Total No. of printed pages = 4

CT-404/Surv-II/4th Sem/2013/N

SURVEYING – II

Full Marks – 70

Pass Marks – 28

Time – Three hours

The figures in the margin indicate full marks for the questions.

Answer any *five* questions.

1. (a) Explain with sketches, the following methods a locating a point by plane table surveying. 7

   (i) Radiation

   (ii) Intersection

   (iii) Resection

   (b) Explain the method of measuring horizontal angles by reiteration method. 7

2. (a) Derive an expression to determine the R.L of top of an object when the base of the object is inaccessible and instrument stations not in the same vertical plane as the elevated object. 10

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(b) What are the advantages of plane table surveying in comparison to other methods of surveying ? 4

3. (a) Explain the temporary adjustment of a transit theodolite. 7

(b) The stadia intercept read by means of a fixed hair instrument on a vertically held staff is 1·05 metres, the angle of elevation being 5°36'. The instrument constants are 100 and 0·3. What would be total number of turns registered on a movable hair instrument at the same station for a 1·75 metre intercept on a staff held on the same point, the vertical angle in this case being 5°24' and the constants 1000 and 0·5 ? 7

4. (a) Explain the following in context of plane table surveying : 5×2=10

(i) Orientation

(ii) Fiducial edge

(iii) Trough compass

(iv) Plumbing fork

(v) Centering.

(b) What is parallax ? Describe the procedure to eliminate parallax. 4

5. (a) An instrument was set up at P and the angle of elevation to a vane 4m above the foot of the staff held at Q was 9°30'. The horizontal distance between P and Q was known to be 2000 metres. Determine the R.L of the staff station Q, given that the R.L of the instrument axis was 2650·38. 6

(b) Two distances of 20 and 100 metres were accurately measured out and the intercepts on the staff between the outer stadia webs were 0·196m at the former distance and 0·996 at the latter. Calculate the tacheometric constants. 8

6. (a) Explain the principle of stadia method in tacheometric surveying. 6

(b) Find the elevation of top of the chimney from the following data : 8

Inst. station	Reading on B.M	Angle of elevation	Remarks
A	0·862	18°36'	RL of B.M = 421·380m
B	1·222	10°12'	Distance AB = 50m

7. (a) Describe any one method to determine the constant K and C of a tacheometre. 6

(b) Explain the procedure to solve three point problem by Bessel's graphical solution. 8