Tennessee Survey Practice Exam (Sample)

Study Guide

Everything you need from our exam experts!

Questions

1. What is the maximum allowable angular closure for Urban and Subdivision Property Surveys (Category I)?

A. Ten seconds times the square root of the number of angles turned

B. Twenty seconds times the square root of the number of angles turned

C. Fifteen seconds times the square root of the number of angles turned

D. Thirty seconds times the square root of the number of angles turned

2. For urban differential leveling surveys, what mathematical operation is involved in determining the error of closure?

A. It must multiply by the square of distance

B. It must multiply by the square root of distance

C. It must add the distance squared

D. It must average multiple readings

3. What must be shown when intersecting boundary lines are non-radial or nontangential?

A. Chord bearing and distance

B. Easement widths

C. Surveyor's name and license number

D. Boundary line adjustments

4. In a composite Survey Map or Survey Plat, what must the Land Surveyor indicate?

A. Personal opinions on land use

B. The source of all lines copied from previous sources

C. Any known defects in the land

D. The history of land ownership

5. What action is taken shortly before the expiration of each board member's term?

A. A successor shall be appointed from a different grand division

B. A successor shall be appointed from the same grand division

C. A new election shall be held for board members

D. The board shall be restructured entirely

6. Which of the following is NOT a key factor mentioned in the marking of survey points?

- **A. Division of land ownership**
- **B. Specific property measurements**
- **C. Use of witness monuments**
- **D. Discretion of the Land Surveyor**

7. When conducting surveys, what may a professional land surveyor and their team carry with them?

- **A. Only handheld equipment**
- **B. No equipment at all**
- **C. Customary equipment and vehicles**
- **D. Only surveying maps**

8. Which of the following is an essential duty of a Land Surveyor?

- **A. Creating new laws**
- **B. Managing public relations**
- **C. Preparing accurate survey documents**
- **D. Conducting market research**

9. What is differential leveling in surveying?

- **A. A process of measuring vertical elevation using a horizontal line of sight**
- **B. A technique used to calculate land area**
- **C. A method for creating topographic maps**
- **D. A system for assessing land value**

10. What type of discrepancies should a professional land surveyor address using public records?

- **A. Financial discrepancies**
- **B. Discrepancies related to boundaries and adjoining lands**
- **C. Construction discrepancies**
- **D. Political discrepancies**

Answers

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

Explanations

1. What is the maximum allowable angular closure for Urban and Subdivision Property Surveys (Category I)?

A. Ten seconds times the square root of the number of angles turned

B. Twenty seconds times the square root of the number of angles turned

C. Fifteen seconds times the square root of the number of angles turned

D. Thirty seconds times the square root of the number of angles turned

For Urban and Subdivision Property Surveys categorized as Category I, the maximum allowable angular closure is established as a function of the number of angles turned, using a formula that accounts for accuracy in the survey. The correct answer reflects the standard industry practice, which is to apply a stringent guideline to ensure that surveys remain reliable and precise. In this case, the formula "fifteen seconds times the square root of the number of angles turned" is correct. This standard is designed to enhance the overall precision of the survey by limiting the potential error that can accumulate with each angle measurement. The use of the square root reflects the statistical principle that as the number of angles increases, the potential for accumulating angular errors also increases, thus requiring a more stringent closure criterion to maintain survey accuracy. Other answers propose varying thresholds that do not align with the industry requirements for this classification of surveys. These options either suggest a more lenient standard for angular closure or incorrectly assert the methodology causing inaccuracy in defining the constraints of acceptable error. Using the fifteen seconds standard ensures that survey results are both reliable and consistent with the best practices in land surveying and helps to uphold the integrity of property boundaries in urban and subdivision contexts.

2. For urban differential leveling surveys, what mathematical operation is involved in determining the error of closure?

A. It must multiply by the square of distance

B. It must multiply by the square root of distance

C. It must add the distance squared

D. It must average multiple readings

In urban differential leveling surveys, determining the error of closure is fundamentally linked to the precision of measurements taken over distances. The correct choice involves multiplying by the square root of distance, which is crucial for understanding how errors propagate in relation to the measured distances. This approach stems from the concept of measurement uncertainty, where the standard error often scales with the square root of the distance due to the principles of random error propagation. In leveling surveys, as the distance between benchmarks increases, the potential for cumulative errors also escalates. By applying the square root of the distance, surveyors can effectively gauge the reliability of their measurements, providing a more accurate assessment of the error of closure. This method is especially relevant in urban settings where obstacles and variations can influence the measurements, making it imperative to accurately reflect how distance impacts the overall precision of the leveling survey. Using this mathematical relationship allows for better decision-making in determining whether the survey meets acceptable standards of accuracy.

3. What must be shown when intersecting boundary lines are non-radial or nontangential?

A. Chord bearing and distance

B. Easement widths

C. Surveyor's name and license number

D. Boundary line adjustments

When intersecting boundary lines are non-radial or nontangential, it is necessary to demonstrate the chord bearing and distance. This requirement stems from the need to accurately describe the geometry of the intersection when traditional radial or tangential methods are not applicable. In cases involving non-standard boundary lines—such as curves or irregular shapes—the chord bearing and distance provide essential details about the straight-line connection between the boundary points, allowing for proper delineation on a survey map. The chord details help convey the specific angle and length of the portions of the boundary that lie between the points of intersection, which is vital for ensuring precision in the boundaries and for any legal or administrative processes related to property delineation. The other options, while relevant in certain contexts, do not specifically address the requirements for intersections of boundary lines that lack radial or tangential alignment. Easement widths might pertain to rights of way but do not directly contribute to defining the intersection under similar circumstances. The surveyor's name and license number are important for credentialing and accountability, but they do not pertain to the geometrical characterization of boundary intersections. Boundary line adjustments are relevant for changing property lines but do not specifically inform the scenario of non-radial or nontangential

4. In a composite Survey Map or Survey Plat, what must the Land Surveyor indicate?

A. Personal opinions on land use

B. The source of all lines copied from previous sources

C. Any known defects in the land

D. The history of land ownership

In a composite survey map or survey plat, it is crucial for the land surveyor to indicate the source of all lines copied from previous sources. This is essential because it maintains transparency regarding the origins of the boundary and other significant lines shown on the map. By citing the sources, the surveyor ensures that others can trace back to the original data, which is important for verifying the accuracy of the survey and understanding the context of the information presented. This practice supports the integrity and reliability of the survey, which is particularly necessary in legal contexts and when disputes arise regarding land boundaries. The inclusion of this information also demonstrates adherence to professional standards and legal requirements that govern surveying practices. It effectively communicates the basis of the survey to other professionals and stakeholders involved, fostering confidence in the survey's legitimacy.

5. What action is taken shortly before the expiration of each board member's term?

A. A successor shall be appointed from a different grand division

B. A successor shall be appointed from the same grand division

C. A new election shall be held for board members

D. The board shall be restructured entirely

A successor shall be appointed from the same grand division shortly before the expiration of each board member's term to maintain continuity and representation in the governing body. This practice ensures that each grand division of Tennessee continues to have a voice and is represented appropriately in the board. It promotes stability within the board and allows for a smoother transition as the incoming member is familiar with the regional concerns and needs of their constituents. Such a method of appointment is vital for maintaining local governance and ensuring that the perspectives and interests of various regions of the state are continuously represented. The choice of appointing from the same grand division helps foster a sense of accountability and connection between board members and the communities they serve.

6. Which of the following is NOT a key factor mentioned in the marking of survey points?

A. Division of land ownership

B. Specific property measurements

C. Use of witness monuments

D. Discretion of the Land Surveyor

Marking survey points encompasses various crucial elements that ensure accuracy and clarity in land surveying. The correct response highlights that "Specific property measurements" is not primarily a key factor in the marking process itself. Marking survey points typically involves establishing physical markers based on certain key factors that help define boundaries and ownership rather than focusing purely on the measurements of the property. Land surveyors utilize the division of land ownership to properly delineate boundaries, ensuring that markers accurately reflect the limits of different parcels of land. This is vital in avoiding disputes between neighboring property owners. The use of witness monuments is another significant factor; these are additional markers placed at a distance from the surveyed points to help establish and verify the survey's accuracy. Additionally, the discretion of the land surveyor plays an important role in the marking process. Surveyors must apply their professional judgment and knowledge of surveying practices to choose appropriate locations for markers that meet legal and practical requirements. While specific measurements are fundamental to the overall surveying process, they are not a direct factor in how points are marked in the field. Instead, the focus is on how these various practices come together to mark and define areas accurately for legal and construction purposes. Thus, the identification of marking factors emphasizes more qualitative aspects of surveying rather than strict

7. When conducting surveys, what may a professional land surveyor and their team carry with them?

A. Only handheld equipment

B. No equipment at all

C. Customary equipment and vehicles

D. Only surveying maps

The correct answer recognizes that a professional land surveyor and their team typically utilize customary equipment and vehicles during their surveying activities. This includes a range of tools and technology specifically designed for measuring land and defining property boundaries, such as total stations, GPS equipment, levels, and surveying software. Additionally, vehicles may be used to transport this equipment and ensure accessibility to various surveying sites. In contrast, carrying only handheld equipment would severely limit the efficiency and accuracy of the surveying process, as much of the necessary equipment is larger and requires more than just what can be held in hand. Not having any equipment at all would obviously be impractical and counterproductive since surveying inherently requires tools to collect data. Relying solely on surveying maps would also be insufficient, as maps do not replace the need for real-time data collection and measurement necessary for effective surveying. Thus, a combination of customary equipment and vehicles is essential for conducting thorough and precise land surveys.

8. Which of the following is an essential duty of a Land Surveyor?

A. Creating new laws

B. Managing public relations

C. Preparing accurate survey documents

D. Conducting market research

Preparing accurate survey documents is an essential duty of a Land Surveyor because this responsibility directly relates to the professional tasks and objectives of surveying. Land surveyors must create precise and reliable records that represent the measurements and boundaries of land, as these documents are critical for various applications such as property transactions, construction, and land development. Accurate survey documents serve as legal evidence of property lines and can impact property ownership rights. Therefore, the attention to detail and technical skills required in preparing these documents are fundamental to a land surveyor's role. In contrast, creating new laws is not typically within the purview of land surveyors, as this is a function of legislative bodies. Managing public relations, while potentially relevant for some surveyors who work in public-facing roles, is not a core duty associated with the profession. Conducting market research may inform some aspects of surveying business practices but doesn't encompass the primary responsibilities of ensuring accurate land measurements and documentation. Thus, preparing accurate survey documents highlights the integral skills and responsibilities of land surveyors within the discipline.

9. What is differential leveling in surveying?

A. A process of measuring vertical elevation using a horizontal line of sight

B. A technique used to calculate land area

C. A method for creating topographic maps

D. A system for assessing land value

Differential leveling is specifically a surveying method used to determine the differences in elevation between points. This process involves measuring vertical distances using a horizontal line of sight, ensuring accuracy and precision. The surveyor typically uses a leveling instrument, such as a level or total station, and a graduated staff to establish a reference point and then measure the elevation of various other points relative to that baseline. This technique is fundamental not only for construction and engineering projects but also for various applications in geodesy, land surveying, and civil engineering, as it provides critical information necessary for planning and executing projects that require precise elevation data. The method's emphasis on maintaining a horizontal sight line helps to eliminate errors caused by terrain undulations and atmospheric conditions, making it a reliable choice for determining the relative heights of points over a distance.

10. What type of discrepancies should a professional land surveyor address using public records?

A. Financial discrepancies

B. Discrepancies related to boundaries and adjoining lands

C. Construction discrepancies

D. Political discrepancies

A professional land surveyor primarily deals with discrepancies related to boundaries and adjoining lands when utilizing public records. Public records provide essential historical information about land ownership, boundary lines, easements, rights-of-way, and any encroachments that may affect the land in question. By referencing these records, surveyors can determine the legal boundaries of a parcel and identify any conflicts or errors that might exist, ensuring that their surveys are accurate and reliable. Addressing boundary discrepancies is crucial because these issues directly impact land ownership and property rights. Land surveyors must interpret this information correctly to provide clear delineations between properties, which is vital in preventing disputes and legal complications between adjacent landowners. While financial, construction, and political discrepancies may be relevant in other contexts, they do not fall within the primary focus of a land surveyor's responsibilities, which center around precise measurements and the establishment of land boundaries. This focus on boundaries underpins the integrity of property claims and development projects, making it vital for surveyors to utilize public records effectively.