1. Answer the following.
   a. What is AI? What are the limitations of definition of AI?
   b. What are steps required to build a system to solve particular AI problem?
   d. What is cognitive behavior?
   e. How Neural Network is characterized?
   f. Differentiate fuzzy logic and Boolean logic.
   g. What are fuzzy numbers and fuzzy arithmetic?

2. a. Explain various application domains of AI.
   b. When many Hill-Climbing Search fail to find solution? What are the ways of dealing with failure of the Hill-Climbing Search?

OR

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2  a  How can we define problem as state space search? Explain with example.  
    
b  List various heuristic techniques. Explain any one with example.  

3  Answer any two of the following:  
   a  Explain the architecture of Expert System.  
   b  Explain the knowledge acquisition process in detail.  
   c  What are various techniques for non-formal logic representation? Explain any one in detail.  

4  a  Compare Artificial Neural Network with Biological Neural Network.  
    
b  Explain Backpropagation Network with example.  

    OR  

4  a  Discuss various design issue related to the development of speech recognition system.  
    
b  Explain perceptron learning with example.  

5  Answer any two of the following:  
   a  Show that the logical operations defined for fuzzy logic are valid for Boolean logic also.  
   b  Explain the inference process in fuzzy logic.  
   c  What is fuzzy expert system? Describe various applications of fuzzy logic in brieig.  

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