

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

00316

Term-End Practical Examination
June, 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 implement FCM algorithm for a data set having n points and m features. Also, test your programs to find the new cluster center for the following data :

	Feature 1	Feature 2
x_1	2	12
x_2	4	9
x_3	7	13
x_4	11	5
x_5	12	7
x_6	14	4

The initial two cluster centers are given by (5, 5) and (10, 10).

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2. Write a program in 'C' language to find the average correlation matrix for M input patterns with N features to design and train the Hopfield network. Also, test your program on the following input patterns :

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M = 3, N = 4

IP ₁	1	1	1	-1
IP ₂	1	1	-1	1
IP ₃	-1	1	1	-1