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Roll No ....

MCA - 504(C)

MCA. V Semester

Examination, December 2015

Soft Computing

(Elective - II)

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 linear separability problem?
   b) Differentiate between supervised and unsupervised learning.
   c) Implement AND gate using Mcculloch-Pitts model?
   d) Explain the architecture of back propagation neural network?

OR

Discuss the important features of Kohonen self organizing maps.

UNIT – II

2. a) What is bidirectional associative memory network?
   b) Give the applications of Hopfield Network.
   c) What is the purpose of LVQ net? How are the initial weights determined for LVQ net?
   d) Explain the architecture of CPN counter propagation network.

[2]

OR

Compare and contrast BAM and Hopfield network.

UNIT – III

3. a) State the importance of fuzzy sets.
   b) Define membership function.
   c) What is fuzzy inference system?
   d) Explain the fuzzy tolerance and equivalence relation.

OR

Explain the operations and properties over a fuzzy relation.

UNIT – IV

4. a) What is fitness function?
   b) State Charles Darwin's theory of evolution.
   c) Compare and contrast traditional algorithm and genetic algorithm.
   d) Explain the various types of crossover and mutation techniques.

OR

Compare the Roulette wheel selection with other selection methods of GA.

UNIT – V

5. a) What is rough sets?
   b) Give few applications of hybrid fuzzy GA system.
   c) Explain the concept of fuzzy rough?
   d) Compare the fuzzy system, Neural Networks and Genetic algorithm.

OR

Explain the Hybrid approach of rough set and genetic algorithm.