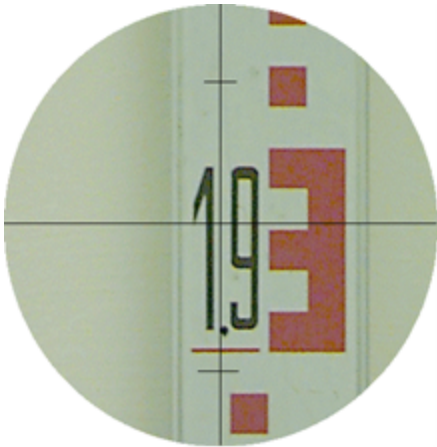




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Continuing Education Course #470  
What Every Engineer Should Know about Surveying  
Part 1

1. What is reading of this rod sighting?



- a. 1.908
- b. - 1.975
- c. 1.932
- d. -1.852

2. What is definition of Surveying?

- a. It is art, something that is created with imagination and skill and that is beautiful or that expresses important ideas or feelings on or beneath the Earth's surface.
- b. It is science, which is study of the natural world based on facts learned through experiments and observation on or beneath the Earth's surface.
- c. The science, art, and technology by which lines, distances, angles, and elevations are established and measured on or beneath the Earth's surface
- d. It is exploration of natural features on or beneath the Earth's surface.

3. What are the two fundamental purposes of surveying?

- a. i) determine the relative positions of existing points or objects, ii) layout or mark the desired positions of new points or objects
- b. i) study the relative positions of existing points or objects, ii) research the desired positions of new points or objects
- c. i) Disturb positions of existing points or objects, ii) mark the desired positions of new points or objects
- d. i) Remove positions of existing points or objects, ii) delete the desired positions of new points or objects

4. Which instrument is used for only linear measurements?

- a. Digital level
- b. Graduated rod (staff)

- c. Electronic Distance Meter
  - d. Electronic Theodolite
5. What surveying instruments are used to measure angles and distances?
- a. Level and Theodolite
  - b. Theodolite and Electronic Distance Meter (EDM) or Total Station
  - c. Level and Electronic Distance Meter
  - d. Electronic Distance Meter and measuring tape
6. When is the horizontal distance considered a perfect straight line?
- a. When the survey is done for a very large distance and area
  - b. When the survey is done without any equipment
  - c. When survey is done for a distance more than 50 miles (80 Kilometers)
  - d. When the survey is done for a local project for less than 20 km (12 miles)
7. What is meant by the term elevation?
- a. It is height measured with reference to a given surface, such as mean sea level (MSL) (or benchmark / datum) or height obtained using GPS.
  - b. It is distance measured with reference to a given surface, such as mean sea level (MSL) (or benchmark / datum) or distance is obtained using GPS), it is called an elevation.
  - c. It is an instrument, which is used for obtaining heights
  - d. It is GPS receiver for obtaining data from satellites
8. What does the term leveling mean?
- a. To determine how to construction of roadway pavement
  - b. To determine relative vertical position of several points separated by long distances.
  - c. To determine how to use level and distance meter.
  - d. To determine how to read leveling rod (or staff).
9. What is the basic assumption for plane surveying?
- a. The surface of the earth were perfectly flat
  - b. The surface of the earth were curved
  - c. The surfacy of the earth were hilly
  - d. The surface of the earth were under sea level
10. How does geodetic surveying differ from plane surveying? Which of the following statements is false?
- a. Plane surveying ignores the curvature of the earth, while geodetic surveying considers it
  - b. Plane surveying is suitable for small areas, whereas Geodetic surveying is suitable for surveying large areas
  - c. Plumb (gravity) lines are parallel in geodetic surveying, while plumb (gravity) lines are not parallel in plane surveying.
  - d. Triangles formed in plane surveying are plane triangles, but triangles formed in geodetic surveying are spherical triangles.
11. Under what circumstances is it necessary to conduct a geodetic survey?
- a. When it uses the principles of plane geometry and plane trigonometry to compute the result of surveys.
  - b. To map large areas and to establish large-scale networks of points on the earth for horizontal and vertical control
  - c. To assume that horizontal lines straight line and all vertical lines are parallel.
  - d. To map a small local project with distance less than 20 km (12 miles)
12. Which of these survey methods gives a legal description of borders of a property?

- a. Metes and bounds
- b. Lot and block
- c. Rectangular survey system
- d. All of these answers are correct

13. The surveys which are carried out for the construction of roads, parks water supply system, sewer and other constructional work is called:

- a. City surveying
- b. Traverse surveying
- c. Cadastral surveying
- d. Hydrographic surveying

14. An engineering firm has been hired to design a new freeway. What type of survey will it use to help in the design?

- a. Boundary survey
- b. Metes and bounds
- c. Route survey
- d. Political survey

15. What are contours?

- a. Shape of the ground showing lines of equal elevation
- b. Shape of a mattress, when we sleep
- c. Shape of water surface, when winds are high
- d. Shape of a chair pad foam, when we sit

16. When is construction surveying done?

- a. During construction, to help the contractor
- b. Before construction, to mark the positions of new points on the ground.
- c. After construction, to record position of new points
- d. During design, to provide information to the engineer.

17. Why is the proper recording of field notes a very important part of surveying practice?

- a. To complete boundary survey
- b. To perform user survey
- c. To prepare metes and bounds
- d. It helps in eliminating field mistakes and blunders

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