G 210

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2003.

Fourth Semester

Computer Science and Engineering

CS 240 — ARTIFICIAL INTELLIGENCE

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — ($10 \times 2 = 20$ marks)

1. When is a class of problems said to be intractable?

2. Describe any two search strategies.

3. What is meant by syntax and semantics?

4. Give an example of multiple inheritance.

5. Define semantic networks.

6. When do you say two objects match?

7. State the various axioms of probability.

8. What is a Truth maintenance system?

9. Define conditional planning.

10. Give the general model of learning agents.

PART B — ($5 \times 16 = 80$ marks)

11. (i) Explain in detail the History of Artificial Intelligence. (6)

(ii) Explain heuristic search with an example. (10)

12. (a) (i) Describe the different levels of knowledge used in language understanding.

(ii) Write the algorithm for depth first search and breadth first search techniques.

Or

(b) Write the minimax algorithm and how it works for the game of tic–tac–toe.

13. (a) Write the forward chaining and backward chaining algorithm and explain their use by taking simple examples.

Or

(b) Write the unification algorithm and explain its working by taking a suitable example.

14. (a) Represent the following sentences in predicate calculus and semantic networks.

John gave Mary a book.

John is a Programmer.

Mary is a Lawyer.

Mary's address is 37 Mylapore.

Or

(b) Explain the construction of frames taking a suitable example. Show the use of inheritance in frames.

15. (a) What is uncertainty? Explain the methods available for handling uncertain knowledge.

Or

(b) (i) Compare conditional planning and replanning.

(ii) Explain any two applications of Neural networks.
