

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY-GURUJADA VIZINAGARAM**  
**II B. Tech I Semester Regular Examinations, NOVEMBER – 2024**  
**SURVEYING**  
**(CIVIL ENGINEERING)**

Time: 3 hours

Max. Marks: 70

*Question paper consists of Part A, Part B.*  
*Part A is compulsory, Answer all questions.*  
*In Part B, Answer any one question from each unit.*  
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**PART-A****(20 Marks)**

- 1 a) State any two uses of survey [2]
- b) Define the terms [2]
  - a. Bearing b. Meridian
- c) Define contour interval [2]
- d) What is refraction [2]
- e) Write the purpose of theodolite [2]
- f) Write the methods of traversing [2]
- g) Write briefly about drone survey [2]
- h) What are the errors in Total Station survey? [2]
- i) Explain briefly about tilt displacements [2]
- j) Write briefly about relief displacements [2]

**PART-B****(50 Marks)****Unit-1**

- 2 a) Explain the principle of chain surveying [5]
- b) A 30m tape standardized in catenary as 29.990m at 100N is used in the field with a tension of 80 N in catenary. Calculate the Sag correction if the mass of the tape is 0.33 kg per m. [5]

(OR)

- 3 a) State the classification of survey based on object of survey [5]
- b) The length of a line measured with 20 m chain was found to be 372 metres. The true length of the line was known to be 371 metres. Find the error in the chain? [5]

**Unit-2**

- 4 State Simpson's rule and Trapezoidal rule for computation of area. A series of offsets were taken at 3m intervals in the following order from a chain line to a curved boundary 2.16, 1.53, 1.80, 1.98, 1.80, 1.59, 1.80, 2.52, 2.43, 2.40, 2.58, 2.70, 2.91, and 3.06 meters. Find the area between the chain line, curved boundary and the end offsets by Simpson's rule and trapezoidal rule. [10]

(OR)

- 5 The following consecutive readings were taken with a level and 5m levelling staff on a continuously slopping ground at a common interval of 20m, 0.385, 1.030, 1.925, 2.825, 3.730, 4.685, 0.625, 2.005, 3.110, 4.485. Prepare a page of field book and calculate the reduced level of points if first reading was taken on a bench mark of RL 208.125 m. [10]

**Unit-3**

- 6 a) Describe the Transit Vernier theodolite with sketch. [5]
- b) Write the temporary adjustments of a transit theodolite [5]

(OR)

- 7 Explain the Double Meridian Distance (D.M.D) method for the computation of area of a closed traverse? [10]

**Unit-4**

- 8    a)    Write any four features of Total station [5]  
      b)    What is a “Compound Curve “? Describe in a few sentences, [5]

(OR)

- 9        What is meant by degree of a curve? What are the different methods of designating a curve? Derive a relationship between the degree of a curve and its radius. [10]

**Unit-5**

- 10    a)    Write a note on scale of a tilted photograph [5]  
      b)    Explain about flight planning [5]

(OR)

- 11    a)    What is aerial survey? How do you plan for flight for aerial photography? [5]  
      b)    Discuss about Stereoscopy [5]

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