

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY- GURAJADA VIZIANAGARAM
II B. Tech I Semester Supplementary Examinations, November – 2024
SURVEYING AND GEOMETRICS
(CIVIL ENGINEERING)

Time: 3 hours

Max. Marks: 70

Answer any FIVE Questions
ONE Question from Each unit
All Questions Carry Equal Marks

- 1 a) Explain the principles of surveying [7]
 b) Briefly explain the various accessories in chain surveying [7]
 (OR)
- 2 a) A chain line AB crosses a river, C and D being on the near and distant banks, respectively. A point O at right angle to AB from C is fixed at 50 m and at O the bearings of D and A are taken so that the included angle DOA is 90° . AC is then measured as 30 m. find the width of the river [7]
 b) What are the different tape correction and how they are applied [7]
- 3 a) What are the characteristics of contours? Explain clearly with diagrams [7]
 b) What are the different methods of locating contours? Describe merits and demerits of each. [7]
 (OR)
- 4 a) Write short notes on leveling and explain the temporary adjustment of leveling [7]
 b) The following staff readings were observed successively with a level the instrument is moved by third sixth and eighth readings. 2.228 :1.606 :0.988 :2.090 :2.864 :1.262 :0.602 :1.982 :1.044 :2.684 m enter the reading in record book and calculate R.L. if the first reading was taken at a B.M of 432.383m. Find also the difference in level between the first and the last points. Use Height of Instrument method [7]
- 5 a) How do you measure horizontal angle between two points with the help of a theodolite by repetition method? [7]
 b) Determine the R.L of the top of a temple from the following data. Station A and B are in line with the top of the temple. [7]

Station	Reading on BM(m)	Vertical Angle	R.L of BM
A	1.085	$10^\circ 48'$	R.L of BM = 150.000m AB=50 m
B	1.265	$7^\circ 12'$	

(OR)

- 6 a) Write the temporary adjustments of a theodolite [7]
 b) Write about parts of the Transit Theodolite. Explain in detail [7]
- 7 a) Define degree of curve. Derive a relation between the radius and degree of a curve. [7]
 b) A compound curve is made up of two arcs of radii 380 m and 520 m. The deflection angle of the combined curve is 105° and that of the first arc of radius 380 m is 58° . The chainage of the first tangent point is 848.55 m. find the chainage of the point of intersection, common tangent point, and forward tangent point. [7]
 (OR)
- 8 a) Explain in detail about the global positioning system [7]
 b) Briefly explain the types of EDM instrument [7]

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| 9 | a) | Explain about the basic concept of Photogrammetry Surveying | [7] |
| | b) | Discuss about the perspective geometry of aerial photograph | [7] |
| | | (OR) | |
| 10 | a) | Explain about relief and tilt displacements | [7] |
| | b) | Discuss about the mapping using paper prints | [7] |