Total No. of Questions : 8]

SEAT No. :

PC2778

[Total No. of Pages : 3

[6352]-2
S.E. (Civil)
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 or Q.5 or Q.6, Q.7 & Q.8.***
2) ***Neat sketches must be drawn wherever necessary.***
3) ***Figures to right indicate full marks.***
4) ***Assume suitable data if necessary.***
5) ***Use of electronic pocket calculator is allowed.***
6) ***Use of cell phone is prohibited in examination hall.***

Q1) a) Explain principle of stadia tacheometry and methods for determination of constants. **[5]**

b) A Tacheometer was set up at Station at C and the following readings were obtained on a staff vertically held. Determine RL of point D and distance CD when Constants are 100 & 0.15. RL of BM = 750.50 m **[7]**

Inst Station	Staff Station	Vertical Angle	Hair Reading
C	BM	–5°20’	1.500,1.800,2.450
C	D	+8°12’	0.750,1.500,2.250

c) State characteristics of contours. **[6]**

OR

Q2) a) Define Contour Tnterval, Horizontal Equivalent and state uses of contour maps. **[5]**

b) The following observations were made using a tacheometer fitted with an anallatic lens, Staff held vertically and multiplying constant being 100. Determine RL of point B and distance Between A & B. RL of BM = 255.75 m **[7]**

Inst Station	HI	Staff Station	Vertical Angle	Hair Reading
P	1.255	BM	–4°20’	1.325,1.825,2.325
P	1.255	A	+6°30’	0.850,1.600,2.350
B	1.450	A	–7°24’	1.715,2.315,2.915

c) Enlist different indirect methods of contouring. Explain any one method with detailed sketch. **[6]**

P.T.O.

Q3) a) Draw a neat sketch of Simple Circular curve and Properties of Simple Circular Curves. **[5]**

b) Two straight roads intersect at a chainage of 150.5m. The angle of deflection being 30°. Taking radius of l00 m, calculate necessary data for setting curve by Methods of Offsets from Long Chords. **[7]**

c) Write a note on necessity and types of transition curves. **[5]**

OR

Q4) a) What is transition curve, state the applications of transition curve? **[5]**

b) Two straights AB and BC meet at chainage of 1250 m. A right-handed simple circular curve of 250 m radius joins them. The Intersection angle between two straights is 150°. Tabulate the necessary data to layout the curve by Rankine's method of deflection angle. Take Peg Interval as 20 m and Least Count 20". **[7]**

c) Explain Horizontal Curves and Types of Horizontal Curve. **[5]**

Q5) a) Explain Segments and advantages of Space Based Positioning System. **[6]**

b) Explain necessity of horizontal and vertical controls in construction activity. **[5]**

c) Write a note on Construction Survey. **[6]**

OR

Q6) a) State Different names of satellites and Explain any One in details. **[6]**

b) Write a short note on survey for drainage line work. **[6]**

c) Write a short note on Shore Line Survey. **[5]**

Q7) a) What do you mean by triangulation and trilateration in geodetic survey? **[6]**

b) Define Sounding and state any one method of sounding with sketch. **[6]**

c) Differentiate between Map and aerial photograph. **[6]**

OR

Q8) a) State the working principle and applications of total station. **[6]**

b) Differentiate between Plane and Geodetic Survey. **[6]**

c) Explain sounding methods and sounding equipment of hydrographic survey. **[6]**

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