

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

**Term-End Practical Examination**

December, 2017

00148

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

*Time : 1  $\frac{1}{2}$  Hours*

*Maximum Marks : 40*

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

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

(iii) *All the symbols used have their usual meaning.*

1. Write a program in 'C' language to fit the model  $y_i = b_0 + b_1x_{1i} + b_2x_{2i}$ ,  $1 \leq i \leq n$ . You may assume that  $n \leq 20$ . Use the program to fit a linear model for the data given below : 15

|          |    |    |    |    |    |    |    |    |
|----------|----|----|----|----|----|----|----|----|
| $y_i$    | 15 | 25 | 30 | 35 | 40 | 45 | 50 | 55 |
| $x_{1i}$ | 5  | 8  | 15 | 20 | 21 | 18 | 10 | 6  |
| $x_{2i}$ | 1  | 2  | 3  | 4  | 5  | 3  | 2  | 1  |

2. Write a program in 'C' language to find the multiple correlation coefficient and the mean square error, if  $\sum_{xx}$ ,  $\sigma_{yy}$  and  $\sigma_{xy}$  are given. 15