

Colorado Land Surveyor Practice Exam (Sample)

Study Guide



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SAMPLE

Questions

- 1. Which entity is referred to as the board regarding land surveyors?**
 - A. The state legislature**
 - B. The state board of licensure**
 - C. The federal registration council**
 - D. The local planning commission**
- 2. What characterizes a closed traverse in surveying?**
 - A. A method that connects multiple points in a straight line**
 - B. A technique that requires only one starting point for measurements**
 - C. A surveying method forming a loop with coinciding start and end points**
 - D. A process that involves only one angle measurement**
- 3. What are the benefits of using photogrammetry in modern surveying?**
 - A. It offers faster terrain modeling without requiring field visits**
 - B. It eliminates the need for any measurement tools**
 - C. It only captures images of difficult-to-reach areas**
 - D. It is primarily used for historical documentation**
- 4. What is a topographic contour?**
 - A. A line on a map that connects points of equal elevation**
 - B. A measurement of land area**
 - C. A type of property boundary**
 - D. A representation of land use**
- 5. What does "alluvion" refer to in land surveying?**
 - A. The increased elevation of a land parcel**
 - B. The gradual deposit of soil by water action**
 - C. The process of land development along rivers**
 - D. The division of land into zones for farming**

- 6. What is the maximum distance monument record accessories should be from the monument?**
- A. 100 feet**
 - B. 200 feet**
 - C. 330 feet**
 - D. 400 feet**
- 7. What would likely be included in the documentation of a boundary survey?**
- A. The history of land use**
 - B. The legal descriptions of property boundaries**
 - C. The ecological status of the land**
 - D. Aerial photographs of the terrain**
- 8. What is a key characteristic of an irregular parcel?**
- A. It is always an equal shape**
 - B. It lacks a unique description on a subdivision plat**
 - C. It is typically larger than standard subdivisions**
 - D. It requires expensive surveying techniques**
- 9. What is the importance of measuring and platting underground mine workings?**
- A. For construction aesthetics**
 - B. To ensure safety in mining operations**
 - C. For recording historical data**
 - D. To enhance property values**
- 10. What is the primary purpose of a boundary retracement survey?**
- A. To create new property lines**
 - B. To relocate existing property boundaries**
 - C. To verify or re-establish property boundaries**
 - D. To assess land value for sale**

Answers

SAMPLE

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

SAMPLE

Explanations

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1. Which entity is referred to as the board regarding land surveyors?

- A. The state legislature**
- B. The state board of licensure**
- C. The federal registration council**
- D. The local planning commission**

The entity referred to as the board regarding land surveyors is the state board of licensure. This board is responsible for overseeing the licensing and regulation of land surveyors within the state. Their primary functions include establishing the criteria for licensure, conducting examinations, maintaining records of licensed professionals, and enforcing compliance with state laws and regulations associated with land surveying practices. The necessity of having a dedicated board or regulatory body is essential in ensuring that practitioners meet professional standards and adhere to the ethical practices required in the field. As such, the state board of licensure plays a pivotal role in protecting public interest and ensuring that land surveying services provided to the community are of high quality and conducted by qualified individuals. In contrast, the state legislature primarily focuses on creating laws and regulations, the federal registration council is more involved with national standards and coordination among states, and the local planning commission deals with land-use planning at a local level, none of which hold the specific licensure authority that the state board possesses.

2. What characterizes a closed traverse in surveying?

- A. A method that connects multiple points in a straight line**
- B. A technique that requires only one starting point for measurements**
- C. A surveying method forming a loop with coinciding start and end points**
- D. A process that involves only one angle measurement**

A closed traverse in surveying is characterized by forming a loop with coinciding start and end points. This means that the survey begins at a specific location, progresses through a series of points, and ultimately returns to the original starting point. This method is particularly important in land surveying as it allows for error checking and ensures that any discrepancies in the measurements can be identified and corrected. The closure of the traverse is crucial because it helps validate the accuracy of the survey, as the sum of the angles measured should equal a specific value, indicating that the loop has been properly surveyed. In contrast, connecting multiple points in a straight line does not necessarily ensure closure or allow for the checking of errors in the same way a closed traverse does. Similarly, requiring only one starting point for measurements does not imply that the traverse will loop back to that point. Finally, measuring only one angle does not encompass the multiple angles necessary to complete a closed traverse, which typically involves recording angles at each vertex of the loop being surveyed.

3. What are the benefits of using photogrammetry in modern surveying?

- A. It offers faster terrain modeling without requiring field visits**
- B. It eliminates the need for any measurement tools**
- C. It only captures images of difficult-to-reach areas**
- D. It is primarily used for historical documentation**

The correct answer highlights one of the significant advantages of photogrammetry in modern surveying. Photogrammetry allows surveyors to create accurate terrain models efficiently, often eliminating the need for extensive field visits. By utilizing aerial or satellite images, surveyors can gather data over large areas quickly. This approach is particularly beneficial in challenging terrains or remote locations where traditional surveying methods may be time-consuming or unsafe. The speed and efficiency of photogrammetry often lead to reduced project timelines and lower costs. The other options do not accurately reflect the benefits of photogrammetry. While photogrammetry indeed provides valuable information without the need to visit every individual location in the field, it does not eliminate the need for measurement tools entirely, as ground control points are often necessary to ensure accuracy. Furthermore, photogrammetry is not limited to capturing images of only difficult-to-reach areas; it can be used in a wide variety of environments. Lastly, while photogrammetry can be applied to historical documentation, this is not its primary purpose, as it is widely used in various applications including mapping, construction, and environmental monitoring.

4. What is a topographic contour?

- A. A line on a map that connects points of equal elevation**
- B. A measurement of land area**
- C. A type of property boundary**
- D. A representation of land use**

A topographic contour is defined as a line on a map that connects points of equal elevation. This concept is crucial in land surveying and cartography, as it visually represents the three-dimensional shape of the terrain on a two-dimensional surface. Each contour line indicates a specific elevation above a base level, typically sea level, allowing users to understand the gradient and slope of the land. By interpreting these contour lines, surveyors, engineers, and landscape planners can derive critical insights about the landscape, including steepness, drainage patterns, and potential areas for development. The spacing between contour lines also provides information about the slope's steepness—closer lines indicate a steeper slope, while wider spacing suggests a gentler incline. Understanding topographic contours is essential for tasks such as site planning, floodplain mapping, and environmental assessments, as they provide detailed information about the land's physical characteristics. The other options either describe different aspects related to land management—like land area measurement, property boundaries, or land use representation—but do not encompass the specific meaning of topographic contours as accurately.

5. What does "alluvion" refer to in land surveying?

- A. The increased elevation of a land parcel**
- B. The gradual deposit of soil by water action**
- C. The process of land development along rivers**
- D. The division of land into zones for farming**

Alluvion refers specifically to the gradual accumulation of soil and sediment that is deposited by the natural movement of water, such as rivers or streams. This process can lead to the expansion of land over time as the sediment builds up along riverbanks or in floodplains. In land surveying, understanding alluvion is crucial because it can affect property boundaries and ownership rights, especially in areas where land is formed or changed by water. The other options pertain to related concepts but do not accurately reflect the specific definition of alluvion. The increased elevation of a land parcel does not specifically describe the action of sediment deposition. The process of land development along rivers is broader and involves various human and natural factors rather than just sediment deposition. Finally, the division of land into zones for farming relates to land use planning rather than the natural processes that create or alter land through sediment accumulation.

6. What is the maximum distance monument record accessories should be from the monument?

- A. 100 feet**
- B. 200 feet**
- C. 330 feet**
- D. 400 feet**

The maximum distance monument record accessories should be from the monument is 330 feet. This standard is set to ensure that the monument and its accessories are adequately correlated and visible for future reference and verification. The distance is specifically chosen to provide a reasonable balance between accessibility and preservation of the integrity of the monument. Maintaining the accessories within this range promotes an efficient and effective survey process, allowing surveyors to locate and reference the monument with ease when needed. Setting the threshold at 330 feet helps in minimizing the likelihood of losing the associated records and provides clarity in understanding the spatial relationship between the monument and its accessories. The distances indicated by the other options exceed the practical limits for maintaining accurate reference points in surveying, which could lead to complications or inaccuracies in locating the monument and interpreting survey data.

7. What would likely be included in the documentation of a boundary survey?

A. The history of land use

B. The legal descriptions of property boundaries

C. The ecological status of the land

D. Aerial photographs of the terrain

In the context of a boundary survey, the inclusion of legal descriptions of property boundaries is crucial because these descriptions provide a precise and legally recognized definition of the boundaries of a property. Such descriptions often include details about the points, lines, and dimensions that define the limits of ownership. This documentation serves as a foundational element not only for establishing current boundaries but also for resolving disputes that may arise regarding property lines in the future. The legal description is typically derived from a combination of past surveys, conveyances, and local regulations, making it an essential component of survey documentation that is relied upon in legal contexts. It ensures clarity and accuracy in property ownership, which is fundamental in real estate transactions, land development, and local zoning compliance. While the history of land use, ecological status, and aerial photographs may be useful for various aspects of land assessment and environmental planning, they are not specifically necessary for the legal determination of boundaries.

8. What is a key characteristic of an irregular parcel?

A. It is always an equal shape

B. It lacks a unique description on a subdivision plat

C. It is typically larger than standard subdivisions

D. It requires expensive surveying techniques

A key characteristic of an irregular parcel is its lack of a unique description on a subdivision plat. In contrast to regular parcels, which can be defined by straightforward geometric descriptions (like squares or rectangles), irregular parcels often have undefined or non-standard shapes that do not fit neatly onto a subdivision plat. This results in challenges when attempting to describe the property legally and physically, as there may not be a simple way to convey its boundaries using typical platting methods. Irregular parcels can arise from various factors, such as historical land use, natural features like rivers or hills, or prior boundaries that do not conform to standard measures. Such irregularities necessitate different approaches to boundary delineation and typically require a more detailed legal description that accurately reflects the unique contours of the property, often relying on metes and bounds or similar techniques that account for the specific characteristics of the land.

9. What is the importance of measuring and platting underground mine workings?

- A. For construction aesthetics**
- B. To ensure safety in mining operations**
- C. For recording historical data**
- D. To enhance property values**

Measuring and platting underground mine workings is crucial for ensuring safety in mining operations. This practice involves accurately mapping the layout of mine tunnels, shafts, and other structures, which helps in identifying potential hazards, such as unstable ground, gas accumulation, or water incursion. By understanding the precise configuration and conditions of the mine, safety protocols can be improved, and emergency procedures can be effectively planned. Additionally, knowing the exact layout allows for better ventilation systems and the timely identification of any areas that may pose a risk to miners. While other options might have some relevance, such as recording historical data or potentially enhancing property values, the paramount reason for detailed measurement and mapping is to uphold the safety and health of workers in the mine. Therefore, the focus should be on using this information to prevent accidents and promote a safer working environment in mining operations.

10. What is the primary purpose of a boundary retracement survey?

- A. To create new property lines**
- B. To relocate existing property boundaries**
- C. To verify or re-establish property boundaries**
- D. To assess land value for sale**

The primary purpose of a boundary retracement survey is to verify or re-establish property boundaries. In this type of survey, a land surveyor uses existing records, previous surveys, and physical evidence found on the ground to determine the accurate location of property lines. This is particularly important when disputes arise regarding property ownership or when there is a need to confirm the limits of a property before development or sale. Boundary retracement surveys involve analyzing historical data and documents, such as deeds or plats, alongside surveying techniques to pinpoint the original boundaries. By effectively confirming these boundaries, the surveyor can provide property owners with clarity and assurance regarding their legal property lines, addressing any uncertainties or conflicts that may exist. This process plays a vital role in maintaining property rights and facilitating real estate transactions, ensuring that all parties have a clear understanding of property limits.