

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

B.Tech I Year II Semester Supplementary Examinations December-2025

BASIC CIVIL & MECHANICAL ENGINEERING

(Common to CSE, CSIT, EEE, ECE)

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)

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|-----|---|-----|----|----|
| 1 a | What are different forms of steel? | CO1 | L1 | 1M |
| b | What are the interdisciplinary concepts in civil engineering? | CO1 | L1 | 1M |
| c | Define Benchmark | CO2 | L1 | 1M |
| d | State the functions of Air Transport | CO3 | L1 | 1M |
| e | Enumerate different stages of Hydrological cycle. | CO3 | L1 | 1M |

(Answer all Three Units 3 x 10 = 30 Marks) (CIVIL)

UNIT-I

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|-----|---|-----|----|----|
| 2 a | Write about good qualities of cement | CO1 | L1 | 5M |
| b | List out grades of cement and their uses. | CO1 | L1 | 5M |

OR

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|-----|--|-----|----|----|
| 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

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|-----|---|-----|----|----|
| 4 a | Define surveying. Mention the objectives of surveying | CO2 | L2 | 6M |
| b | What are the uses of surveying? | CO2 | L1 | 4M |

OR

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|---|--|-----|----|-----|
| 5 | Define contour. Mention the various characteristics of contour | CO2 | L2 | 10M |
|---|--|-----|----|-----|

UNIT-III

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|---|---|-----|----|-----|
| 6 | Draw a Layout of an Airport and briefly explain about components of an airport. | CO3 | L1 | 10M |
|---|---|-----|----|-----|

OR

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|-----|--|-----|----|----|
| 7 a | What are the purposes for constructing a dam? | CO3 | L1 | 5M |
| b | Explain briefly about how dams are classified according to material use. | CO3 | L2 | 5M |

PART-B (MECHANICAL)

(Answer all the Questions 5 x 1 = 5 Marks)

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|-----|--|-----|----|----|
| 1 f | How do you classify the metals? | CO1 | L1 | 1M |
| g | Write the applications of composite materials? | CO1 | L1 | 1M |
| h | What are the factors on which machining depends? | CO2 | L1 | 1M |
| i | What is Hybrid Electric vehicle? | CO2 | L1 | 1M |
| j | What is the function of Engine cooling system? | CO3 | L1 | 1M |

(Answer all Three Units 3 x 10 = 30 Marks) ((MECHANICAL))

UNIT-IV

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|---|--|-----|----|-----|
| 8 | Discuss about various advanced technologies in Automotive, Aerospace and marine sectors. | CO1 | L2 | 10M |
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OR

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|-----|--|-----|----|----|
| 9 a | List out various important applications of smart materials. | CO1 | L1 | 5M |
| b | Discuss about the important properties of Nonferrous metals. | CO1 | L2 | 5M |

UNIT-V

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|----|---|-----|----|-----|
| 10 | Discuss the functions of various elements of CNC machine with a neat sketch. Also mention its advantages and disadvantages. | CO2 | L2 | 10M |
|----|---|-----|----|-----|

OR

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|------|---|-----|----|----|
| 11 a | Illustrate the working of Four stroke diesel engine with a neat sketch. | CO2 | L2 | 5M |
| b | Differentiate between two stroke engine and four stroke engine. | CO2 | L2 | 5M |

UNIT-VI

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|------|--|-----|----|----|
| 12 a | Describe the nuclear chain reaction process. | CO3 | L3 | 5M |
| b | Explain the working principle and layout of Nuclear power plant. | CO3 | L2 | 5M |

OR

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|----|---|-----|----|-----|
| 13 | Classify the robots based on Robot Configurations and explain its working | CO3 | L1 | 10M |
|----|---|-----|----|-----|

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