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**END SEMESTER EXAMINATION - 2020**

Semester : 4th

Subject Code : CT-404

**SURVEYING - II**

Full Marks - 70

Time - Three hours

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

**PART - A**

Marks - 25

1. Fill in the blanks : 1×10=10
- (a) In a plane table survey, the instruments used for centring are \_\_\_\_\_ and \_\_\_\_\_.
- (b) The method of \_\_\_\_\_ in plane table survey can be done with a single instrument station.
- (c) The working edge of the alidade is called \_\_\_\_\_ edge.

[Turn over



3. (d) \_\_\_\_\_ is the most precise instrument used for measuring vertical and horizontal angles.
- (e) When the vertical circle of a theodolite is to the right of the observer, the observation taken is called \_\_\_\_\_.
- (f) The \_\_\_\_\_ screws in a theodolite is used for accurate bisection of object.
- (g) The stadia method is based on the principle that the ratio of the perpendicular to the base is constant in similar \_\_\_\_\_ triangles.
- (h) A transit theodolite fitted with a \_\_\_\_\_ can be used for tacheometric survey.
- (i) The process of determining the differences of elevations of stations from observed vertical angles and known distances is called \_\_\_\_\_.
- (j) The distance formula to compute the distances using tacheometer, for a horizontal line of sight is \_\_\_\_\_.

2. Write true or false :  $1 \times 10 = 10$

- (a) Orientation by backsighting can be done with the help of trough compass.



- (b) Tacheometric measurement is preferred to chaining in undulating grounds.
- (c) Anallactic lens is provided in internal focussing telescope to eliminate the additive constant.
- (d) Alidade in plane table survey is used for measuring distance.
- (e) The trunnion axis is the axis about which the telescope can be rotated in a vertical plane.
- (f) Error due to refraction in geodetic survey is a type of \_\_\_\_\_ error.
- (g) The method of determining the position of instrument station with the help of points whose position are plotted is called \_\_\_\_\_.
- (h) Plum bob is used for levelling a tacheometer.
- (i) The difference of verniers A and B in theodolite is always \_\_\_\_\_.
- (j) Reiteration method in theodolite survey is used when a number of objects has a common vertex point.



3. Choose the correct answer :  $1 \times 5 = 5$

(a) When you transit the telescope, you rotate the telescope about

- (i) the vertical axis
- (ii) the optical axis of the telescope
- (iii) the trunnion axis
- (iv) the line of collimation

(b) Parallax is a condition in which

- (i) the image is not visible
- (ii) the image is inverted
- (iii) the image is distorted
- (iv) the image is not in the plane of cross-hairs

(c) The constants K and C of a tacheometer is equal to

(i)  $\frac{f}{i}$  and  $(f + i)$       (ii)  $\frac{f}{i}$  and  $\frac{d}{f}$

(iii)  $\frac{f}{i}$  and  $(f + d)$       (iv)  $\frac{f}{i}$  and  $(i + d)$



(4)



(d) The fundamental lines of transit theodolite are

(i) Horizontal axis and line of collimation

(ii) Vertical axis

(iii) Axes of plate levels and bubble line of telescope level

(iv) All of the above

(e) When the line of sight is inclined, having an angle of depression and staff held vertical, the distance formula in tacheometric surveying is

(i)  $Ks + C$

(ii)  $Ks \cos\theta + C \cos\theta$

(iii)  $Ks \cos^2\theta + C \sin\theta$

(iv)  $Ks \cos^2\theta + C \cos\theta$

