

Roll No. ....

Total Pages : 03

**MCAQ/D-23**

**24028**

ARTIFICIAL INTELLIGENCE

MCA-20-33

Time : Three Hours]

[Maximum Marks : 75

**Note :** Attempt *Five* questions in all. Question Number **1** is compulsory. Attempt *four* more questions, selecting *one* question from each Unit. All questions carry equal marks i.e. 15 marks each.

**(Compulsory Question)**

1. (a) Write AO\* algorithm and explain with suitable example.
- (b) What are expert system tools ? Explain them briefly.
- (c) Discuss various approaches and issues in knowledge representation.
- (d) Write briefly about fuzzy logic.
- (e) Write unification algorithm.

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### **Unit I**

2. What is “Artificial Intelligence and Artificial Intelligence Technique” ? Briefly explain about the applications of AI, how AI Technique can be represented and list out some of the task domain of AI.
3. (a) Explain about predicate logic, Inference Rules and Resolution.  
(b) Discuss various Problems in representing knowledge.

### **Unit II**

4. Give an example of a problem for which breadth first search would work better than depth first search. Also explain about its complexity.
5. Explain the algorithm for steepest hill climbing.

### **Unit III**

6. What are the characteristics of ES ? Explain Architecture of an Expert system.
7. What is Production System ? Explain it with an example. Discuss the Characteristics of a production system.

### **Unit IV**

8. What are Knowledge Acquisition ? What are the difficulties in knowledge acquisition ? Explain about Knowledge acquisition strategies.
9. Name and describe the main features of GA. Also explain about their Operators.