

CS - 801**B.E. VIII Semester**

Examination June, 2013

Soft Computing*Time : Three Hours***Maximum Marks : 100****Minimum Pass Marks : 35**

Note: Attempt one question from each unit. Each unit have internal choice. Assume data/value, if required.

Unit - I

1. a) Discuss the various techniques of soft computing. 10
- b) Algorithm A* does not terminate until a goal node is selected for expansion. However, a path to the goal node might be reached long before that node is selected for expansion. Why does not it terminate as soon as a goal node has been found? Illustrate your answer with an example.

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Or

2. a) Explain the problems in hill-climbing techniques along with ways to solve this problem. 10
 - b) Show that the following formula are valid by giving tableau proof of each of 10
- $$\sim (A \vee B) \leftrightarrow (\sim A \wedge \sim B)$$

Unit - II

3. a) State the training and application algorithm of the Adeline net. 10
- b) Explain in detail the algorithm for Hebb Rule used in pattern association. 10

Or

4. a) Why Training Algorithms are required? Explain widrow and HOFF's learning rule. 10

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- b) Prove that if linear activation. Function is used with MLP then its performance will be the same as single layer perceptron. 10

Unit - III

5. a) Briefly describe the Architecture of an ARTZ Network. 10
 - b) Full CPN is more efficient than the forward only CPN; Justify. 10
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- Or
6. a) Give the limitations and applications of Hopfield Network and Boltzmann machine. 10
 - b) Consider a recurrent Auto Associative net used to store the vector [1 1 -1 1]. Determine whether it recognizes a stored vector with three missing components (00-10), (1000), (0100), (0001). 10

Unit - IV

7. a) Suppose there are five people in a story writing competition. Assume their relative goodness of performance is given by a fuzzy set F as $\{(P_1, 0.3), (P_2, 0.7), (P_3, 0.9), (P_4, 0.4), (P_5, 0.7)\}$ proposition. There are about two persons who had good performance. 10
- b) The transitivity property of conventional (crisp) sets states that if $A \subset B$ and $B \subset C$ then $A \subset C$. Is this property satisfied by fuzzy sets. Explain. 10

Or

8. a) Define crisp sets with its fundamental concepts. 10
- b) Explain the features of membership functions. 10

Unit - V

9. a) Write short note on mutation operator. 10
- b) Describe the working principle of genetic algorithm. 10

Or

10. a) Explain advanced in GA. 10
- b) Discuss the categorization of bit-wise operator. 10
