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Unit - V

5. a) What is the role of fitness function in GA?

   b) Explain the "Darwinian theory of survival".

   c) Draw and explain generation cycle of GA?

   d) What is cross over? Explain various types of cross over operators used in GA.

OR

Write a note on the following:

i) Advances in GA

ii) Convergence of GA

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Roll No .....

CS - 801

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 questions 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) Define the following:

   i) Artificial Intelligence

   ii) Soft Computing

   b) What are the problems associated with hill climbing, explain each of them?

   c) Write and explain AO* algorithm.

   d) Differentiate the following:

   i) Forward Reasoning Vs Backward Reasoning

   ii) Monotonic Reasoning Vs Non Monotonic Reasoning

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OR

Consider the following sentences

i) Anything anyone eats is called food.

ii) Mita likes all kinds of food.

iii) Burger is a food.

iv) Mango is a food.

v) John eats pizza.

vi) John eats everything Mita eats.

Translate these sentences into predicate logic and then to program clause. Use resolution to answer the question "What food does John eats".

Unit - II

2. a) Write and explain Delta rule.

b) Draw a neat diagram of MADALINE and explain its working.

c) What is ANN? Explain characteristics and applications of ANN.

d) What is linear separability? Explain why single layer neural network is unable to solve the problem of linear separability. Also state how it is solved.

OR

Give the mathematical derivation of error back propagation algorithm when activation function is sigmodial. Also explain the importance of momentum in EBPA.

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Unit - III

3. a) What do you understand by Associative Memory?

b) Differentiate hopfield with Boltzmann machine.

c) What is recurrent network? Explain stability constraints.

d) Explain counter propagation network in terms of tl following:

i) Architecture

ii) Functioning

iii) Characteristics

OR

Explain ART with respect to:

i) Architecture

ii) Training

iii) Working

Unit - IV

4. a) Explain why law of contradiction and law of exclusive middle are violated in fuzzy set theory.

b) What are the features of membership functions?

c) What is the need of fuzzyfication? Explain the methods used for defuzzyfication.

d) What is fuzzy rule base system? Explain its working.

OR

What is fuzzy logic? Explain in brief any one application of fuzzy logic.

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