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

B.Tech II Year II Semester Supplementary Examinations February-2022  
SURVEYING & GEOMATICS

(Common to CE & AGE)

Time: 3 hours

Max. Marks: 60

**PART-A**

(Answer all the Questions 5 x 2 = 10 Marks)

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|-----|--|----|
| 1 a | Define closed traverse and open traverse.                      | 2M |
| b   | What is a bench mark? Describe different types of bench marks. | 2M |
| c   | Give any two advantage of tacheometric surveying.              | 2M |
| d   | Mention the various methods of setting out the simple curve.   | 2M |
| e   | Define phase of a wave.  | 2M |

**PART-B**

(Answer all Five Units 5 x 10 = 50 Marks)

**UNIT-I**

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|-----|---|----|
| 2 a | Briefly explain the principles of surveying.  | 5M |
| b   | A Chain was tested before starting and it was found to be exactly 20m after measurement of total length 2600m . The Chain length was again tested and found 20.2m after that another 4600m was measured and at end of the day length of chain was found 20.36 m. Calculate the True length of chain measured. | 5M |

**OR**

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|-----|---|----|
| 3 a | Briefly explain any three accessories in chain surveying.       | 5M |
| b   | What is local attraction and how it is detected and eliminated? | 5M |

**UNIT-II**

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|-----|--|----|
| 4 a | Write short notes on errors in leveling.                     | 5M |
| b   | Discuss the effects of curvature and refraction in leveling. | 5M |

**OR**

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|---|---|-----|
| 5 | The following consecutive readings were taken with a dumpy level and 4 m leveling staff on a continuously sloping ground at common intervals of 30 m 0.905 (on A), 1.745, 2.345, 3.125, 3.725, 0.545, 1.390, 2.055, 2.955, 3.445, 0.595, 1.015, 1.850, 2.655, 2.945(on B). The RL of A was 395.500 m. Tabulate the page of field book and calculate the levels of the points. | 10M |
|---|---|-----|

**UNIT-III**

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|---|--|-----|
| 6 | Derive an expression to find the height of an object by double plane method. | 10M |
|---|--|-----|

**OR**

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|---|--|-----|
| 7 | The vertical angles to vanes fixed at 0.5m and 3.5m above the foot of the staff held vertically at a point were - 00° 30' and + 10 °12' respectively. Find the horizontal distance and the reduced level of the point, if the level of the instrument axis is 125.380meters above datum. | 10M |
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**UNIT-IV**

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|-----|---|----|
| 8 a | Define and draw a typical compound curve. Under what circumstance compound curves are provided. | 4M |
| b   | Derive the expression for the elements of a compound curve.                                     | 6M |

**OR**

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|-----|--|----|
| 9 a | Write short notes on reverse curves.   | 4M |
| b   | Briefly explain the field procedure of setting out of curve by two theodolite methods. | 6M |

**UNIT-V**

- 10 How will you measure the horizontal angle and vertical angle by using total station? **10M**
- OR**
- 11 a Explain about AM and FM modulation. **5M**  
b What is modulation? Explain the necessity of modulation. **5M**

**\*\*\*END\*\*\***