

**D 41781**

**Name**.....

**Reg. No**.....

**THIRD SEMESTER M.Sc. DEGREE EXAMINATION FEBRUARY 2008**

Computer Science  
CS 304—ARTIFICIAL INTELLIGENCE  
(2005 admission onwards)

Time : Three Hours

Maximum : 80 Marks

**Part A**

*Answer any **five** questions.*

- *Each questions carries 8 marks.*

1. Discuss some application of AI. List some contributors to AI.
2. Translate any problem of your choice as state space search. Mention some rules. Indicate the path from start to goal.
3. Illustrate any 2 heuristic searches in a tree. Compare these 2 searches.
4. Describe modus **ponens**, modus **tolens**, backward reasoning and resolution using simple examples.
5. What are the conveniences and demerits of first order predicate logic ?
6. Write programs in PROLOG to illustrate the use of FAIL and CUT.
7. Differentiate a program and an expert system. What do you mean by knowledge engineering ?

(5 x 8 = 40 marks)

**Part B**

*Answer any **four** questions.*

*Each questions carries 10 marks.*

8. Describe **DFS** and **BFS**. When are they preferred ? Why is heuristics important in searching ?
9. Describe hill climbing. What are the problems in this search procedure ? How do you overcome these ?
10. Convert the sentences to clause form.  
John likes all kinds of food. Apples are food. Chicken is food.  
Anything anyone eats and isn't killed by is food.  
Bill eats peanuts and is still alive. Sue eats everything Bill eats.  
Use resolution to show that John likes peanuts and to answer the question 'what food does Sue eat?'
11. Describe parsing with the aid of example grammar and a sentence.
12. (a) Describe the architecture of an expert system.  
(b) Explain the reasoning method in **MYCIN**.
13. Implement **BFS** in PROLOG. Discuss the merits of PROLOG as AI programming language.

(4 x 10 = 40 marks)