

Roll No.

Total Pages : 02

BT-7/M-20

37026

ARTIFICIAL INTELLIGENCE

IT-473

Time : Three Hours]

[Maximum Marks : 100

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 depth first search with iterative deepening ? Discuss its merits/demerits.
(b) What is state space representation ? Discuss using suitable example.
2. (a) What is alpha beta pruning ? Discuss its use in refinement of mini-max search.
(b) What is AI ? Give an overview of its application areas.

Unit II

3. (a) What are Fuzzy sets ? Discuss the Fuzzy set operations.

- (b) Differentiate between modus ponens and modus tollens inference rule in FOPL.
- 4. (a) What is the difference between procedural and declarative frames ? Explain.
- (b) What is a production system ? What are its different components ? Discuss.

Unit III

- 5. (a) Discuss the following generalization rules of learning :
 - (i) Changing constants to variables
 - (ii) Closing an interval
 - (iii) Climbing a generalization tree.
- (b) Discuss the structure of a biological neuron and building blocks of Artificial Neural Networks.
- 6. (a) What is genetic algorithm ? What are its advantages over hill climbing search ? Discuss.
- (b) Write a note on learning by analogy.

Unit IV

- 7. (a) What are the main advantages in keeping the knowledge base separate from the control module in knowledge based system ? Discuss.
- (b) What is Natural Language Processing ? Discuss the use of keyword analysis in NLP.
- 8. What is Expert System ? What are its different components ? Discuss its important applications.