D 26544 (Pages : 2)

Name.....

Reg. No.....

SEVENTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION, DECEMBER 2006

IT 28 705 C—ARTIFICIAL INTELLIGENCE

Time : Three Hours Maximum : 100 Marks

Answer **all** *questions.*

Part A

1. What are the requirements needed for solving a problem ? Explain.
2. What is meant by heuristic repair ?
3. What are meta-theorems ? Explain.
4. With examples, explain quantifiers and their semantics used in predicate calculus.
5. How to reason-uncertain information ?
6. What are expert systems ? What are the various types of expert systems ?
7. Give an example for involving "recursion" in LISP.
8. Explain "lamba expressions".

(8 × 5 = 40 marks)

Part B

1. Compare depth first search and breadth first search algorithms in detail.

Or

2. Explain the problem of "Crypt-arithmetic" in detail.
3. Consider the following sentences :—

   J likes all kinds of food.

   Apples are food.

   Bread is food.

   Anything anyone eats and isn't killed by is food.

   B eats peanuts and is still alive.

   S eats everything B eats.

   (i) Translate these sentences into predicate logic formulas.

   (ii) Prove that J likes peanuts using backward chaining.

   (iii) Convert the formulas of part into clause form.

   (iv) Prove that J likes peanuts using resolution.

Or

4. Compare Frames and Semantic Networks.

Turn over

5. Write note on Bayes Networks and their significance in AI.

Or

6. Explain the development of expert system with an illustration.

7. With suitable examples, explain the following in LISP :—

(a) Association List ; (b) Macro ; (c) Searching an array.

Or

8. Discuss the salient features of LISP in detail.

(4 × 15 = 60 marks)