

Code No: R204103T

R20

SET - 1

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY GURAJADA VIZIANAGARAM
IV B. Tech I Semester Advanced Supplementary Examinations March 2025
INTRODUCTION TO ARTIFICIAL INTELLIGENCE & MACHINE LEARNING

(Open Elective)

Time: 3 hours

Max. Marks: 70

Answer any **FIVE** Questions **ONE** Question from **Each unit**
All Questions Carry Equal Marks

UNIT-I

1. a) Explain the nature of environments with examples. [7M]
b) Illustrate the concept of structure of agents with relevant diagrams? [7M]
(OR)

2. a) Explain the concept of Perceptron with an example. [7M]
b) Illustrate any one Genetic algorithm in detail? [7M]

UNIT-II

3. a) Explain the concept of Propositional Logic with the help of Wumpus World example. [7M]
b) Illustrate the Syntax and Semantics of First-Order Logic? [7M]
(OR)

4. a) Explain the concept of Unification and Lifting with an example. [7M]
b) Compare Propositional Logic vs. First Order Logic? [7M]

UNIT-III

5. a) Explain the purpose of Bayes theorem in AI. [7M]
b) Illustrate the Gibbs Algorithm in detail? [7M]
(OR)

6. a) Illustrate the applications of Machine Learning in real world? [7M]
b) Compare Supervised and Unsupervised Learning? [7M]

UNIT-IV

7. a) Explain the concept of Support Vector Machine with an example. [7M]
b) Illustrate the need for Decision Tree induction in Supervised Learning? [7M]
(OR)

8. a) Explain the concept of K-means Clustering with an example. [7M]
b) Illustrate any one Dimensionality Reduction technique in detail? [7M]

UNIT-V

9. a) Explain how Machine Learning algorithms are evaluated with an example. [7M]
b) Illustrate the need for Ensemble Methods? [7M]
(OR)

10. a) Explain the concept of Deep Boltzmann Machines. [7M]
b) Illustrate the applications of Deep Neural Networks? [7M]
