

Reg. No:

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SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)

B.Tech II Year I Semester Regular & Supplementary Examinations March-2023
SURVEYING & GEOMATICS

(Common to CE & AGE)

Time: 3 hours

Max. Marks: 60

(Answer all Five Units 5 x 12 = 60 Marks)

UNIT-I

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|---|--|-----|----|----|
| 1 | a Briefly explain the principles of surveying. | CO1 | L2 | 6M |
| | b Define surveying and brief about the primary divisions of surveying. | CO1 | L1 | 6M |

OR

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|---|---|-----|----|----|
| 2 | a Write short notes on dip and declination. | CO1 | L1 | 6M |
| | b What is local attraction and how it is detected and eliminated. | CO1 | L1 | 6M |

UNIT-II

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|---|--|-----|----|----|
| 3 | a Write short notes on errors in leveling. | CO2 | L2 | 6M |
| | b Discuss the effects of curvature and refraction in leveling. | CO2 | L2 | 6M |

OR

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|---|---|-----|----|-----|
| 4 | The following staff readings were observed successively with level, the instrument has been moved forward after the second, fourth and eighth readings: 0.875, 1.235, 2.310, 1.385, 2.930, 3.125, 4.125, 0.120, 1.875, 2.030 and 3.765. The first reading was taken with the staff held upon a benchmark of elevation 132.135m. Enter the readings in level book-form and reduce the levels. Apply the usual checks. Find also the difference in level between the first and the last points. | CO2 | L4 | 12M |
|---|---|-----|----|-----|

UNIT-III

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|---|--|-----|----|----|
| 5 | a What is an analytical lens? Establish the basic equation for an analytic lens. | CO4 | L1 | 6M |
| | b What is tacheometry? What are different systems of tacheometric measurements? | CO4 | L1 | 6M |

OR

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|---|--|-----|----|----|
| 6 | a How do you measure the horizontal angles between various points by reiteration method? | CO3 | L1 | 6M |
| | b What are the different errors in theodolite work? How are they eliminated? | CO3 | L1 | 6M |

UNIT-IV

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|---|---|-----|----|----|
| 7 | a Write short notes on types of circular curves. | CO5 | L1 | 6M |
| | b Define degree of curve. Derive a relation between the radius and degree of a curve. | CO5 | L2 | 6M |

OR

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|---|---|-----|----|-----|
| 8 | Two tangents intersect at chainage 1250 m. The angle of intersection is 150° . Calculate all data necessary for setting out a curve of radius 250 m by the deflection angle method. The peg intervals may be taken as 20 m. Prepare a setting out table when the least count of the Vernier is $20''$. Calculate the data for field checking. | CO5 | L4 | 12M |
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UNIT-V

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|---|--|-----|----|----|
| 9 | a List out and explain the properties of EM waves. | CO6 | L2 | 6M |
| | b State and brief about transit time. | CO6 | L1 | 6M |

OR

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|----|---|-----|----|----|
| 10 | a Discuss about the various model available in total station. | CO6 | L2 | 6M |
| | b Write short notes on Global Positional System. | CO6 | L1 | 6M |

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