

M.Sc. (MATHEMATICS WITH APPLICATIONS IN COMPUTER SCIENCE)**M.Sc. (MACS)****Term-End Practical Examination**

00006

December, 2014**MMTE-007(P) : SOFT COMPUTING AND ITS APPLICATIONS***Time : $1\frac{1}{2}$ hours**Maximum Marks : 40*

Note : *There are **two** questions in this paper totalling 30 marks. Answer **both** of them. Remaining 10 marks are for the viva-voce.*

1. Write a program in 'C' language to write the children solution of a Travelling Salesman problem consisting of n cities using crossover order (#1). Also test your program for the following : 15

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

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

2. Write a program in 'C' language to implement the backpropagation algorithm. Show step-by-step output at input, hidden and output neurons as well as errors. Also modify the weights for the training set having input $I_1 = 0.3$, $I_2 = -0.5$ and output 0.1 with initial weights 15

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

$$[W]^0 = \begin{bmatrix} 0.2 \\ -0.5 \end{bmatrix}.$$