

Total No. of Questions : 8]

SEAT No. :

PB-3597

[Total No. of Pages : 2

[6261]-2

S.E.(Civil)

SURVEY

(2019 Pattern) (Semester - IV) (201009)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) Answer Q1 or 2, Q3 or 4, Q5 or 6, Q7 or 8
- 2) Figures to the right indicates full marks
- 3) Draw neat figures wherever necessary
- 4) Assume necessary data
- 5) Use of scientific calculators is allowed

- Q1) a)** Derive the formula for horizontal distance in case of horizontal sight when external focussing telescope. **[6]**
- b) Elaborate the characteristics of contours with neat sketches. **[6]**
- c) Determine the constants of a tacheometer from the following taken with it: **[6]**

Distance of staff from the tacheometer vertical axis	Reading against stadia wires	
	Lower wire	Upper wire
30m	1.086m	1.383m
60m	0.924m	1.521 m

OR

- Q2) a)** Enlist & explain various errors in the tacheometry survey. **[6]**
- b) State the different methods of contouring. Explain any one with sketch. **[6]**
- c) Two distances of 20 m and 100 m were accurately measured out and the intercepts on the staff between the outer stadia webs were 0.196 m at the former distance and 0.996 at the latter. Calculate the tacheometric constants. **[6]**

P.T.O

- Q3)** a) Explain the method of setting out simple circular curve by offsets from long chord. [6]
 b) Two tangent intersect at chainage of 1750m. The angle of intersection is 152° . Calculate all data necessary for setting out curve of 246m by the reflection angle method. The peg interval is considered as 25m. Prepare a setting out table if the least count of vernier is 20". Apply check also. [6]
 c) Explain the types of vertical curve with sketches. [5]

OR

- Q4)** a) Explain Rankine's method of Deflection for setting out curve. [6]
 b) Two straights meet at chainage 1800m with deflection angle 60° . The radius of curve is 100m. Find [8]
 i) Tangent Length
 ii) Long Chord
 iii) Length of curve
 iv) Chainage of T.
 c) Explain necessity of transition curves. [3]

- Q5)** a) Describe horizontal and vertical controls in construction surveys. [6]
 b) Explain in detail – Different segments of SBPS. [6]
 c) Write note on – Survey for Roads / Railways. [6]

OR

- Q6)** a) Write note on – Use of GPS in surveying. [6]
 b) Elaborate Survey for Tunnel. [6]
 c) Write applications of SBPS in surveying. [6]

- Q7)** a) What is hydro graphic surveying and what are its objectives. [5]
 b) Explain the classification of various triangulation systems. [6]
 c) Write note on - Classification of aerial photographs. [6]

OR

- Q8)** a) Explain the concept of strength of figure in Geodetic Surveying. [5]
 b) Describe how a shore line survey is conducted in hydro graphic surveying. [6]
 c) What are general hints used for flight Planning in aerial photogrammetry. [6]

