1. a) Define term: AI. List and explain various AI task domains in brief.
b) What is Production System? Explain with example.
c) Explain Generate and Test Heuristic Search technique.
d) How predicate logic is differing from propositional logic?
e) How Fuzzy logic is related with Probability? What is difference between Membership value and Probability value?
f) Define terms: Activation Function and Output function with respect to ANN.
g) What is Knowledge? How it is differ from intelligence? Explain types of Knowledge.

(7x4)

2. a) Explain Turing Test and Chinese Room Test for Intelligence of AI system.
b) What is purpose of Control strategy? Differentiate Forward Chaining and Backward Chaining, control Strategies.
c) Explain steps of A* algorithm.

(6+8+4)

3. a) Explain Dempster-Shafer theory.
b) What is Horn Clauses? Explain with example.
c) Explain Resolution Principle, What is significance of Unification in Resolution. Take suitable example to explain Resolution and Unification.

(6+4+8)


(9+9)

5. a) Explain Fuzzy Rule based system with example of application.
b) What is learning? Explain Hebb's rule and Delta Rule of Learning with example.
c) Explain Self Organizing Network. How it is differ from Multi layer Perceptron?

(6+6+6)
6.  
a) Explain feed forward back propagation ANN.
b) Discuss activation function of ANN in detail.
c) Explain various layers in ANN. Also describe significance of Hidden layer. How to select number of neurons in each layer of ANN? 

7.  
a) Write PROLOG program structure. Write PROLOG program to implement Family tree.
b) Explain following concept in PROLOG with example: Backtracking, Recursion 
c) Explain Biological Neuron.