

Roll No.

Total Pages : 03

BT-7/D-19

37205

ARTIFICIAL INTELLIGENCE

IT-403N

Time : Three Hours]

[Maximum Marks : 75

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

Unit I

1. (a) What do you understand by Artificial Intelligence ? Give a brief overview of its applications.
(b) What is the difference between commutative and non-commutative production systems ? Explain.
2. (a) Discuss the use of meta rules in resolving the conflict. Use suitable examples.
(b) What is Production System ? What are its different components ? Discuss.

Unit II

3. (a) What is the difference between forward chaining and backward chaining ? Discuss.

- (b) What is a clause ? What is proof by contradiction ? Explain.

4. (a) What is Robinson's resolution principle ? Explain the set of support resolution strategy using suitable example.
(b) What is Unification ? What are the rules of unification ? Write the procedure to find the most general unifier.

Unit III

5. (a) What do you understand by cut and fail predicate ? How are these used in preventing and enforcing backtracking ? Explain.
(b) What are the common inconsistencies observed in knowledge base ? What is truth maintenance system ? Discuss.
6. (a) How are the loops implemented in PROLOG ? Explain using suitable examples.
(b) What do you understand by monotonic and non-monotonic reasoning ? Discuss the reasoning using NML-I.

Unit IV

7. (a) Write the A* algorithm and show that it is admissible.
- (b) What is Genetic Algorithm ? What is the difference between crossover and mutation ? What is the use of mutation operation ? Discuss.
8. (a) What do you understand by heuristic function and heuristic search ? What are the advantages of using heuristic search over blind search ? Discuss.
- (b) Discuss Baye's theorem and its limitations.