Total No. of Questions : 8]

PA-1185

SEAT No. :

[Total No. of Pages : 3

[5925]- 207
S.E. (Civil)
SURVEY
(2019 Pattern) (Semester-IV)(201009)

Time :2½ Hours] *[Maximum. Marks : 70*

Instruction 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 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 with sketch the fixed hair method of tacheometry, when line of sight is inclined downward (depression) and staff is held vertical? **[6]**

b) State the Characteristics of contour lines? **[4]**

c) The following observations were made using a tacheometer fitted with an analytic lens, multiplying constant being 100. **[8]**

Instrⁿ. Station	Instrⁿ. Height	Staff Station	Vertical Angle	Hair Reading	Remark
O	1.550	A	+4°30’	1.155,1.755,2.355	RL of O
	1.550	B	+10°15’	1.250,2.000,2.750	=150 m

Find R.L. of point A and B also find Distance AB.

OR

P.T.O.

Q2) a) A tacheometer with analystic lens,Having the multiplying constant 100 was used and the following observations were made on staff held vertical. **[8]**

Instrument station	H.I. (m)	Vertical Angle	Staff at	Staff Reading
P	1.8	+2°40'	M	1.25,1.93,2.56
P	1.8	–4° 40'	Q	1.45,1.85,2.30

R.L of station M is 50.00 m Calculate the R.L. of P&Q ,distance PQ and gradient?

b) State different uses of contour maps? **[4]**

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

Q3) a) Write a note on necessity and types of transition curves. **[5]**

b) Two straights PI and QI meet at chainage of 1250 m. A right handed simple circular curve of 250 m radius joins them. The deflection angle between two straights is 30°. Tabulate the necessary data to layout the curve by Offset from long chord. Take chord interval as 10 m. **[7]**

c) What are different types of curves, explain any one with sketch . **[5]**

OR

Q4) a) Two tangents intersects at a chain age of 150.5 m the intersection angle 150° calculate the following quantities for setting out all curves of radius 100m . **[7]**

Calculate.

Calculate.

i) Tangent length

ii) Length of long chord

iii) Length of the curve

iv) Chainage of Starting point and end point of curve

v) Apex Distance

vi) Versed sine of curve.

b) Enlist various linear methods of setting out curves and explain any one with sketch. **[5]**

c) Draw compound curve with its components. **[5]**

Q5) a) Enlist the limitations of the prevalent survey techniques and also give advantages of Space Based positioning System? **[6]**

b) Write a note on setting out a building? **[6]**

c) Explain how the verticality of tall building is checked? **[6]**

OR

Q6) a) State Different names of satellites and Write a note on GLONASS (Global Navigation and Surveying System). **[6]**

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

c) Explain the how open traversing surveying work is conducted. **[6]**

Q7) a) What are different methods of sounding,State any one method in detail? **[5]**

b) State the working principle and applications of total station? **[6]**

c) Differentiate between Terrestrial photogrammetry and Aerial photogrammetry? **[6]**

OR

Q8) a) Describe the objective and classification of triangulation survey? **[6]**

b) State the classification and applications of Photogrammetry in surveying? **[5]**

c) What are the objectives of hydrographic survey? **[6]**