Total number of printed pages:5 **D/4th/DCE404**

2021

SURVEYING-II

Full Marks: 60

Time: Two hours

The figures in the margin indicate full marks for the questions.

A. Multiple Choice Questions 1 x 20=20

1. Due to parallax accurate bisection is not possible. The error can be eliminated by
   a. Cleaning the eye piece
   b. Cleaning the objective
   c. Focusing the eye-piece and objective
   d. Changing the line of sight
2. The method used to orient a plane table with reference to two inaccessible points is
   a. Radiation method
   b. Intersection method
   c. Resection method
   d. Two point problem
3. The method of tacheometry in which the observation is made with stadia wires with variable interval is known as
   a. Movable hair method
   b. Fixed hair method
   c. Subtense method
   d. Tangential method
4. The fundamental lines of transit theodolite are
   a. Horizontal axis and line of collimation
   b. Vertical axis

c. Axes of plate levels and bubble line of telescope level

d. All of the above

5. A transit is one in which the line of sight can be reversed by revolving the telescope through 180° in the _____ plane.

   a. vertical

   b. Horizontal

   c. Inclined

   d. All of the above

6. Inaccurate centring of plane table is an example of _____ error.

   a. Instrumental error

   b. Personal error

   c. Natural error

   d. It is not an error

7. The process of bringing the vertical circle to the right of the observer if it is originally to the left and vice-versa is called _____.

   a. Plunging the telescope

   b. Transiting the telescope

   c. Changing the face

   d. None of the above

8. The axis about which the telescope and the vertical circle of a theodolite rotates in the vertical plane is called _____.

   a. Vertical axis

   b. Axis of the instrument

   c. Axis of collimation

   d. Trunnion axis

9. For a horizontal line of sight, the distance equation by tacheometric survey is given as _____.

   a. D=K.s+C

   b. D=K.s-C

   c. D=K/s+C

   d. D=K+s.C

10. Distance of *AB* on ground is 24.50 m. What is the distance of *ab* on plane

table, if the scale is 1cm=15m?

a. 1.66 m
b. 1.66 cm
c. 1.63 m
d. 1.63 cm

11. Which of the following is NOT true for plane table surveying
    a. Take less time
    b. Minimize the accumulation of errors
    c. Make plotting of map easier
    d. It is a graphical method
12. Which of the following is NOT true for theodolite survey.
    a. Theodolite is the most precise instrument for measuring angles
    b. Theodolite cannot be used in undulating areas
    c. Non-transit theodolites are obsolete
    d. Theodolite can be used for measuring distance
13. Which of the following is true for theodolite survey
    a. The vertical circle contains the verniers A and B
    b. The upper plate has graduation mark from 0° to 360°
    c. The tangent screw is used to clamp the lower plate
    d. The upper and lower plates are clamped together using upper clamp
14. In alidade the edge used for drawing lines is called _____.
    a. Scale
    b. Telescopic alidade
    c. Fiducial edge
    d. Plane alidade
15. The method of plane tabling which require a minimum of two instrument stations is called _____.
    a. Radiation
    b. Traversing
    c. Intersection
    d. Resection

16. In _____ the angles are added mechanically.
    a. Reiteration method
    b. Repetition method
    c. Resection method
    d. Angular method
17. Theodolite cannot be used for traversing
    a. True
    b. False
    c. Depends on the ground profile
    d. Depends on the type of theodolite
18. Orientation of plane table cannot be done by
    a. Back sighting
    b. Trough compass
    c. Resection
    d. Intersection
19. Plumbing fork is used for
    a. Centring
    b. Sighting
    c. Drawing
    d. Fixing
20 The horizontal axis of the theodolite is the line
    a. Tangential to the plate bubble
    b. Tangential to the altitude level
    c. Perpendicular to and passing through the centre of the vertical circle
    d. The line joining the intersection of the cross hairs and the centre of the objective

B. Very Short Question 2*6=12

1. What is the difference between while and do while loop?
2. What is resection in plane table survey?
3. What is face left observation?
4. Define tacheometric surveying?

5. Name the fundamental lines of a theodolite?
6. The vertical angles to staff held at A were +2°20′ and +5°40′ at staff reading 1 m and 3 m respectively. Find the horizontal distance and reduced level of A if the height of instrument was 435.500 m above datum.

C Short Question 4*7=28

1. Write the procedure to determine the horizontal angle by repetition method.
2. Find the elevation of top of a chimney from the following data:

Inst. Station	*Reading on B.M.*	*Angle of elevation*	*Remarks*
A	0.845	12°36′	R.L. of B.M. = 425.500 m
B	1.205	8°30′	Distance AB = 50 m

Stations A and B and the top of the chimney are in the same vertical plane.

3. Derive the formulae for height and distance of an object which is at an angle of depression from the instrument station. The object and instrument stations are in the same vertical plane and the two instrument axes are at different levels.
4. An instrument was set up at station P and the angle of elevation to the top of a tower was 6°20′. The staff reading on a B.M. of R.L. 125.250 m was 2.450 m. What is the R.L. of foot of the tower if the height of tower was 10 m.
5. What is traversing? Explain the procedure of traversing with a plane table.
6. What are the advantages and disadvantage of plane table survey?
7. Write the procedure to determine the tacheometric constants K and C by field observation method.

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