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B.E./B.Tech(Full Time) DEGREE END SEMESTER EXAMINATIONS, November /December 2011

CIVIL ENGINEERING
FOURTH SEMESTER – (REGULATION 2008)
CE 9254– SURVEYING- II

48

Time: 3 hrs

Max Marks: 100

Answer ALL Questions

Part – A (10 x 2 = 20 Marks)

1. What are the systems of Tacheometric measurements?
2. What are the merits of Anallactic telescope when compared with simple external focusing telescope?
3. The constant for an instrument is 850, the value of $C = 0.5$ m, and intercept $s = 3$ m. Calculate the distance from the instrument to the staff when the micrometer reading are 4.628 and 4.626 and the line of sight is inclined at $+ 10^{\circ}36'$. The staff was held vertical
4. What is meant by a satellite station?
5. Define Principle of Least Square
6. What is accidental error of measurement?
7. What is meant by sidereal time?
8. Define Soundings
9. List the various types of EDM instruments
10. Define Isocenter

Part – B (5 x 16 = 80 Marks)

11. (a)(i) Explain how a substance bar is used with a theodolite to determine the horizontal distance between two points. (8 marks)
- (ii) Explain how you would determine the constants of a tacheometer. (8 marks)
- 12 (a) i) Two triangulation stations A and B are 60 kilometers apart and have elevations 240 m and 280 m respectively. Find the minimum height of signal required at B so that the line of sight may not pass near the ground than 2 meters. The intervening ground may be assumed to have a uniform elevation of 200 meters. (8 marks)

ii) Calculate the sag correction for a 30 m steel tape under a pull of 100 N in three equal spans of 10 m each. Mass of 1 cubic cm of steel = 7.86 g. Area of cross section of tape = 0.08 sq.cm. (8 marks)

(OR)

(b) What is meant by a satellite station and reduction to center? Derive expression for reducing the angles measured at the satellite stations to centre (16 marks)

13. (a) (i) Discuss about Laws of Weights (8 marks)

(ii) The angles of a triangle PQR were observed as follows P = $77^{\circ}14'20''$ weight 4, Q = $49^{\circ}40'35''$ weight 3 and R = $53^{\circ}04'52''$ weight 2. Compute the most probable value of the angles P, Q and R using method of correlates. (8 marks)

(OR)

(b) Derive the expressions for the determination of Probable Error (16 marks)

14. (a) Explain about Azimuth calculation (16 marks)

(OR)

(b) Discuss about different types of Time and its conversion (16 marks)

15. (a) How the Soundings can be plotted using three point problem (16 marks)

(OR)

(b) Discuss in detail about measurement of current and discharge of a river (16 marks)