

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

B.Tech. I Year I Semester Regular Examinations February-2024

BASIC CIVIL & MECHANICAL ENGINEERING

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

Time: 3 Hours

Max. Marks: 70

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 | L2 | 1M |
| | b | Define Benchmark. | CO2 | L1 | 1M |
| | c | What is meant by traversing? | CO2 | L1 | 1M |
| | d | Elucidate purpose of ballast in permanent way. | 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 | Explain in detail about Geotechnical Engineering. | CO1 | L1 | 5M |
| | b | Describe about Transportation Engineering. | CO1 | L2 | 5M |
| 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

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|---|--|--|-----|----|-----|
| 4 | | The bearing of the sides of a closed traverse ABCD are given below. Find the included angle of the given traverse. | CO2 | L3 | 10M |
|---|--|--|-----|----|-----|

Line	Fore Bearing	Back Bearing
AB	40°	220°
BC	70°	250°
CD	210°	30°
DA	280°	100°

OR

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|---|--|--|-----|----|-----|
| 5 | | Briefly explain the various methods of horizontal measurement. | CO2 | L2 | 10M |
|---|--|--|-----|----|-----|

UNIT-III

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|---|---|---|-----|----|----|
| 6 | a | Briefly discuss about different types of Harbour. | CO3 | L2 | 5M |
| | b | What are the functions of Water Transport. | CO3 | L1 | 5M |

OR

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|---|--|--|-----|----|-----|
| 7 | | Sketch a cross section of Storage Reservoir and briefly explain about different types of Reservoirs. | CO3 | L2 | 10M |
|---|--|--|-----|----|-----|

PART-B(MECHANICAL)

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

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|---|---|--|-----|----|----|
| 1 | f | Define brittleness of a material. | CO1 | L2 | 1M |
| | g | Discuss one advantage of using nanomaterials in engineering. | CO1 | L1 | 1M |
| | h | How do you classify the heat engines? | CO2 | L1 | 1M |
| | i | What is 3D printing technology? | CO2 | L1 | 1M |
| | j | What are the disadvantages of Nuclear power plant? | 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 | L1 | 10M |
|---|--|--|-----|----|-----|

OR

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|---|---|---|-----|----|----|
| 9 | a | Describe about the smart materials used in manufacturing. | CO1 | L1 | 5M |
| | b | Write the advantages and disadvantages of manufacturing technology. | 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 | L1 | 10M |
|----|--|---|-----|----|-----|

OR

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|----|---|--|-----|----|----|
| 11 | a | List out various merits and demerits of Hybrid vehicles. | CO2 | L1 | 5M |
| | b | Describe the functions of various components used in Electric and 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 | L3 | 10M |
|----|--|---|-----|----|-----|

OR

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|----|---|---|-----|----|----|
| 13 | a | Explain the materials used in flat belts. | CO3 | L2 | 6M |
| | b | Discuss advantages and disadvantages of chain drives over belt or rope drive. | CO3 | L2 | 4M |

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