201006

Seat No.	

S.E. (Civil) (Semester – I) Examination, 2014
SURVEYING
(2012 Course)

Time : 2 Hours Max. Marks : 50

Instructions : *1) **Neat** diagrams must be drawn **wherever** necessary.*
*2) Figures to the **right** side indicate **full** marks.*
*3) Use of calculator is **allowed**.*
*4) Assume suitable data if **necessary**.*

1. a) What are the advantages and disadvantages of plane table survey ? **6**

   b) The following notes refer to the reciprocal level taken with one level **6**

Instrument At	Staff readings on		Remarks
	A	B	
A	1.056	2.697	Distance between A and B = 1000 m R.L. of A = 625.500 m
B	0.987	2.418	

Find :
a) the true reduced level of B.
b) combined correction for curvature and refraction and
c) the error in the collimation adjustment of the instrument.

OR

2. a) Find the included angles of the traverse ABCDEA and correct them. **6**

Line	Fore bearings	Back bearings
AB	191°15′	13°
BC	39°00′	222°30′
CD	22°45′	200°30′
DE	242°15′	62°45′
EA	330°00′	147°45′

P.T.O.

b) Explain the uses of contours. 3

c) A level is set up at O on a line AB 50 m from A and 1000 m from B. The back sight on A is 0.584 m and foresight on B is 3.493 m. Find the true difference of level A and B. 3

3. a) The following are the length and bearings of the sides of a traverse PQRSP. 6

Line	Length in M	Bearings
PQ	186.00	30°15′
QR	649.6	134°32′
RS	424.8	222°18′

Compute the length and bearing of SQ.

b) Draw neat sketch of compound curve and state the relation between degree and radius of simple circular curve. 6

OR

4. a) Define the following terms : 6
   i) Face right
   ii) Swinging
   iii) Telescope inverted
   iv) Axis of telescope
   v) Horizontal axis
   vi) Centering.

b) Two straights meet at an intersection angle of 146°48′ and chainage 1190.00 m these straights are to be joined by circular curve of radius 300 m calculate data necessary for setting simple circular curve by method of offsets from chord produced. Peg interval = 30 m. 6

5. a) Explain the procedure of permanent adjustment of theodolite to make the trunion axis perpendicular to vertical axis. 5

b) Following observation were taken with a tacheometer on vertically held staff. 8

Instrument Station	Staff station	Vertical angle	Stadio readings	Remark
A	P	10°30'	3.50, 2.815, 2.13	R.L. of station P = 100 m
	Q	–8°30'	1.87, 0.99, 0.11	

Instrument is provided with analytic lense. Take multiplying constants 100 find reduced level of Q.

OR

6. a) Explain the method of repetition and state the errors eliminated by this method. **5**

   b) Two distance of 80 m and 120 m were accurately measured and the intercepts of staff between the stadio hairs were 0.790 and 1.190 with horizontal line of sight respt. Calculate values of additive constant and multiplying constant. **4**

   c) Explain principle of stadia method. **4**

7. a) Briefly explain how horizontal and vertical control are established. **6**

   b) Describe setting out tunnel centre line on surface. **7**

   OR

8. a) What is total station ? State the classification based on range of total station. **6**

   b) Write short notes on survey for roads. **7**
