

Code No: R21015/R10

Set No. 1**II B.Tech I Semester Supplementary Examinations, May/June 2017****SURVEYING****(Civil Engineering)****Time: 3 hours****Max Marks: 75****Answer any FIVE Questions**
All Questions carry equal marks

1. (a) What are the objects of Surveying. Also explain the fundamental principles of Surveying.
(b) A 30m chain was found to be 15cm too long after chaining 1524m. The same chain was found to be 30.5 cm too long after chaining the total distance of 3048m. Find the correct length of the total distance chained assuming that the chain was correct at the commencement of chaining. [7+8]
2. (a) Explain the terms : Check Line, Base Line, Tie Line, and oblique offset.
(b) Find the maximum length of offset so that the displacement on paper from both sources of error does not exceed 0.2 mm given that the offset is measured with an accuracy of 1 in 25 and the scale is 1cm = 50m. [8+7]
3. (a) What do you understand by "leveling"? What are its objects? [7]
(b) With the help of a neat sketch explain the following terms:
 - i. Level surface
 - ii. Level line
 - iii. Horizontal plane
 - iv. Horizontal line[2×4=8]
4. (a) List the methods of calculating area as from offsets to a base-line.
(b) Explain the trapezoidal rule.
(c) How does the trapezoidal rule compare with other rules. [15]
5. (a) Differentiate between
 - i. Transiting and swinging of the telescope.
 - ii. Face left and face right readings.
 - iii. Clamp screw and tangent screw.
 - iv. Telescope normal and telescope inverted.
(b) In a theodolite traversing, the distances are to be measured to a precision of 1 in 15,000. Determine the accuracy measurements. [10+5]
6. (a) What is tacheometry? Describe its uses.
(b) To determine the distance between two points P and Q, and the R.L. of Q, the following observations were made:
Height of tacheometer at P=1.480 m

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Set No. 1Vertical angle at P = $+5^{\circ}20'$

Staff readings (with staff vertical) = 0.545, 0.905, 1.265

R.L. of P = 150.000 m

 $k = 100.00$ $c = 0.0$

[6+9]

7. (a) Why are the curves provided. Explain different types of curves with neat sketches.
- (b) Two straights intersect at a chainage of 3500.5m with an angle of intersection of 156° . These two straights are to be connected by a simple circular curve of 200m radius. Calculate the data necessary by the method of offsets from the chords produced with a peg interval of 20m. Explain the procedure to set out the curve. [7+8]
8. (a) What is Geodetic Surveying? How it is different from Plane surveying.
- (b) Explain the importance of electronic surveying in the field of surveying. [7+8]

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