

**SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR**

(AUTONOMOUS)

**B.Tech. I Year I Semester Regular & Supplementary Examinations December/January-2025/2026****BASIC CIVIL & MECHANICAL ENGINEERING**

(Common to CE, ME, CSM, CIC, CAD, CCC, CAI &amp; CIA)

**Time: 3 Hours****Max. Marks: 70****\*Note:** Answer **PART-A** from pages 2 to 20 and **PART-B** from 21 to 39.**PART-A (CIVIL)****(Answer all the Questions 5 x 1 = 5 Marks)**

- |     |   |     |    |    |
|-----|---|-----|----|----|
| 1 a | What are different forms of steel?      | CO1 | L1 | 1M |
| b   | List out various sources of water..     | CO1 | L1 | 1M |
| c   | Define Benchmark.                       | CO2 | L1 | 1M |
| d   | What are the uses of contour mapping?   | CO2 | L1 | 1M |
| e   | What are the reasons to build a tunnel? | CO3 | L1 | 1M |

**(Answer all Three Units 3 x 10 = 30 Marks) (CIVIL)****UNIT-I**

- |   |   |     |    |     |
|---|---|-----|----|-----|
| 2 | Write briefly about classification of aggregates. | CO1 | L1 | 10M |
|---|---|-----|----|-----|

**OR**

- |     |  |     |    |    |
|-----|--|-----|----|----|
| 3 a | Explain the classification, qualities and constituents of a brick. | CO1 | L2 | 5M |
| b   | List out various uses of bricks in construction.                   | CO1 | L1 | 5M |

**UNIT-II**

- |   |  |     |    |     |
|---|--|-----|----|-----|
| 4 | Explain briefly various methods of horizontal measurement. | CO2 | L2 | 10M |
|---|--|-----|----|-----|

**OR**

- |   |   |     |    |     |
|---|---|-----|----|-----|
| 5 | Explain briefly the various types of levelling instruments. | CO2 | L2 | 10M |
|---|---|-----|----|-----|

**UNIT-III**

- |   |  |     |    |     |
|---|--|-----|----|-----|
| 6 | Explain briefly about Flexible and Rigid Pavements with neat sketches. | CO3 | L2 | 10M |
|---|--|-----|----|-----|

**OR**

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|---|---|-----|----|-----|
| 7 | Draw a Layout of an Airport and briefly explain about components of an airport. | CO3 | L1 | 10M |
|---|---|-----|----|-----|

**PART-B(MECHANICAL)****(Answer all the Questions 5 x 1 = 5 Marks)**

- |     |  |     |    |    |
|-----|--|-----|----|----|
| 1 f | Define Strength & Brittleness of a material.     | CO1 | L1 | 1M |
| g   | What are smart materials and mention examples.   | CO1 | L1 | 1M |
| h   | What are the factors on which machining depends? | CO2 | L1 | 1M |
| i   | How do you classify the heat engines?            | CO2 | L1 | 1M |
| j   | List out the basic components of Robot.          | CO3 | L1 | 1M |

**(Answer all Three Units 3 x 10 = 30 Marks) (MECHANICAL)****UNIT-IV**

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|---|--|-----|----|-----|
| 8 | Explain about various essential mechanical properties for the materials. | CO1 | L2 | 10M |
|---|--|-----|----|-----|

**OR**

- |     |  |     |    |    |
|-----|--|-----|----|----|
| 9 a | List out various properties of the metals.           | CO1 | L1 | 5M |
| b   | Distinguish between ferrous and Nonferrous materials | CO1 | L2 | 5M |

**UNIT-V**

- |      |   |     |    |    |
|------|---|-----|----|----|
| 10 a | How do you classify the forming process and explain them. | CO2 | L2 | 5M |
| b    | Mention the merits and demerits of forming process        | CO2 | L2 | 5M |

**OR**

- |      |   |     |    |    |
|------|---|-----|----|----|
| 11 a | Illustrate the functions of Additive manufacturing.                     | CO2 | L2 | 5M |
| b    | Differentiate between traditional Manufacturing and smart manufacturing | CO2 | L2 | 5M |

**UNIT-VI**

- |    |   |     |    |     |
|----|---|-----|----|-----|
| 12 | Sketch the general layout of hydroelectric power plant and brief it. Also mention its advantages and disadvantages. | CO3 | L2 | 10M |
|----|---|-----|----|-----|

**OR**

- |      |   |     |    |    |
|------|---|-----|----|----|
| 13 a | Describe in detail about Robot Anatomy.         | CO3 | L4 | 5M |
| b    | Explain various types of joints used in Robots. | CO3 | L2 | 5M |

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