

Roll No .....

**IT-802****B.E. VIII Semester**

Examination, June 2016

**Soft Computing****Time : Three Hours****Maximum Marks : 70**

- Note:** i) Answer five questions. In each question part A, B, C is compulsory and D part has internal choice.  
 ii) All parts of each question are to be attempted at one place.  
 iii) All questions carry equal marks, out of which part A and B (Max.50 words) carry 2 marks, part C (Max.100 words) carry 3 marks, part D (Max.400 words) carry 7 marks.  
 iv) Except numericals, Derivation, Design and Drawing etc.

**Unit - I**

1. a) What is the role of activation function in artificial neural network?  
 b) What is artificial neural network?  
 c) Discuss analogy between biological and artificial neural network.  
 d) Write the names of five learning rules of neural network. Explain any one learning rules in details.

OR

Write the difference between supervised, unsupervised and reinforcement learning.

**Unit-II**

2. a) What is ADALINE and MADALINE Network?  
 b) What is RBFN?  
 c) What are the limitations of back propagation algorithm?  
 d) Discuss back propagation algorithms for a multilayer network.

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OR

What is linear separability? Explain any one method to overcome the linear separability.

**Unit - III**

3. a) What is SOM?  
 b) Differentiate between ART and ART1.  
 c) Discuss Kohonen's SOM Network.  
 d) Explain counter propagation network. How counter propagation works in normal and training mode?

OR

What is ART? How it is trained? Explain one of its application.

**Unit-IV**

4. a) What is Fuzzy Set?  
 b) What is Fuzzy Reasoning?  
 c) Briefly explain two applications of fuzzy systems?  
 d) Write in a brief Fuzzy Inference Systems.

OR

Draw and explain the block diagram of fuzzy logic controller.

**Unit-V**

5. a) What is Genetic Algorithm?  
 b) Write the application of Genetic Algorithm.  
 c) Explain the working principle of Genetic Algorithm.  
 d) What is cross over? Explain different types of cross over used in GA.

OR

What do you mean by reproduction in GA? Write various selection methods used in GA.

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