

(FOR THE CANDIDATES ADMITTED

23UDA5E1

DURING THE ACADEMIC YEAR 2023 ONLY)

REG.NO. :

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

END-OF-SEMESTER EXAMINATIONS : NOVEMBER-2025

B.Sc.CS with DA(SF)

MAXIMUM MARKS: 75

SEMESTER: V

TIME : 3 HOURS

PART - III

23UDA5E1 - ARTIFICIAL INTELLIGENCE

SECTION – A

(10 X 1 = 10 MARKS)

ANSWER THE FOLLOWING QUESTIONS.

1. Which of the following best defines Artificial Intelligence?
 - a) Study of natural phenomena
 - b) Making computers think like humans
 - c) Creating software
 - d) Managing data
2. Which of the following problems can be solved using backtracking?
 - a) Shortest
 - b) Sudoku
 - c) Sorting
 - d) Searching
3. _____ is a method used to verify whether a sentence is true in all models.
 - a) Model checking
 - b) Resolution
 - c) Forward chaining
 - d) Regression
4. In backward chaining, the reasoning process begins with: _____
 - a) All known facts
 - b) The most general hypothesis
 - c) The goal (query) and works backward
 - d) All possible rules
5. In supervised learning, the training dataset must contain: _____
 - a) Only input features
 - b) Only output labels
 - c) Input-output pairs
 - d) A cost function

ANSWER THE FOLLOWING IN ONE (OR) TWO SENTENCES

6. What is meant by an Artificial Intelligence?
7. Define constraint propagation in CSPs.
8. Show the role of knowledge base in a logical agent.
9. Explain the process of converting natural language to First-Order Logic.
10. Discuss the role of labeled data in supervised learning.

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

11. a) Illustrate the evolution of Artificial Intelligence.

(OR)

b) Explain the structure of an Agent.

12. a) Describe the Minimax algorithm to a simple game tree and determine the optimal move.

(OR)

b) Assess the Min-Conflicts heuristic to a N-Queens problem.

13. a) Interpret the method of propositional logic to represent the Wumpus World environment.

(OR)

b) Illustrate the components of knowledge based Agent.

14. a) Demonstrate the concept of a unification problem.

(OR)

b) Show how resolution is performed in First-Order Logic with an example.

15. a) Describe how a decision tree is built using a sample dataset?

(OR)

b) Examine the purpose of hypothesis evaluation.

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

16. a) Evaluate the state-of-the-art AI technologies and their impact on society.

(OR)

b) Describe the types of Agents.

17. a) Inspect the advantages and disadvantages of using depth-limited Minimax in complex game scenarios.

(OR)

b) Discuss the complexity and scalability issues in solving Constraint Satisfaction Problems.

18. a) Analyze the limitations of propositional logic when used in intelligent agents.

(OR)

b) Justify the need for model checking in large-scale intelligent systems.

19. a) Formulate the limitations of First-Order Logic.

(OR)

b) Compare forward and Backward chaining.

20. a) Analyze the components and work flow of a decision tree algorithm.

(OR)

b) Write detail notes on Artificial Neural Networks?
