

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

B.Tech. II Year II Semester Regular Examinations July/August-2025

MANUFACTURING PROCESSES

(Mechanical Engineering)

Time: 3 Hours

Max. Marks: 70

PART-A

(Answer all the Questions 10 x 2 = 20 Marks)

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|---|---|---|-----|----|----|
| 1 | a | List the pattern materials. | CO1 | L1 | 2M |
| | b | Write a short note on function of core. | CO1 | L2 | 2M |
| | c | What are the special features of friction welding? | CO2 | L1 | 2M |
| | d | How can slag inclusions in welding be avoided? | CO2 | L2 | 2M |
| | e | Classify the types of extrusion processes. | CO3 | L1 | 2M |
| | f | Write a short note on wire drawing. | CO3 | L2 | 2M |
| | g | What is punching operation? | CO4 | L1 | 2M |
| | h | How is hydro forming is similar to rubber forming | CO4 | L2 | 2M |
| | i | What is the difference between model and prototype? | CO5 | L1 | 2M |
| | j | Discuss Materials for Additive manufacturing. | CO5 | L2 | 2M |

PART-B

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

UNIT-I

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|---|---|---|-----|----|----|
| 2 | a | Explain the list of common materials used for pattern making. | CO1 | L1 | 5M |
| | b | Discuss the relative advantages and disadvantages of various types of furnaces used in foundry shops. | CO1 | L2 | 5M |

OR

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|---|---|--|-----|----|----|
| 3 | a | Name the different types of pattern allowances and Explain with neat sketch. | CO1 | L1 | 5M |
| | b | With neat sketch explain shell moulding process. | CO1 | L2 | 5M |

UNIT-II

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|---|---|---|-----|----|----|
| 4 | a | Explain the classification of welding processes briefly. | CO2 | L1 | 5M |
| | b | Write a short notes on i) Friction stir welding ii). Explosive welding. | CO2 | L2 | 5M |

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| 5 | | Elucidate the working of Gas Tungsten Arc Welding (GTAW) with its merits & demerits. | CO2 | L4 | 10M |
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UNIT-III

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| 6 | | Elucidate the Hot working process with a neat sketch with its advantages and limitations. | CO3 | L1 | 10M |
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| 7 | a | Explain in detail about plastic deformation in metals and alloys. | CO3 | L1 | 5M |
| | b | Write a short notes on i). Recovery ii). Recrystallization iii). Strain growth | CO3 | L2 | 5M |

UNIT-IV

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|---|---|--|-----|----|----|
| 8 | a | What are the characteristics of sheet metal? | CO4 | L1 | 5M |
| | b | Write a short note on Explosive forming. | CO4 | L2 | 5M |

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| 9 | | Discuss the principle of Electromagnetic forming with advantages and limitations. | CO4 | L2 | 10M |
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UNIT-V

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| 10 | | Explain the VAT Photo polymerization with neat sketch and mention its Applications. | CO5 | L1 | 10M |
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OR

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|----|---|--|-----|----|----|
| 11 | a | Explain the types of materials for Additive manufacturing. | CO5 | L1 | 5M |
| | b | Discuss the Basic Principles of Extrusion Based System | CO5 | L2 | 5M |

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