

(IT 415 (A))

IV/IV B.Tech. DEGREE EXAMINATION, APRIL 2005.

First Semester

Information Technology

ARTIFICIAL INTELLIGENCE

Time : Three hours

Maximum : 70 marks

All questions carry equal marks.

Answer Question No. 1 compulsorily.

(1 × 14 = 14)

Answer ONE question from each Unit.

(4 × 14 = 56)

1. Briefly explain the following :

(a) Heuristic function.

(b) Give any two advantages of BFS.

(c) Write any two differences between BFS and DFS.

(d) What is Hill climbing?

(e) Procedural knowledge

- (f) Give two uses of cut in prolog.
- (g) Semantic net.
- (h) Script.
- (i) Back tracking.
- (j) What is propositional resolution?
- (k) Represent the fact described by the following sentence as a set of wff's in predicate logic?
"marcus tried to assassinate Caesar".
- (l) Write any two differences between forward versus backward reasoning.
- (m) List three factors that provide efficiency of RETE matching algorithm.
- (n) Name any two issues in knowledge representation.

UNIT I

2. (a) Briefly explain production system characteristics.

(b) What is a water jug problem? Write down the production rules for the water jug problem.

Or

(c) Explain AO^* algorithm with suitable example.

(d) What is "means-ends" analysis? Illustrate with an example.

UNIT II

3. (a) What are the approaches to knowledge representation? And what are the issues involved in it?

(b) Describe the method of resolution in predicate logic with an example.

Or

(c) Describe about representation of 'instance' and 'Isa' relationship.

(d) Briefly explain about computable functions and predicates.

UNIT III

4. (a) Differentiate between procedural versus declarative knowledge.

(b) Explain forward-chaining rule and backward chaining rule systems with examples.

Or

(c) Write short notes on conceptual dependency.

(d) Discuss about matching and indexing.

UNIT IV

5. (a) Define the three basic constructs facts, rules and queries in prolog. Give the form with an example.

(b) Write a prolog program to implement multiplication as repeated addition.

Or

(c) Explain how iteration and recursion is implemented in PROLOG.

(d) Write a PROLOG program to read a list of words from the input stream.