

B.Tech. Degree VIII Semester Examination May 2003

CS 802 ARTIFICIAL INTELLIGENCE (1999 Admissions)

Time: 3 Hours

Maximum Marks: 100

- I. (a) Give the algorithm for problem reduction and explain. (10)
(b) Explain A* algorithm. (10)

OR

- II. (a) Solve the cryptarithmic problem using constraint satisfaction algorithm.

Problem: SEND
 + MORE

 MONEY

Initial state : No two letters have the same value. The sum of the digits must be as shown in the problem.

Goal state : All letters have been assigned a digit in such a way that all the initial constraints are satisfied. (10)

- (b) Explain alpha-beta pruning algorithm. (10)

- III. (a) Explain the syntax of FOPL. (10)
(b) What is resolution by refutation? Illustrate with an example. (10)

OR

- IV. (a) Give the complete procedure to convert any wff into clausal form with suitable example. (15)
(b) Explain the resolution principle. (5)

- V. (a) Explain transformational grammars. (10)
(b) Briefly explain different parsing techniques. (10)

OR

- VI. (a) Explain case grammars. (10)
(b) Distinguish between Deterministic and Non deterministic parsers with corresponding network diagrams. (10)

- VII. (a) Differentiate procedural and declarative knowledge. (10)
(b) Explain the architecture of a typical expert system. (10)

OR

- VIII. (a) State and explain the theory of fuzzy sets. (10)
(b) What are the main differences between scripts and frame structures with example? (10)

- IX. (a) What are perceptrons? Illustrate a simplified perceptron system with suitable diagram. (10)
(b) What is unsupervised learning? Explain. (10)

OR

- X. (a) Explain Multi-layer perceptron. (10)
(b) Explain the Back propagation algorithm. (10)

