PART - A (Marks : 25)

1. Define Agent and state its functions. 2
2. Why is A* admissible? 3
3. Define α-cutoff & β-cutoff. 3
4. What are horn clauses? 2
5. What are the advantages of DFS? 2
6. State Bayes theorem. 2
7. What is qualification problem and ramification problem? 3
8. Define neural networks. 2
9. Briefly explain entropy and information gain. 3
10. Write a short note on Frames. 3

PART - B (Marks : 50)

11. Write and explain the best first search strategy and explain how this combines the advantages of both DFS & BFS approaches. 10

12. (a) Explain resolution refutation algorithm in propositional logic. 5
   (b) Obtain the resolution proof for the proposition "Angle B is equal to Angle C" from the following axioms: 5
      (i) If a triangle is equilateral then it is isosceles.
      (ii) If a triangle is isosceles then two sides AB & AC are equal.
      (iii) If AB & AC are equal then angle B and angle C are equal.
      (iv) ABC is an equilateral triangle.
13. Write the back propagation algorithm and explain in detail with a neat diagram.

14. Explain Viterbi algorithm in detail with a good example.

15. (a) Explain briefly about planning system.
    (b) Write a short note on reasoning uncertain information.

16. (a) Give formal state space description of AI problem and solve the water jug problem in this content.
    (b) Write a short note on rule based expert systems.

17. Write any two of the following:
    (i) Syntactic analysis in NLP with example.
    (ii) Differentiate repair approach and constructive method in CSP with example.
    (iii) Version space learning algorithm.