

1. What is the purpose of a tachometric system in surveying?

- a) To measure distances between points
- b) To measure angles between points
- c) To measure both distances and angles between points
- d) To calculate elevations between points

Answer: c) To measure both distances and angles between points

Explanation: Tachometric systems in surveying are designed to measure both horizontal distances and vertical angles between survey points, providing comprehensive data for mapping and construction purposes.

2. Which system utilizes stadia hairs for distance measurement in tachometry?

- a) Analytic lens system
- b) Tangential system
- c) Stadia system
- d) Subtense system

Answer: c) Stadia system

Explanation: The stadia system employs stadia hairs in the telescope of the instrument to measure the distance between the instrument and the target, based on the principle of subtense.

3. What is the primary function of the analytic lens in tacheometry?

- a) To measure distances
- b) To measure angles
- c) To calculate elevations
- d) To improve focus

Answer: a) To measure distances

Explanation: The analytic lens is used to measure distances in tacheometry by analyzing the image of the target through the telescope.

4. Which tachometric system employs the principle of measuring the horizontal distance between two points by the product of the vertical angle and the instrument constant?

- a) Tangential system
- b) Analytic lens system
- c) Subtense system
- d) Stadia system

Answer: a) Tangential system

Explanation: The tangential system calculates the horizontal distance between two points by multiplying the vertical angle by the instrument constant, providing an efficient method for distance measurement.

5. What does the instrument constant represent in tacheometry?

- a) The angular accuracy of the instrument
- b) The distance between the telescope and the stadia hairs
- c) The ratio between the vertical and horizontal angles
- d) The ratio between the horizontal and vertical distance measurements

Answer: b) The distance between the telescope and the stadia hairs

Explanation: The instrument constant is the distance between the telescope and the stadia hairs in a tachometric instrument, which is a crucial parameter for distance calculation in systems like the tangential system.

6. How is field work reduction accomplished in tacheometry?

- a) By using digital instruments
- b) By applying mathematical formulas to raw field data
- c) By adjusting the instrument constant
- d) By calibrating the stadia hairs

Answer: b) By applying mathematical formulas to raw field data

Explanation: Field work reduction involves processing raw field data using mathematical formulas to obtain accurate measurements and survey results in tacheometry.

7. Which type of tacheometer allows for direct reading of distance measurements without additional calculations?

- a) Stadia tacheometer
- b) Analytic tacheometer
- c) Tangential tacheometer
- d) Subtense tacheometer

Answer: a) Stadia tacheometer

Explanation: Stadia tacheometers enable direct reading of distance measurements through the stadia hairs in the telescope, eliminating the need for additional calculations.

8. In tacheometry, how is the method of traversing typically utilized?

- a) For measuring horizontal distances only
- b) For measuring vertical angles only
- c) For both measuring distances and angles between points
- d) For calculating elevations between points

Answer: c) For both measuring distances and angles between points

Explanation: Traversing in tacheometry involves measuring both distances and angles between consecutive survey points to establish control networks or traverse paths.

9. What is the primary application of tacheometry in contouring?

- a) Measuring the slope of the terrain
- b) Identifying underground structures
- c) Mapping the elevation of the land surface
- d) Calculating the volume of excavated material

Answer: c) Mapping the elevation of the land surface

Explanation: Tacheometry is commonly used in contouring to map the elevation of the land surface by measuring vertical angles and distances between points, enabling the creation of detailed contour maps.

10. Which tachometric system utilizes the principle of measuring the distance between two points by sighting a target with two fixed points in the telescope?

- a) Analytic lens system
- b) Stadia system
- c) Tangential system
- d) Subtense system

Answer: d) Subtense system

Explanation: The subtense system in tacheometry measures the distance between two points by sighting a target with two fixed points in the telescope, utilizing the principle of subtense for distance calculation.

