Roll No…… Total Pages: 3

10516

MCA/M-18

ARTIFICIAL INTELLIGENCE

Paper: MCA-14-45 (ii)

Time: Three Hours Maximum Marks: 80

Note: Attempt five questions including No. 1 which is compulsory. All questions carry equal marks.

Compulsory Question

1.Answer the following in brief :

(a) Define the following :

Disjunctive Normal Form,Conjunctive Normal Form,Skolem Normal Form.

(b) For What type of problems use of genetic algorithm can be justified?

(c) What are the differences between conventional programs and intelligent programs?

(d) What is Unit-preference resolution strategy?

(e) What is the difference between Context free and Context sensitive grammar?

(f) What is fuzzy logic?

(g) What is Tautology?

(h) What is Regular grammar?

UNIT-I

2.(a) What are the desirable characteristics of a knowledge representation scheme? Discuss the different catagories of knowledge representation scheme using suitable examples.

(b) What is Artificial Intelligence? What are the characteristics of the problem necessitating the use of AI approach to solve them?

3.(a) What are the rules of unification?Write the algorithm to find Most General Unifier (MGU).

(b) Differenciate between Declarative frames and Procedural frames using suitable examples.

UNIT-II

4.(a) What is Heuristic function? Suggest any two heuristic functions in 8-puzzle problem?

(b) Write the algorithm for Hill climbing search.

5.(a) What do you understand by Uniformed search? Write the algorithm for Breadth First Search, and discuss its merits and demerits over Depth First Search.

(b) What is Mini-max search? Explain using suitable example.

UNIT-III

6.(a) What are the common pitfalls observed in the implementationphase of building an expert system? How can you avoid them?Explain.

(b) What is conflict resolution?Discuss the different strategies of conflict resolution in production system.

7.(a) What are the common inconsistencies observed in the Rule-based expert system? How can you verify the knowledge base consistency?Explain.

(b) Discuss the dempster/Shafer evidence theory for reasoning with uncertainly.

UNIT-IV

8. What is Learning? Discuss the following methods for inductive learning:

(a) Replacements of Constants by Variables.

(b) Generalization by Tree climbing.

9. Write notes on the following:
(a)Transition network parsers.

(b)Crossover in Genetic algorithm.