

**MANAGEMENT PROGRAMME
(MP)**

Term-End Examination

June, 2023

**MS-08 : QUANTITATIVE ANALYSIS FOR
MANAGERIAL APPLICATIONS**

Time : 3 Hours

Maximum Marks : 100

Weightage : 70%

Note : (i) *Section A has six questions, each carrying 15 marks. Attempt any **four** questions from this Section.*

(ii) *Section B is compulsory and carries 40 marks. Attempt both questions.*

(iii) *Use of calculator is permitted.*

Section—A

1. What do you understand by the terms event, sample and experiment ? Also, explain the different approaches to probability theory.
2. The daily cost, C of operating a hospital, is a linear function of the number of in-patients I , and out-patients, P , plus a fixed cost a , i.e.

$$C = a + bP + dI$$

Given the following data for three days, find the value of a , b and d by setting up a linear system of equations and using the matrix inverse.

Days	Cost (in ₹)	No. of in- patients, I	No. of out- patients, P
1	6,950	40	10
2	6,725	35	9
3	7,100	40	12

3. From the following data compute arithmetic mean :

Marks	No. of Students
0–10	5
10–20	10
20–30	25
30–40	30
40–50	20
50–60	10

4. “Time series analysis is one of the most powerful methods in use, especially for short-term forecasting purposes.” Do you agree ? Give reasons in support of your answer.
5. Two different types of drugs A and B are tried on certain patients for increasing weight, 5

persons were given drug A and 7 persons were given drug B. The increase in weight in lbs is given below :

Drug A	Drug B
8	10
12	8
13	12
9	15
3	6
	8
	11

Do the two drugs differ significantly with regard to their effect in increasing weight.

[Given that the tabulated value of $t_{0.05/2}$ at 10 degree of freedom = 2.23.]

6. Write short notes on any *three* of the following :
- Square Matrix
 - Median
 - Bernoulli Process
 - Cluster Sampling
 - Forecast Control

Section—B

7. Calculate Spearman's coefficient of ranks correlation from the following data :

X	Y
53	47
98	25
95	32
81	37
75	30
61	40
59	39
55	45

8. What do you understand by “secondary data” ? Explain the various sources of secondary data. What precautions are required while using secondary data ?