

**II B. TECH II SEMESTER REGULAR EXAMINATIONS, JULY - 2022**  
**ARTIFICIAL INTELLIGENCE**  
**(CSE – ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING)**

Time: 3 hours

Max. Marks: 70

**Note:** Answer **ONE** question from each unit (**5 × 14 = 70 Marks**)

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UNIT-I

1. a) Explain the approach 2 of Tic-Tac-Toe game playing. [7M]  
 b) Discuss the current trends in AI. [7M]

(OR)

2. a) Explain in detail ELIZA program. [7M]  
 b) Discuss in detail foundations of AI. [7M]

UNIT- II

3. a) Describe the Characteristics of Problem. [7M]  
 b) Explain iterative-deepening A\* search. [7M]

(OR)

4. a) Explain in detail AND-OR graphs. [6M]  
 b) Explain the status labeling procedure in Game tree. [8M]

UNIT-III

5. a) Construct a semantic tableau for a formula  $(A \wedge \sim B) \wedge (\sim B \rightarrow C)$ . [6M]  
 b) Consider the following English sentence: [8M]

"Anything anyone eats is called food. Mita likes all kinds of food. Burger is a food. Mango is a food. John eats pizza. John eats everything Mita eats." Translate these sentences into formulae in predicate logic and then to program clauses. Use resolution algorithm to answer the following goals.

- i) What food does John eat?  
 ii) Does Mita like pizza?  
 iii) Which food does John like?  
 iv) Who likes what food?

(OR)

6. a) Explain in detail inheritance in Semantic Net with an example. [6M]  
 b) Discuss the knowledge representation using frames for hospital application. [8M]

UNIT-IV

7. a) Develop Conceptual Dependency representation for the [6M]  
sentence "John gave flower vase to Mary".

b) Develop a script for the situation "Shopping from the market". [8M]

(OR)

8. a) Discuss in detail rule-based expert systems. [7M]

b) Compare and contrast Monotonic and Non-monotonic systems. [7M]

UNIT-V

9. a) Illustrate rule-based system using probability with example. [6M]

b) Discuss in detail certainty factor theory. [8M]

(OR)

10. a) Explain the use of linguistic variables in fuzzy logic. [7M]

b) Discuss in detail inference rules for fuzzy propositions. [7M]

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