

**Compulsory Question**

1. (a) Differentiate between universal and existential quantifiers using suitable examples.
- (b) What is the difference between alpha and beta pruning?
- (c) What is the use of mutation operator in Genetic Algorithm?
- (d) What is Modus Ponens inference rule? Discuss.

UNIT-I

2. (a) Define AI. What are its important applications? Discuss.
- (b) What is Robinson's resolution principle? Discuss the set of support resolution strategy.
3. (a) What is unification? Write the algorithm to find the most general unifier.
- (b) What is Skolemization? Explain using suitable example.

UNIT-II

4. What is heuristic function? What are the consequences of using underestimating and overestimating heuristic functions? Discuss.
5. (a) What is informed search? Discuss the factors motivating the use of informed search.
- (b) What do you understand by admissible search? Is A\* algorithm an admissible search? Discuss.

UNIT-III

6. (a) What are the different conflict resolution strategies used in production system? Discuss.
- (b) Write a brief note on managing uncertainty in expert systems and fuzzy logic.

7. (a) What are the advantages of keeping the knowledge base separate from inference engine? Discuss
- (b) Explain the difference between commutative and non-commutative production systems using suitable examples.

#### UNIT-IV

8. (a) What are the different selection mechanism used in Genetic Algorithm? Discuss their merits/demerits.
- (b) What are the problems with NLP? Discuss..
9. (a) Write a brief note on different types of learning.
- (b) What do you understand by ATNP? Discuss.