C 5118 (Pages : 2) Name.....

Reg. No.....

EIGHTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION JUNE 2010

CS 2K 803—ARTIFICIAL INTELLIGENCE

Time : Three hours Maximum : 100 Marks

Part A

1. How evaluation functions are used in a heuristic search ?
2. What is alpha-beta cut-off ? How it reduces the search process in game playing?
3. Distinguish between predicate logic and propositional logic.
4. Write the unification algorithm ?
5. Write notes on machine learning.
6. What are horn clauses ? How reasoning is performed with horn clauses ?
7. What are the features and advantages of LISP ?
8. With example explain how controls are incorporated in LISP.

(8 × 5 = 40 marks)

Part B

II. (a) Describe with necessary diagram, a suitable state space representation for 8 puzzle problem and explain how the problem can be solved by state space search. Show how heuristics can improve the efficiency of search.

Or

(b) Explain the minimax algorithm by tracing the steps of the algorithm for a search tree with one minimizing ply and one maximizing ply.

III. (a) (i) Write the unification algorithm.

(ii) Assume the following facts :

- o Rani only likes easy courses
- o Computer science courses are hard.
- o All the courses in the management department are easy
- o CS123 is a management course

Use resolution to answer the question: "What course would Rani like?".

Or

(b) (i) Compare frame and script knowledge representation mechanisms.

(ii) Construct a script for going to a movie from the viewpoint of a movie goer.

Turn over

IV. (a) Explaining a general model for the learning process, list and explain the characteristics of a learning algorithm.

Or

(b) Discuss in detail the major features of Genetic programming.

V. (a) What are the desired features of LISP as an AI language? Explain them in detail.

Or

(b) (i) Explain the I/O functions in LISP.

(ii) Write a function in LISP to search for an element from a set of elements.

(5 × 15 = 60 marks)