

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

B.Tech. I Year II Semester Regular & Supplementary Examinations June-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 | List out various sources of water. | CO1 | L1 | 1M |
| | b | What is meant by surveying? | CO1 | L1 | 1M |
| | c | What is meant by traversing? | CO2 | L1 | 1M |
| | d | Mention the types of levelling staff. | CO2 | L1 | 1M |
| | e | How impurities in water are classified? | CO3 | L2 | 1M |

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

UNIT-I

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|---|---|---|-----|----|----|
| 2 | a | Explain in detail about Geotechnical Engineering. | CO1 | L2 | 5M |
| | b | Describe about Transportation Engineering. | CO1 | L2 | 5M |

OR

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| 3 | | Write briefly about classification of aggregates. | CO1 | L1 | 10M |
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UNIT-II

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| 4 | | Briefly explain the various methods of horizontal measurement. | CO2 | L2 | 10M |
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| 5 | | Explain briefly the various types of levelling instruments. | CO2 | L2 | 10M |
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UNIT-III

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

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|---|---|---|-----|----|----|
| 7 | a | Write a short note on Hydrology. | CO3 | L1 | 5M |
| | b | What do you mean by Rainwater harvesting? and write its advantages. | CO3 | L1 | 5M |

PART-B(MECHANICAL)

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

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|----------|----------|---|------------|-----------|-----------|
| 1 | f | List out the factors affect the conductivity of the metals. | CO1 | L1 | 1M |
| | g | What are smart materials and mention examples? | CO1 | L1 | 1M |
| | h | Name the steps involved in making a casting process. | CO2 | L1 | 1M |
| | i | List out the functions of additive manufacturing. | CO2 | L1 | 1M |
| | j | Mention the merits of Gear drive over other drives. | CO3 | L1 | 1M |

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

UNIT-IV

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| 8 | | Illustrate the role of Mechanical Engineering in Industries and society. | CO1 | L2 | 10M |
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OR

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|----------|----------|---|------------|-----------|-----------|
| 9 | a | List out various properties of Ceramic materials. | CO1 | L1 | 5M |
| | b | Elucidate the ceramic .applications. | CO1 | L2 | 5M |

UNIT-V

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|-----------|--|--|------------|-----------|------------|
| 10 | | Elucidate various joining processes along with its merits and demerits | CO2 | L2 | 10M |
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OR

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|-----------|----------|---|------------|-----------|-----------|
| 11 | a | Describe the functions of various components used in Electric vehicles. | CO2 | L2 | 5M |
| | b | List out various merits and demerits of Hybrid vehicles. | CO2 | L1 | 5M |

UNIT-VI

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

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|-----------|----------|---|------------|-----------|-----------|
| 13 | a | Explain in brief about Asimov's laws of Robotics | CO3 | L1 | 5M |
| | b | List out various merits and demerits of Robots in detail. | CO3 | L1 | 5M |

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