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

Term-End Practical Examination

December, 2017

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

Time : $1\frac{1}{2}$ Hours　　　　　　　　　　　　　　　　　*Maximum Marks : 40*

Note : (i)　There are two questions in this paper, totalling 30 marks. Answer **both** of them.

(ii)　Remaining 10 marks are for the viva-voce.

1. Write a program in 'C' language to write the children solution of the Travelling Salesman Problem consisting of n cities using crossover order (#1). Test your program to find the children solution of the following two parents :　　　　*15*

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

2. Write a program in 'C' language to implement the back propagation algorithm. Show step-by-step output to input, hidden and output neurons as well as errors. How are the weights **W** and **V** modified ?

   Test your program for the following values :

   The weights w_{11}, w_{12}, w_{21} and w_{22} on connection from the input neurons to hidden layer neurons are $w_{11} = 0.15$, $w_{12} = 0.3$, $w_{21} = 0.15$, $w_{22} = 0.3$. The weights on the connections from hidden layer neurons to output layer neurons are $v_1 = -0.3$ and $v_2 = 0.3$.　　　　*15*