

**Total No. of Questions : 8]**

**SEAT No. :**

**P2351**

**[Total No. of Pages : 2**

**[5254]-684**

**B.E. (I.T.)**

**SOFT COMPUTING**

**(2012 Pattern) (Semester - I) (Elective - I)**

**Time : 2½ Hours]**

**[Max. Marks : 70**

**Instructions to the candidates:**

- 1) *Figure to the right indicate full marks.*
- 2) *Assume Suitable data if necessary.*

- Q1)** a) List and characterize the constituents of soft computing. [6]  
b) Explain the types of pattern recognition tasks. [6]  
c) What is Boltzman machine? With neat sketch explain its architecture. [8]

**OR**

- Q2)** a) Give an example of intelligent system and elaborate it. [6]  
b) Explain the limitations of perceptron as a classifier. [6]  
c) What is SOM? Explain training algorithm for SOM. [8]

- Q3)** a) Explain the merits and demerits of fuzzy logic. [8]  
b) Explain the alpha-cut method for discrete fuzzy sets to perform arithmetic operations.  
i) Subtraction.  
ii) Multiplication. [8]

**OR**

- Q4)** a) "Behavior of fuzzy logic is deterministic"? Justify. [8]  
b) What are fuzzy relations? Explain following operation on fuzzy relations.  
i) Intersection. [8]  
ii) Containment.

**P.T.O.**

- Q5)** a) Is it advisable to apply genetic algorithm for all kinds of optimization problems? Justify. [10]  
b) What is evolutionary programming? [6]

OR

- Q6)** a) What are types of crossover and mutation techniques. [10]  
b) What are limitations of genetic algorithms. [6]

- Q7)** a) Describe an application how soft computing can be used in mobile ad-hoc networks. [9]  
b) Mention the application area of fuzzy logic. [9]

OR

- Q8)** a) Describe an application how soft computing can be used in software engineering. [9]  
b) Mention application area of genetic algorithms. [9]

○ ○ ○