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**GAYATRI VIDYA PARISHAD COLLEGE OF ENGINEERING FOR WOMEN****(Autonomous)****(Affiliated to Andhra University, Visakhapatnam)****II B.Tech. - II Semester Regular Examinations, April – 2026****ARTIFICIAL INTELLIGENCE****[CSE (AI&ML)]**

1. All questions carry equal marks
2. Must answer all parts of the question at one place

Time: 3Hrs.**Max Marks: 70****UNIT-I**

1. a. Explain Best First Search with algorithm and example. [7M]
- b. Describe the concept of Means–Ends Analysis with a suitable example. How does it guide problem solving? [7M]

OR

2. a. Discuss A* algorithm with an example including evaluation function. [7M]
- b. Explain Depth First Iterative Deepening Search (DFIDS) with example and advantages. [7M]

UNIT-II

3. a. Explain the Natural Deduction System and demonstrate it with suitable inference rules. [7M]
- b. Convert the following arguments into propositional logic and prove its validity using the resolution method: [7M]
 - If the system is secure, then data is protected.
 - Data is not protected.
 - Therefore, the system is not secure.

OR

4. a. Explain the Axiomatic System in propositional logic with suitable example. [7M]
- b. Illustrate Semantic Tableau System in propositional logic with example. [7M]

UNIT-III

5. a. Outline Extended Semantic Networks for Knowledge Representation with examples. [7M]
- b. Explain Case Grammar and its importance in knowledge representation. [7M]

OR

6. a. Summarize Semantic Web in Advanced Knowledge Representation. [7M]
- b. Examine how Knowledge can be Represented using Frames. [7M]

UNIT-IV

7. a. Demonstrate Dependency-Directed Backtracking with suitable example. [7M]
- b. Explain Fuzzy Logic and its basic concepts. [7M]

OR

8. a. Describe different Logics used in Non-Monotonic Reasoning. [7M]
- b. State Bayes' Theorem and explain the terms involved in it. [7M]

UNIT-V

9. a. Explain the Minimax search procedure with a suitable game tree example. [7M]
- b. Describe the phases involved in building an Expert Systems. [7M]

OR

10. a. Describe the Components of a Planning System. [7M]
- b. Explain the Architecture of an Expert System with a neat diagram. [7M]