

Total No. of Questions : 8]

SEAT No. :

P9077

[Total No. of Pages : 2

[6179]-202

S.E. (Civil Engineering)

SURVEY

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

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) Answer Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8.
- 2) Neat sketches must be drawn wherever necessary.
- 3) Figures to the right indicate full marks.
- 4) Use of electronic pocket calculator is allowed.
- 5) Assume suitable data, if necessary.
- 6) Use of cell phone is prohibited in examination hall.

- Q1) a) Explain with sketch the method of finding tacheometric constants of multiplying (m) and Additive (c)? [5]
- b) The following observations were made using a tacheometer fitted with an analytic lens, multiplying constant being 100. [8]

Instr ⁿ . Station	Instr ⁿ . Height.	Staff Station	Vertical Angle	Hair Reading	Remark
M	1.215	P	-2°40'	0.985, 1.125, 1.305	R.L of M = 251m
	1.215	Q	+4°20'	0.275, 0.785, 1.350	

Find R.L. of point P and Q also find Distance PQ.

- c) State the Uses of contour lines? [5]

OR

- Q2) a) A tacheometer with analytic lens. Having the multiplying constant 100 was used and the following observations were made of staff held vertical. [8]

Instrumentsation	H.I.(m)	Vertical Angle	Staff at	Staff Reading
O	1.210	+ 3°20'	A	1.215, 1.755, 2.310
O	1.210	+ 8°30'	B	1.425, 1.815, 2.340

R.L. of station O is 152.00m calculate the R.L. of A & B, distance and gradient of line AB?

- b) State characteristics of contour maps? [4]
- c) Enlist different indirect methods of contouring? Explain any one method with detailed sketch? [6]

P.T.O.

- Q3)** a) Write a note on uses and types of transition curves? [5]
b) Two straights AB and BC meet at chainage of 950 m. A simple circular curve of 300 m radius joins them. The deflection angle between two straights is $26^{\circ} 12' 00''$. Tabulate the necessary data to layout the curve by Offset from long chord. Take chord interval as 10 m. [7]
c) State different types of curves, Explain compound curve with sketch? [5]

OR

- Q4)** a) Two tangents intersect at a chain age of 1125 m the intersection angle $152^{\circ} 40' 00''$. Calculate all data required to set out curve of radius 250 m by deflection angle method. [7]
b) Enlist various methods of setting out curves and explain any one with sketch? [5]
c) Draw Simple curve with its components and Notations? [5]

- Q5)** a) Write a short note on construction survey? [6]
b) State the advantages of SBPS (Space Based Positioning System)? [6]
c) Explain with sketch the procedure of setting out of tunnel center line? [6]

OR

- Q6)** a) Enlist the names of satellite? Explain any one in details? [6]
b) Write a short note on setting out of building on ground? [6]
c) State the segments and working of SBPS (Space based Positioning system) [6]

- Q7)** a) State different methods of sounding, State any one method in detail? [5]
b) State the working principle and uses of total station? [6]
c) What are the objectives of geodetic Surveying? [6]

OR

- Q8)** a) Explain triangulation method and trilateration method of geodetic survey? [6]
b) Differentiate between Map and Aerial Photographs? [5]
c) What are the equipments used in hydrographic survey? Explain any one? [6]

