00130

M.Sc. (MATHEMATICS WITH APPLICATIONS IN COMPUTER SCIENCE) M.Sc. (MACS)

Term-End Practical Examination

June, 2016

MMTE-007 (P) : SOFT COMPUTING AND ITS APPLICATIONS

Time : 1½ hours   *Maximum Marks : 40*

Note : *This question paper has two questions worth 30 marks. Remaining 10 marks are for the viva-voce.*

1. Write a program in 'C' language to write the **12** children solution of a genetic algorithm to solve a travelling salesman problem consisting of n-cities using crossover order (#2). Also, test your program for the following two parents :

    Parent 1 :   A   B   C   D   E   F   G   H   I   J
    Parent 2 :   E   F   G   H   A   B   I   J   C   D

2. Write a program in 'C' language to implement **18** the back propagation algorithm. Show step by step output to hidden and output neurons. Also modify the weights w and v for the data given below :

Input I_1	Input I_2	Output O
0.3	-0.2	0.2
0.4	0.6	0.3
0.6	-0.2	0.1

The initial vectors are

$$[w]^0 = \begin{bmatrix} 0.2 \\ -0.5 \end{bmatrix} \text{ and } [v]^0 = \begin{bmatrix} 0.1 & 0.4 \\ -0.2 & 0.2 \end{bmatrix}$$

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