

Register No.:

**388**

**April 2024**

*Time - Three hours*  
*(Maximum Marks: 100)*

- [N.B. 1. Answer all questions under Part-A. Each question carries 3 marks.  
2. Answer all the questions either (a) or (b) in Part-B. Each question carries 14 marks.]

PART - A

1. List out the components of AI.
2. Mention the properties of environment.
3. Define optimality.
4. What is hill climbing?
5. What is Monte-Carlo tree search?
6. Differentiate binary constraint from non-binary constraint.
7. Why do we need ontological engineering?
8. What is reasoning?
9. Define trust and reputation.
10. Draw the architecture for Intelligent agent.

PART – B

11. (a) What are agents in AI? Explain any two agent types with necessary diagrams.  
(Or)  
(b) Why do we need searching? Explain about iterative deepening depth-first search and bidirectional search with diagrams.
12. (a) Explain A\* Search with an example. Compare A\* search and best first search.  
(Or)  
(b) Write about:  
(i) Genetic Algorithm. (9)  
(ii) Unknown environments. (5)
13. (a) (i) Explain about the Mini-Max search. (7)  
(ii) Discuss about spatial and temporal constraints. (7)  
(Or)  
(b) Discuss about backtracking search and dynamic programming.
14. (a) Explain forward chaining and backward chaining with examples.  
(Or)  
(b) Discuss about knowledge based agents and Wumpus world.
15. (a) Discuss about natural language processing and machine translation.  
(Or)  
(b) Explain about planning graphs and analysis of planning.

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