Total No. of Questions—8] [Total No. of Printed Pages—3

Seat No.	

[5352]-104

S.E. (Civil) (I Sem.) EXAMINATION, 2018
SURVEYING
(2012 PATTERN)

Time : Two Hours **Maximum Marks : 50**

N.B. :— (*i*) Answer Q. No. **1** *or* Q. No. **2**, Q. No. **3** *or* Q. No. **4**, Q. No. **5** *or* Q. No. **6** and Q. No. **7** *or* Q. No. **8**.
(*ii*) Neat sketches must be drawn wherever necessary.
(*iii*) Figures to the right indicate full marks.
(*iv*) Assume suitable data, if necessary.
(*v*) Use of electronic pocket calculator is allowed in the examination.
(*vi*) Use of cell phone is prohibited in the examination hall.

Q. 1 a) Explain intersection method of plane table surveying with sketch. Give it's advantages and disadvantages over other methods. **[06]**

b) Following readings were observed during a reciprocal leveling with one level, **[06]**

Instrument at	Staff Readings on		Remark
	A	B	
A	1.115	1.615	Distance between A & B is 1200 m
B	1.750	2.255	

Find:
a) the true R.L. of B, if R.L. of A = 500.5025 m.
b) the combined correction due to curvature and refraction
c) the error in the collimation adjustment of the instrument.

OR

Q. 2 a) Find the included angles of the closed traverse PQRSTP and correct them. **[06]**

Line	PQ	QR	RS	ST	TP
F.B.	150^0 00'	230^0 30'	306^0 15'	298^0 00'	49^0 30'
B.B.	330^0 00'	48^0 00'	127^0 45'	120^0 00'	229^0 30'

P.T.O.

b) What is visible horizon distance? State its formula. Calculate visible horizon distance from 60 m high tower. **[06]**

Q. 3 a) Define following terms: **[06]**
Right Swing, Bubble down, Face left, Transiting

b) Two tangents intersect at chainage of 1210 m with deflection angle of 36^0. Calculate the necessary data for setting out a curve with radius of 250 m by deflection angle method. Take peg interval as 30 m. **[06]**

OR

Q. 4 a) PQRSP is a closed traverse. Determine the missing data in following table. **[06]**

Line	PQ	QR	RS	SP
Length (m)	156.5	-----	234.8	203.1
Bearing	78^0 40'	-----	251^0 18'	3^0 45'

b) What are vertical curves? Explain with sketches. Give their necessity. **[06]**

Q. 5 a) Explain the procedure for making horizontal axes perpendicular to vertical axis. **[05]**

b) A tacheometer fitted with analytic lens was used to observe the following readings: **[08]**

Instrument at	Staff at	Vertical angle	Staff Readings
A	P	$+ 12^0$	0.906, 1.721, 2.550
	Q	$- 10^0$	0.744, 2.199, 3.654

Determine the RL of Q. Take multiplying constants as 100 and RL of A = 500.000 m.

OR

Q. 6 a) Enlist and explain various errors in the tachometry survey. **[04]**

b) What is tacheometric surveying? Explain principle of tacheometry with sketch. **[05]**

c) Readings on a vertical staff are taken from a station O which is 70 m from A and 120 m from B. The stadia readings on staff at A are 1.235, 1.483, 1.731 and that on staff at B are 1.345, 1.843, 2.341. Determine the instrument constants. **[04]**

Q. 7 a) Write a short note on Special features of Electronic Total Station (ETS). **[06]**

b) Write a short note on Tunnel survey with respect to transferring the alignment through shafts, with sketch. **[07]**

OR

Q. 8 a) Describe the procedure of setting out sewage line. **[06]**

b) What is ETS? Enlist various advantages and disadvantages of ETS over other surveying instruments. **[07]**