



10904

I Semester M.B.A. Examination, May/June 2023  
(CBCS Scheme)  
**MANAGEMENT**

**1.4 : Statistics for Management**

Time : 3 Hours

Max. Marks : 70

SECTION – A

Answer **any five** questions, **each** carries **5** marks. (5×5=25)

1. Explain the role of statistics in managerial decision making.
2. Calculate the mean and standard deviation of the marks of 10 students in statistics.

Student	1	2	3	4	5	6	7	8	9	10
Marks in Statistics	74	41	81	50	58	52	76	48	43	37

3. Fit a trend line by the method of least squares to the following data.

Year	1994	1995	1996	1997	1998	1999
Value	300	700	600	800	900	1000

4. A problem in statistics is given to three students A, B and C, whose chances of solving it are  $\frac{1}{3}$ ,  $\frac{1}{4}$  and  $\frac{1}{5}$  respectively. Find the probability that the problem is solved if they all try independently.
5. Explain the following terms :
  - a) Null hypothesis and alternative hypothesis
  - b) Type I and Type II errors
  - c) Significance level
  - d) One tailed and two tailed tests
  - e) Point estimation and interval estimation.
6. What are non-parametric tests ? Briefly explain some non-parametric tests with examples.
7. Explain the concept of probability and its use in business decision making.



## SECTION – B

Answer **any three** questions, **each** carries **10** marks.

(10×3=30)

8. Find the median and mode for the following continuous frequency distribution. Also, verify their values graphically.

<b>Class</b>	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99
<b>Frequency</b>	7	15	18	25	30	20	16	7	2

9. From the data given below, find :
- The two regression coefficients.
  - The two regression equations.
  - The coefficient of correlation between the marks in Economics and Statistics.
  - The most likely marks in Statistics when marks in Economics is 30.

<b>Marks in Economics</b>	25	28	35	32	31	36	29	38	34	32
<b>Marks in Statistics</b>	43	46	49	41	36	32	31	30	33	39

10. The number of scooter accidents per month in a certain town were as follows :  
12, 8, 20, 2, 14, 10, 15, 6, 9, 4

Are these frequencies in agreement with the belief that accident conditions were the same during this 10 month period ?

11. A doctor has decided to prescribe two new drugs to 200 heart patients as follows : 50 get drug A, 50 get drug B and 100 get both. 200 patients were chosen so that each had 80% chance of having heart attack if given neither drug. Drug A reduces the probability of heart attack by 35 percent, drug B reduces the probability by 20 percent and the two drugs when taken together, work independently. If a randomly selected patient in the program has a heart attack, what is the probability that the patient was given both drugs ?



SECTION – C

Compulsory question :

(15×1=15)

12. Case Study.

- a) The data given below show the percentage increase in price of a few selected food items and the weights attached to each of them. Calculate the index number for the food group.

Food items	Rice	Wheat	Dal	Ghee	Oil	Spices	Milk	Fish	Vegetables	Refreshments
Weight	33	11	8	5	5	3	7	9	9	10
Percentage increase in price	180	202	115	212	175	517	260	426	332	279

- b) Using the above food index and the information given below, calculate the cost of living index number.

Group	Food	Clothing	Fuel and Light	Rent and Rates	Miscellaneous
Index	–	310	220	150	300
Weight	60	5	8	9	18