Total No. of printed pages = 3

CT-404/Surveying-II/4th Sem/2016/N

SURVEYING-II

Full Marks – 70

Pass Marks – 28

Time – Three hours

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

Answer *all* the questions.

1. A tacheometer is set up at an intermediate point on a traverse course PQ and the following observations are made on a vertically held staff.

Staff station	Vertical angle	Staff intercept	Axial hair readings
P	$+8^{\circ}36'$	2.350	2.105
Q	$+6^{\circ}6'$	2.055	1.895

The instrument is fitted with an analactic lens and the constant is 100. Compute the length of PQ and reduced level of Q, that of P being 321.50 metres. 10

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2. (a) Explain the following methods of plane tabling : 6

(i) Intersection

(ii) Resection

(b) Write the procedure to determine a vertical angle by transit theodolite. 4

3. A theodolite was set up at a distance of 200m from a tower. The angle of elevation to the top of the parapet was $8^{\circ}18'$, while the angle of depression to the foot of the wall was $2^{\circ}24'$. The staff reading on the B.M of RL 248.362m with the telescope horizontal was 1.286m. Find the height of the tower and the RL of the top of the parapet. 10

4. What is three-point problem ? How is it solved ? 10

5. (a) Describe the procedure of reiteration method also draw the ovservation table. 4

(b) Derive an expression for height and distance of an object when base of the object is inaccessible, object and instrument are in same vertical plane and instrument axes are at different levels. 6

6. Explain the principle of stadia method and derive the expression for constants K and C. 10

7. Explain the following : 5×2=10

   (a) Elimination of parallax.

   (b) Orientation by trough compass.

   (c) Correction for curvature and refraction.

   (d) Centering.

   (e) Tacheometric surveying.