Seat No. : _____

MC-226

May-2025

Int. M.Sc. (CA & IT), Sem.-II

Computer Oriented Statistical Methods (NEP)

Time : 1:00 Hour] **[Max. Marks : 25**

Instruction : Use of non-programmable scientific calculator is allowed.

1. Attempt any **two** : **10**

   (1) The arithmetic mean and the standard deviation of a set of 9 items are 43 and 5 respectively. If an item of value 63 is added to the set, find the mean and standard deviation of 10 items.

   (2) State and prove normal equations for a straight-line fitting.

   (3) Derive the formula $\sum n^2 = \frac{n(n+1)(2n+1)}{6}$

2. Attempt any **two** : **10**

   (1) Fit curve of the form $y = a + bx$ to the following data :

x	1	2	3	4	5	6	7	8
y	1	1.2	1.8	2.5	3.6	4.7	6.6	9.1

   (2) Fit a curve of the form $y = ae^{bx}$ to the following data :

x	1	3	5	7	9
y	115	105	95	85	80

   (3) The mean of five observations is 4.4 and the variance is 8.24. If three of the five observations are 1, 2 and 6, find the values of the other two.

3. Attempt any **five** : **5**

   (1) The sum of 51 + 52 + 53 + 54+.. +100 = _____.

   (2) Write one solution of $y = 7x^2 - 1$.

   (3) Without using graph paper draw a graph of $y = x^2 + 1$.

   (4) Find a linear curve passing through (1, –1) and (2, –2).

   (5) Write limitations of mean.

   (6) Write limitations of range.

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