

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

B.Tech. III Year II Semester Regular & Supplementary Examinations June-2025
MACHINE LEARNING

(Common to CAI, CSE, CSIT, CSM & CIC)

Time: 3 Hours

Max. Marks: 60

(Answer all Five Units 5 x 12 = 60 Marks)

UNIT-I

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|---|---|---|-----|----|----|
| 1 | a | Describe classification techniques in supervised learning with an examples. | CO1 | L2 | 6M |
| | b | Explain Model Selection in Machine learning. | CO1 | L2 | 6M |

OR

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|---|--|---|-----|----|-----|
| 2 | | Illustrate the various types of machine learning techniques with neat diagrams. | CO1 | L2 | 12M |
|---|--|---|-----|----|-----|

UNIT-II

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|---|---|--|-----|----|----|
| 3 | a | Express the Evaluation of Estimator bias and variance. | CO3 | L2 | 6M |
| | b | Discuss Back Propagation Algorithm with an example. | CO3 | L2 | 6M |

OR

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|---|---|--|-----|----|----|
| 4 | a | Outline Gradient Descent algorithm and its variants. | CO3 | L2 | 6M |
| | b | Compare Parametric and Non-Parametric Methods. | CO3 | L2 | 6M |

UNIT-III

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|---|---|--|-----|----|----|
| 5 | a | Apply K-Means Clustering algorithm in Unsupervised Learning. | CO2 | L3 | 6M |
| | b | Summarize various types of Cluster methods in unsupervised learning. | CO6 | L2 | 6M |

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|---|---|--|-----|----|----|
| 6 | a | Make use of different types of Partitioned algorithms in clustering. | CO2 | L3 | 6M |
| | b | Infer the problems associated with clustering large data. | CO6 | L2 | 6M |

UNIT-IV

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|---|---|--|-----|----|----|
| 7 | a | Explain about Subset Selection Techniques. | CO4 | L2 | 6M |
| | b | Analyze the applications of MDS. | CO6 | L4 | 6M |

OR

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|---|---|---|-----|----|----|
| 8 | a | Interpret Linear Discriminant Analysis. | CO4 | L2 | 6M |
| | b | Examine the K-Nearest Neighbor Algorithm with simple example. | CO6 | L4 | 6M |

UNIT-V

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|---|---|--|-----|----|----|
| 9 | a | Interpret Single State Case: K-Armed Bandit problem. | CO4 | L2 | 6M |
| | b | Compare and contrast unsupervised learning and Reinforcement learning. | CO5 | L4 | 6M |

OR

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|----|---|--|-----|----|----|
| 10 | a | Discuss Exploration and Exploitation strategies in temporal difference learning. | CO4 | L2 | 6M |
| | b | Analyze the advantages, disadvantages of temporal difference learning. | CO5 | L4 | 6M |

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