

Roll No.

Total Pages : 03

MCA/M-17

10016

ARTIFICIAL INTELLIGENCE

MCA-14-43(ii)

Time : Three Hours]

[Maximum Marks : 80

Note : Attempt *Five* questions in all, selecting *one* question from each Unit. Q. No. 1 is compulsory. All questions carry equal marks.

(Compulsory Question)

1. (a) What is Turing Test ?
- (b) What is Unit Resolution ?
- (c) What is the time and space complexity of breadth first search ?
- (d) What are the different components of expert system ?

Unit I

2. (a) What do you understand by Artificial Intelligence ?
What are the characteristic features of it ? Discuss.
- (b) Differentiate between Modus Ponens and Modus Tollens using suitable examples.
- (c) What is the different between declarative and procedural frames ?

3. (a) What is mgu ? What are the rules for unification ? Discuss.
- (b) What is clause ? Discuss the procedure to convert a statement into clausal form.

Unit II

4. (a) What is state space representation of problem ? Discuss.
- (b) Write the algorithm of depth first search and discuss its time/space complexity and merits/demerits.
5. (a) What is forward and backward search ? What are the factors deciding the direction of search ? Explain.
- (b) What is Hill climbing search ? What are its limitations ? Discuss.

Unit III

6. (a) Write a note on the different techniques of controlling the search in production systems.
- (b) What is Stanford Certainty Factor Algebra ? Discuss.
7. (a) Define Expert System and discuss the merits of rule based architecture of it.
- (b) Explain the difference between commutative and non-commutative production systems using suitable examples.

Unit IV

8. (a) What is the difference between crossover and mutation operators in Genetic Algorithm ? Discuss.
- (b) What is Chomsky Hierarchy of formal language ? Discuss.
9. (a) What is learning ? Explain learning by induction.
- (b) What is parser ? What is TNP ? Discuss.

