Total No. of printed pages = 3

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

SURVEYING – II

Full Marks – 70

Pass Marks – 28

Time – Three hours

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

1. (a) Which method would you follow to determine the horizontal angles between group of objects having a common vertex point ? Explain the procedure. 7

   (b) What are face left and face right observations? Why is it necessary to take both face observations ? 3

2. 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

[Turn over

3. Find the elevation of top of the chimney from the following data : 10

Inst. station	Reading on BM	Angle of elevation	Remarks
A	0.862	18°36'	RL of BM = 421.380m
B	1.222	10°12'	Distance AB = 50m

Stations A and B and the top of chimney are in the same vertical plane.

4. Derive the distance and elevation formulae for an elevated line of sight at an inclination of θ, when the staff is held normal to the line of sight by tacheometric surveying. 10

5. An observation with a percentage theodolite gave staff readings of 1.052 and 2.502 for angles of elevation of 5% and 6% respectively. On sighting the graduation corresponding to the height of the instrument axis above the ground, the vertical angle was 5.25%. Compute the horizontal distance and the elevation of the staff station if the instrument station has an elevation of 942.552m. 10

6. What is three-point problem ? How is it solved by Bessel's graphical solution ? 10

7. Explain the following in context of plane table surveying : 5×2=10

(a) Radiation

(b) Resection

(c) Orientation

(d) Plumbing fork

(e) Fiducial edge.