

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech III Year II Semester Regular Examinations August-2023

MACHINE LEARNING
(Common to CSE & CSIT)

Time: 3 Hours

Max. Marks: 60

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

UNIT-I

- 1 a Differentiate Machine Learning and Artificial Intelligence. CO5 L6 6M
b Describe classification techniques in supervised learning with an examples. CO1 L2 6M

OR

- 2 Analyze the classification and regression techniques in supervised learning. CO1 L2 12M

UNIT-II

- 3 a Differentiate various Parametric and Non-Parametric Methods. CO1 L4 6M
b Analyze Bayesian Decision theory in supervised learning. CO1 L4 6M

OR

- 4 a Express the Evaluation of Estimator bias and variance. CO3 L6 6M
b Illustrate Gradient Descent algorithm and its variants. CO3 L3 6M

UNIT-III

- 5 a Analyze the Expectation-Maximization algorithm with simple Example. CO3 L4 6M
b Explain about Gaussian Mixture Models. CO3 L2 6M

OR

- 6 a Illustrate the mixtures of latent variable models with suitable example. CO3 L3 6M
b How mixture density is calculated in unsupervised learning? CO2 L1 6M

UNIT-IV

- 7 a Differentiate Feature selection and Feature Extraction. CO3 L2 6M
b Explain about Subset Selection Techniques. CO4 L4 6M

OR

- 8 a Discuss the Principle Component Analysis. CO5 L2 6M
b Describe the Factor Analysis Technique. CO5 L2 6M

UNIT-V

- 9 a Explain in detail about Single State Case: K-Armed Bandit problem. CO4 L2 6M
b What are the Elements involved in Reinforcement Learning using Markov Decision Process (MDP)? CO4 L1 6M

OR

- 10 a List the applications of Reinforcement Learning and explain it. CO6 L4 6M
b Differentiate the Reinforcement learning and Supervised learning. CO5 L4 6M

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