Roll No. ..... Total Pages : 2

BT-3/D-21 **43198**

INTRODUCTION TO ARTIFICIAL INTELLIGENCE

Paper : C-CS-AIDS-207A

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) Write the branch and bound algorithm. Discuss the types of problem for which branch and Bound is advisable.

(b) What is production system? What are its different components? Discuss.

2. (a) Write the algorithm of Hill climbing search. What are the limitations of this search algorithm?

(b) Write the breadth first search and discuss its space complexity.

UNIT–II

3. (a) Differentiate between :

(i) Alpha and beta pruning,

(ii) Modus ponen and modus tollen.

(b) Convert the statement "Smoking can kill you" into conceptual dependency structure.

4. (a) What are the desirable characteristics of a knowledge representation scheme? What is the difference between declarative and procedural knowledge? Explain.

(b) What is horizon effect? What is the solution to this problem? Discuss.

UNIT–III

5. (a) What is Most General Unifier (MGU)? Write the unification algorithm to find the MGU.

(b) What is propositional logic? What are its limitations? Explain the implication and biconditional operator using suitable examples.

6. (a) What is Robinson's resolution principle? Explain the linear input form resolution using suitable example.

(b) Differentiate between forward and backward chaining. When is it advisable to use forward chaining over backward chaining and vice-versa? Discuss.

UNIT–IV

7. (a) What is Expert System? Discuss in brief the rule-based architecture of Expert System.

(b) What is Genetic Algorithm? What are its advantages over conventional search algorithms.

8. (a) What is learning by induction? What are its different rules? Discuss.

(b) Write a brief note on Artificial Neural Network.
