

**B. Tech Degree VIII (Supplementary) Semester Examination  
September 2006**

**CS 802 ARTIFICIAL INTELLIGENCE**  
(Prior to 2002 Admissions)

Time : 3 Hours

Maximum Marks : 100

- I. (a) What are the features of a good control strategy? What are blind searches? (10)  
 (b) Explain means ends analysis. (10)
- OR**
- II. (a) Explain and - or graphs and AO\* algorithm. (10)  
 (b) Explain mini-max algorithm. (10)
- III. (a) Explain well formed formulas in predicate logic? Give some natural language sentences and its representation in predicate logic. (10)  
 (b) Show how resolution proves R with the following axioms  

$$\begin{matrix} P \\ (P \wedge Q) \rightarrow R \end{matrix}$$

$$\begin{matrix} S \\ (S \vee T) \rightarrow Q \end{matrix}$$
 (10)
- OR**
- IV. (a) What do you mean by forward chaining and backward chaining? (4)  
 (b) What is the need for unification in predicate logic resolution? (6)  
 (c) Explain resolution in predicate logic. (10)
- V. (a) Explain different levels in natural language understanding. (10)  
 (b) What are case grammars? (10)
- OR**
- VI. (a) What is augmented transition network? Give an example. (10)  
 (b) What is top down and bottom up parsing? What are ambiguous grammars? (10)
- VII. (a) What is non monotonic reasoning? Explain Bayesian probabilistic reasoning. (10)  
 (b) Explain truth maintenance system. (10)
- OR**
- VIII. (a) What are fuzzy sets and fuzzy operations? How reasoning is done with fuzzy logic? (10)  
 (b) Explain the architecture of a rule based expert system. (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)

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