Roll No .....

MCSE-205

M.E./M.Tech., II Semester

Examination, June 2013

Soft Computing

Time : Three Hours

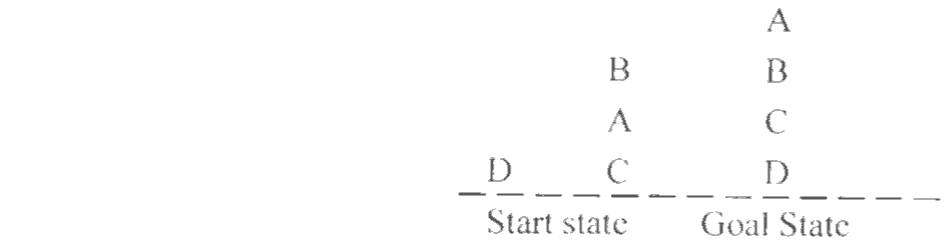
Maximum Marks : 70

Note: Total number of questions 10. Attempt one question (including all parts) from each unit. Assume missing data, if any, suitably.

Unit - I

1. a) Explain production system. What are its characteristics? Mention different types of production system with brief explanation. 7

   b) Solve the following blocks world problem using best first search methods. Define the global heuristic function used: 7



OR

2. a) Write AO* algorithm. Explain the terms SOLVED and FUTILITY in this algorithm. 6

   b) Explain depth-first search technique along with its algorithm. What are the advantages and drawback of depth-first search? 8

Unit - II

3. a) With suitable diagram, derive the weight update equations in back propagation algorithm for a multilayer feed forward neural network and explain the effect of learning rate, and momentum terms or weight update equations. 8

   b) List and explain the various activation functions. Also explain their suitability with respect to applications. 6

OR

4. a) Explain the Back propagation network with architecture, algorithm and an example. 7

   b) Write history of artificial neural system development. 4

   c) Explain the three layers of perceptron? 3

Unit - III

5. a) Discuss algorithm for storage of confirmation in Hopfield network. Explain recall algorithm. 7

   b) What is leaky learning? Explain some application of competitive learning network. 7

OR

6. a) Explain how Bidirectional memory can be used as hetero associative memory. 5

   b) Explain the architecture of counter propagation network and their training algorithm. 5

   c) What is hamming net? Explain. 4

Unit - IV

7. a) What do you understand by crisp relation. Mention the different operations performed on crisp relation. 6

   b) Explain fuzzy reasoning with is methods in details. 8

OR

8. a) What is fuzzy inference system(FIS)? List the methods of FIS. 7

   b) Describe multiobjective and multiattribute decision making. 7

Unit - V

9. a) Explain the Generational cycle rank with an example. 8
   - Architecture
   - Algorithm
   - Example

   b) Explain convergence criteria and applications of genetic algorithm. 6

OR

10. a) Discuss the following:
   i) Permutation encoding
   ii) Value encoding
   iii) Tree encoding.

   b) What is cross over? Explain different types of cross over

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