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Roll No 02101A20057

MCADD-605

M.C.A. (Integrated), VI Semester

Examination, May 2024

Artificial Intelligence

Time : Three Hours

Maximum Marks : 70

Note: i) Attempt any five questions.

ii) All questions carry equal marks.

1. a) What is Artificial Intelligence and its different techniques? List out some task domain of AI.
b) Explain the importance of implementing Artificial Intelligence using LISP programming language. What are the advantages of using LISP over other programming languages?
2. a) Write the algorithm for A* search technique, Taking with suitable example show, it is better than greedy best first search technique?
b) Write a LISP program to search a number in a given list using binary search.
3. a) Explain State-space Diagram for Hill Climbing. Also explain the different regions in the state space landscape with help of examples.
b) Explain what is a constraint satisfaction problem in AI? What are the three sets found in constraint satisfaction problems?

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4. a) What is non-monotonic in artificial intelligence? Explain with the help of examples.
 b) What is resolution principle and unification in AI? Explain with the help of examples.
5. a) Construct a CFG for a language $L = \{w\bar{c}w^R \mid \text{where } w \in (a, b)^*\}$.
 b) Explain the key concept of game playing theory and solve the TIC-TAC-TOE problem.
6. a) Explain the parsing techniques in NLP with the help of examples.
 b) Explain the different types of recursive transitions. Also differentiate between Recursive Transition Networks and Augmented Transition Network (ATN).
7. a) Explain the probability theory in Bayesian learning? Explain with the help of example.
 b) Explain single layer perception model of the neural network. Also explain its features.
8. Write a short note on any two:
 i) Rote Learning in AI
 ii) Explanation based learning
 iii) Vidwan frame work
 iv) Refinement in AI

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