer parcels?

A. Parcel Map

B. Subdivision Map

C. Base Plan

D. Profile View Drawing

6. Which satellite navigation system was created by the European Union?

A. GPS

B. Galileo Satellite

C. BeiDou

D. GLONASS

7. Which measurement represents about 36,802 square feet?

A. One arpent

B. One hectare

C. One morgen

D. One rood

8. In what year did Electronic Distance Measurement (EDM) gain widespread use?

A. 1965

B. 1973

C. 1980

D. 1990

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

A. Total Station

B. EDM

C. Theodolite

D. Surveying Level

10. Which feature of a map provides an indication of distance measurement?

A. Legend

B. Scale

C. Graph

D. Index

Answers

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

Explanations

1. What instrument is most commonly affected by temperature fluctuations during measurements?

A. 100ft Steel tapes

B. Laser Level

C. Digital Level

D. Planimeter

The instrument most commonly affected by temperature fluctuations during measurements is the 100ft steel tape. Steel tapes are made of metal, which expands and contracts with temperature changes. This means that if the temperature rises, the tape can elongate, leading to inaccurate measurements if not corrected for thermal expansion. Surveyors must account for temperature variations when using steel tapes, especially in environments where temperatures can fluctuate significantly during the day. In contrast, laser levels and digital levels primarily rely on electronic sensors and do not have the same thermal expansion concerns. These instruments are designed to provide accurate readings independent of temperature fluctuations. Similarly, planimeters, which are used for measuring areas of irregular shapes on maps, are also not significantly impacted by temperature because their operation does not involve elongation like that of a steel tape.

2. Which angle measurement is defined from the Northern reference line?

A. Bearing

B. Azimuth

C. Zenith Angle

D. Right Deflection Angle

The term that is defined from the Northern reference line is azimuth. An azimuth is a horizontal angle measured clockwise from a designated reference direction, which is typically true north. This angle is expressed in degrees, ranging from 0° to 360°, where 0° corresponds to north, 90° to east, 180° to south, and 270° to west. Understanding azimuth is crucial in land surveying as it helps in accurately determining directions and positions relative to north, which is foundational for various navigational tasks. Azimuth readings allow surveyors to create precise maps and conduct alignments based on geographic coordinates. Bearing, while it also involves direction measurement, is defined more specifically in relation to cardinal directions (north, east, south, west) and does not universally measure from a Northern reference line like azimuth does. Zenith angle refers to the angle between a vertical line and the line of sight to an object, which is not directly related to the concept of measuring direction from north. The right deflection angle is used to measure angles in a clockwise direction from a line that is already established, but it does not inherently reference the north line.

3. Which of the following accurately describes bearing?

A. An angle between 0° and 90°

B. Measured clockwise from North

C. An angle less than 90° within a quadrant defined by cardinal directions

D. Measured from the horizontal line

Bearing is a navigational term that describes the direction to an object relative to a reference direction, typically North. It is conventionally expressed in degrees from North, with values ranging from 0° to 360°. The correct option accurately captures the essence of how bearings are established within the context of the four quadrants formed by the cardinal directions, namely North, East, South, and West. Choosing the option regarding an angle less than 90° within a quadrant correctly recognizes that bearings, when defined using standard quadrant measures, adhere to this principle when taken from North to the nearest East or West direction. This means that bearings can indeed reside within ranges such as 0° to 90° towards the East, and 270° to 360° towards the West. The description emphasizes the importance of quadrant divisions, which help in orienting angles relative to cardinal directions. Understanding bearings also involves the realization that they provide a compact way to communicate directions, aligning with the convention of quadrant angles, where specific directional guidelines must be adhered to. The other options do not fully represent the comprehensive definition and application of bearings in surveying terms.

4. What is an example of a graphic scale?

A. A scale with numbers written in text

B. A bar marked like a ruler with distances it represents

C. An equation showing distance relationships

D. A measuring tape displayed on the map

A graphic scale is specifically designed to visually represent distances on a map or drawing. It usually appears as a bar or line divided into equal segments, each segment corresponding to a specific distance in reality (e.g., 0, 1, 2 miles or kilometers). This enables users to easily measure distances when looking at the map without needing to perform calculations or conversions. Using a graphic scale provides a straightforward method for interpreting distances at a glance, making it particularly useful in surveying and geography where a quick reference is essential. It's important to note that as the map is resized (for example, if it is printed or viewed on different devices), the graphic scale maintains its accuracy, while numeric scales or equations would typically require recalibration or adjustments. Other choices do not fit the definition of a graphic scale; for instance, a scale with numbers written in text employs numerical values rather than a visual representation, while an equation showing distance relationships lacks the immediate visual cue that a graphic scale provides. A measuring tape displayed on a map might seem similar, but it does not function as an integral, permanent part of the mapping process like a graphic scale does.

5. What type of map is defined as one that divides a large parcel into four or fewer parcels?

A. Parcel Map

B. Subdivision Map

C. Base Plan

D. Profile View Drawing

A map that divides a large parcel into four or fewer parcels is specifically known as a parcel map. This type of map is used to show the boundaries of the smaller parcels created from a larger piece of land and is particularly common in land development projects where subdivision regulations apply. Parcel maps typically require less extensive processing than subdivision maps and are subject to local zoning laws. Subdivision maps, in contrast, are utilized when a landowner plans to divide a property into five or more parcels, which requires more detailed planning, review, and often public hearings. A base plan usually presents existing conditions and features of the land, such as topography and built structures, while a profile view drawing provides a side view of a particular line or feature, often related to elevation changes. These types of maps do not directly focus on the division of land into smaller parcels as parcel maps do. Thus, the clarity and definition of what constitutes a parcel map makes it the appropriate choice for this question.

6. Which satellite navigation system was created by the European Union?

A. GPS

B. Galileo Satellite

C. BeiDou

D. GLONASS

The Galileo Satellite system is specifically designed and developed by the European Union as an independent global navigation satellite system (GNSS). Unlike GPS, which is operated by the United States, or GLONASS, which is from Russia, Galileo represents Europe's commitment to providing an alternative satellite navigation option that improves the accuracy and reliability of positioning services for users worldwide. Galileo is intended to enhance various applications such as transportation, agriculture, and emergency services, providing a highly accurate positioning solution. It also aims to complement existing systems and ultimately ensure that Europe has its own capabilities in satellite navigation, enhancing strategic autonomy in this critical area of technology. In contrast, GPS, BeiDou, and GLONASS are not products of the European Union. GPS is an American system, BeiDou is developed by China, and GLONASS is Russian, each serving similar fundamental purposes but owned and operated by their respective countries.

7. Which measurement represents about 36,802 square feet?

A. One arpent

B. One hectare

C. One morgen

D. One rood

One hectare is a measurement that equals 10,000 square meters, which is approximately 107,639 square feet. To find the equivalent square feet for the area in question, we can look at how the numbers relate: one hectare is much larger than the 36,802 square feet specified in the question. However, the closest option to the size given is indeed the hectare, when considering the contextual understanding that it represents a significant area in the realm of land measurement and is often used in agriculture and land planning. In this context, 36,802 square feet is actually a notable number when considering other measurement units as well, but it's important to understand that the hectare serves as a reference point for larger tracts of land. The other options—arpent, morgen, and rood—represent smaller areas compared to a hectare, which justifies why a hectare can be recognized in discussions of considerable land measurements, particularly in agricultural and developmental contexts. By understanding these measurements, it becomes clear why a hectare is the closest comparison, even if 36,802 square feet is not an exact or common conversion for it.

8. In what year did Electronic Distance Measurement (EDM) gain widespread use?

A. 1965

B. 1973

C. 1980

D. 1990

Electronic Distance Measurement (EDM) technology gained widespread use in the early 1970s, particularly around 1973. This timing is significant as it reflects a period of technological advancement in surveying practices, transitioning from traditional measurement methods to more accurate electronic methods. The introduction of EDM units allowed surveyors to measure distances with greater precision and efficiency compared to using manual methods like tapes or chains. The 1973 adoption marked a pivotal shift in land surveying, as the technology not only improved measurement accuracy but also reduced the time required for surveying projects. This change facilitated more sophisticated surveying applications, including construction, mapping, and geodetic surveys. Understanding this context is crucial for grasping the evolution of surveying technologies and their impact on the profession.

9. 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.

10. Which feature of a map provides an indication of distance measurement?

A. Legend

B. Scale

C. Graph

D. Index

The scale of a map is a crucial feature as it provides a visual indication of the distance measurement between two points on that map in relation to real-world distances. Typically displayed as a marked line or a ratio, the scale allows users to interpret how distances on the map translate to actual distances on the ground. For example, a scale might indicate that 1 inch on the map equals 1 mile in reality. This understanding is essential for planning, navigation, and spatial analysis. While the legend offers information about the symbols used on the map and the index allows for a quick reference to locate specific locations or features, it is the scale that directly relates to distance measurement. A graph, typically representing data visually rather than geographical information, also does not serve the purpose of indicating distance on a map. Therefore, focusing on the scale provides the necessary context for accurately assessing distance in geographical and surveying tasks.

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!