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MMT–008(P)(Set-I)

M. SC. IN MATHEMATICS WITH APPLICATIONS IN COMPUTER SCIENCE (MSCMACS)

Term-End Practical Examination

June, 2026

MMT-008(P)(Set-I) : PROBABILITY AND STATISTICS PRACTICAL

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

Note **:** (i) *There are two questions in this paper worth 30 marks.*

(*ii*) *Answer both the questions.*

(*iii*) *The remaining 10 marks are for vive-voce.*

(iv) Symbols have their usual meanings.

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1. Write a program in 'C' language to fit the model $y_i = b_0 + b_1 x_1 i + b_2 x_2 i; 1 \le i \le n$. You may assume that $n \le 20$. Use the program to fit a linear model for the data given below : 15

y	x_1	x_2
12	1	5
20	2	8
28	3	7
36	4	9
38	5	11
20	6	12
15	7	8
12	8	10

2. Write a program in 'C' language to check whether a quadratic form in three variables is positive definite or not. It should do the following : 15

   (i) Read the coefficient of the quadratic form.

   (ii) Print the matrix corresponding to the quadratic form.

   (iii) Check whether the quadratic form is positive definite or not, and print the result.

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