

(FOR THE CANDIDATES ADMITTED

24UAI411

DURING THE ACADEMIC YEAR 2024

ONLY)

REG.NO.

N.G.M.COLLEGE (AUTONOMOUS) : POLLACHI

END-OF-SEMESTER EXAMINATIONS : MAY 2026

BSc.CS WITH AI & ML
SEMESTER IV

MAXIMUM MARKS: 75
TIME : 3 HOURS

PART - III

24UAI411– MACHINE LEARNING TECHNIQUES

SECTION – A

(10 X 1 = 10 MARKS)

ANSWER THE FOLLOWING QUESTIONS. (K1)

1. Machine Learning is a subfield of _____.
 - a) Data Communication
 - b) Artificial Intelligence
 - c) Computer Graphics
 - d) Operating Systems
2. In supervised learning, the model is trained using:_____.
 - a) Only unlabeled data
 - b) Only test data
 - c) Labeled training data
 - d) Random data
3. In K-Nearest Neighbour (KNN), classification is based on:_____.
 - a) Distance between data points
 - b) Random selection
 - c) Gradient descent
 - d) Probability distribution
4. DBSCAN is an example of _____.
 - a) Partition-based clustering
 - b) Hierarchical clustering
 - c) Density-based clustering
 - d) Model-based clustering
5. In Association Rule Learning, support refers to_____.
 - a) Probability of item appearing in a dataset
 - b) Frequency of occurrence of an itemset in the dataset
 - c) Strength of a rule
 - d) Accuracy of prediction

ANSWER THE FOLLOWING IN ONE (OR) TWO SENTENCES

(K2)

6. List any two applications of Machine Learning.
7. What is unsupervised Learning?
8. What is meant by classification in machine learning?
9. Which technique is used to reduce the number of variables while preserving important information?
10. Which algorithm is commonly used for association rule mining?

SECTION – B**(5 X 5 = 25 MARKS)****ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS. (K3)**

11. a) Clarify the design of a learning system with suitable examples.
(OR)
b) Illustrate the applications of Machine Learning in different fields.
12. a) List the steps involved in supervised learning. Explain it.
(OR)
b) Briefly explain Simple Linear Regression and Multiple Linear Regression with examples
13. a) Enlighten the working principle of Logistic Regression
(OR)
b) Inscribe short notes on Random Forest Classification and Support Vector Machine (SVM).
14. a) Explicate unsupervised learning and its types.
(OR)
b) Write short notes on Density-Based Clustering and DBSCAN algorithm
15. a) Describe the types of Association Learning algorithms.
(OR)
b) Compare Apriori and Eclat algorithms used in Association Rule Learning.

SECTION – C**(5 X 8 = 40 MARKS)****ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS. K4 (Or) K5)**

16. a) Confer the Machine Learning lifecycle and tools used for Machine Learning
(OR)
b) Illustrate the types of Machine Learning with suitable examples.
17. a) Elucidate Regression Analysis in Machine Learning and discuss different types of regression techniques.
(OR)
b) Discuss model evaluation, model selection, bagging, and ensemble methods used in supervised learning.
18. a) Illustrate the K-Nearest Neighbour algorithm and explain its implementation in Python
(OR)
b) Enlighten Decision Tree Classification and Random Forest Classification with Python implementation
19. a) Inscribe a note on the K-Means Clustering algorithm and its implementation.
(OR)
b) Discuss Dimensionality Reduction techniques and Collaborative Filtering with suitable examples.
20. a) Portray the Apriori algorithm and explain its implementation in Python.
(OR)
b) Explain the ARL algorithm, its concepts related to ARL.
