Roll No.

B.E / B.Tech (Full Time) DEGREE END SEMESTER EXAMINATIONS, APRIL / MAY 2014

CIVIL ENGINEERING

Semester IV

CE 9254 Surveying II

(Regulation 2008)

Time: 3 Hours   Answer ALL Questions   Max. Marks 100

PART-A (10 x 2 = 20 Marks)

1.   What are the different systems of tacheometric measurements?

2.   Distinguish between fixed hair and movable hair methods of tacheometry.

3.   What is meant by well conditioned triangle?

4.   Define 'Trigonometric levelling'.

5.   Mention the sources of errors in surveying.

6.   State the rule of 'least squares'.

7.   Distinguish between celestial sphere and terrestrial sphere.

8.   List various corrections required for the observed altitude and azimuth.

9.   What are the fundamental quantities measured by a Total Station?

10. What is meant by cadastral surveying?

Part – B (5 x 16 = 80 marks)

11. Derive an expression for the horizontal distance D and difference in elevation V of a vertical staff from a tacheometry when the line of sight is inclined.

12. a) Explain the various corrections to be applied to a measured base line. Give expressions for their nature and magnitude.

(OR)

   b) Two triangulation stations A and B are 60 km apart and the elevation of A is 240 m and that of ground at B is 280 m. Find the minimum height of a signal required at B so that the line of sight may not pass near the ground than 2.0 m. Assume the elevation of intervening ground as uniformly 200 m.

13. a) The distance between two points A and B was measured 12 times under identical conditions, and measured values in metre were recorded as:
   63.48, 63.45, 63.42, 63.44, 63.48, 63.45, 63.43, 63.44, 63.47, 63.46, 63.43, 63.47
   Determine the standard deviation, probable error of a single observation, most probable error of the mean and maximum error.

(OR)

   b) Adjust the following angles closing the horizon.
   A = 122°05'58.9" weight 2
   B = 86°45'16.4" weight 1
   C = 72°50'31.2" weight 3
   D = 78°18'16.6" weight 1

14. a) Name various astronomical coordinate systems used and explain any two of them.

    (OR)

    b) List out the various methods of determination of azimuth of a line by field observation and explain any two of them.

15. a) Explain the principle of different types of EDM instruments. Discuss their advantages and limitations also.

    (OR)

    b) What is meant by three point problem in hydrographic surveying? How would you solve it by tracing paper method?