



23CE3304

UNIT-IV

8. a. The following perpendicular offsets were taken at 10 m intervals from a chain line to an irregular boundary line: 3.10, 4.20, 5.35, 6.45, 7.15, 8.25, 7.95 and 5.20 m. Find the area by: Trapezoidal rule and Simpson's rule. **(CO4 K3) 8M**
- b. Explain the terms i) Co-ordinate method ii) Cutting and filling iii) Capacity of a reservoir **(CO4 K2) 7M**
- (or)
9. a. Explain the different segments of GPS system. **(CO5 K2) 8M**
- b. Discuss the advantages and applications of total station when compared with other EDM instruments. **(CO5 K2) 7M**

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VELAGAPUDI RAMAKRISHNA

SIDDHARTHA ENGINEERING COLLEGE

(AUTONOMOUS)

II/IV B.Tech. DEGREE EXAMINATION, DECEMBER - 2024

Third Semester

CIVIL ENGINEERING

23CE3304 SURVEYING AND GEOMATICS

Time: 3 hours

Max. Marks: 70

Part-A is compulsory

Answer One Question from each Unit of Part - B

Answer to any single question or its part shall be written at one place only

PART-A

5 x 2 = 10M

1. a. Write the scale and the representative fraction for a line 700m long is represented by 9.5cm on plan. **(CO1 K1)**
- b. Define contour. Draw the contour for a hillock. **(CO2 K1)**
- c. List the temporary adjustments should be made for theodolite surveying. **(CO3 K1)**
- d. Write the prismoidal formulae for volume calculations. **(CO4 K1)**
- e. What is the working principle of Total station? **(CO5 K1)**

**23CE3304****PART-B****4 x 15 = 60M****UNIT-I**

2. a. Explain the principles and objectives of surveying. **(CO1 K2) 8M**
b. A 20 m chain was found to be 10 cm too long after chaining distance of 1500 m. It was found 18 cm too long at the end of days' work after chaining a total distance of 2900 m. Find the true distance if the chain was correct before the commencement of work. **(CO1 K3) 7M**

(or)

3. a. Explain different methods of chaining on a sloped ground. Discuss the advantages and disadvantages of each method. **(CO1 K2) 8M**
b. Illustrate with neat sketch how you will continue the chaining when a pond is obstructed. **(CO1 K3) 7M**

UNIT-II

4. a. Following readings were observed successively with a leveling instrument. 0.585, 1.010, 1.735, 3.295, 3.775, 0.350, 1.300, 1.795, 2.575, 3.375, 3.895, 1.745, 0.635, and 1.605. Draw up a page of level book and determine the RL of various points, if RL of first point is 134.00 m. (use rise and fall method and apply the usual checks). **(CO2 K3) 8M**
b. Explain differential levelling. **(CO2 K2) 7M**

(or)

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5. a. Following readings were observed successively with a leveling instrument. 0.585, 1.010, 1.735, 3.295, 3.775, 0.350, 1.300, 1.795, 2.575, 3.375, 3.895, 1.745, 0.635, and 1.605m. Draw up a page of level book and determine the RL of various points, if RL of first point is 134.000m (use height of collimation method and apply the usual checks). **(CO2 K3) 8M**
b. Draw with neat sketches the characteristic features of contour lines of the following:
i) pond ii) hill iii) ridge iv) valley and v) vertical cliff. **(CO2 K2) 7M**

UNIT-III

6. a. Calculate the necessary data for setting out of a simple circular curve using Rankine's method of deflection angles, consider the following data Radius = 200m, Deflection angle = 800, peg interval = 20m. **(CO3 K3) 8M**
b. Explain in detail about basic terminology and components of theodolite. **(CO3 K2) 7M**

(or)

7. a. i) Explain the elements of a simple circular curve with neat sketch.
ii) Determine the length of the long chord and length of curve of a simple curve if radius is 10 m and intersection angle 1600. **(CO3 K3) 10M**
b. Discuss the various types of errors occur in theodolite surveying? **(CO3 K2) 5M**