Roll No. ..... **Total Pages : 3**

3986/M

M-25/2051

COMPUTER ORIENTED NUMERICAL AND STATISTICAL METHODS

Paper–225

Semester–IV

Time allowed : 3 Hours] [Maximum Marks : 75

Note : The candidates are required to attempt two questions each from sections A and B carrying 15 marks each. Section C consisting of 5 short answer type questions carrying 3 marks each.

SECTION-A

1. Explain the arithmetic operation with normalised floating point representation of numbers and explain its consequences. 15

2. State the Newton Raphson method and explain the drawbacks of this method. 15

3. Solve by Gauss elimination method:

$x+2y-3z-t=0; -3y+2z+6t=-8; -3x-y+3z+t=0;$
$2x+3y+2z-t=-8.$ 15

4. Explain Linear, polynomial and exponential curve fitting in detail. 5+5+5 = 15

SECTION-B

5. Discuss the various types of Average. Give the characteristics of good average and give reasons for the purpose of average. 7+8 = 15

6. Define Median. Explain the method to calculate Median. Give its merits and demerit. 5+5+5 = 15

7. What do you mean by Coefficient of Variation. Explain the method to calculate it. Give its merits and demerits. 5+5+5 = 15

8. The following data relate to sales and expenses of 10 firms. Calculate coefficient of correlation:

Sales (in Rs. 000)	50	50	55	60	65	65	65	60	60	50
Expenses (in Rs. 000)	11	13	14	16	16	15	15	14	13	13

SECTION-C

9. (i) Explain Floating point representation of numbers.

(ii) State Newton Raphson method.

(iii) Define Lagrange's Interpolation.

(iv) Define Variation and give merits and demerits.

(v) Define linear regression and state the method least squares for estimating the regression coefficient.

$5 \times 3 = 15$