

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

## M.Sc. (MACS)

## Term-End Practical Examination

00244

December, 2014

## MMT-008(P) : PROBABILITY AND STATISTICS

Time :  $1\frac{1}{2}$  hours

Maximum Marks : 40

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

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1. Let  $y \sim N_p(\underline{\mu}, \Sigma)$  and  $\bar{y} = \frac{\sum_{i=1}^p y_i}{p}$ . Write a program in 'C' language to obtain the distribution of  $\bar{y}$ . 15
2. Write a program in 'C' language to fit the model  $Y_i = b_0 + b_1 X_{1i} + b_2 X_{2i} + e_i$  where  $i = 1, 2, 3, 4, 5$ , using the least square estimates. Also, test your program to fit the model for the following data : 15

i	1	2	3	4	5
$X_{1i}$	8	3	15	17	9
$X_{2i}$	1	2	2	5	6
$Y_i$	12	6	3	22	10