



**I Semester M.B.A. (Day and Evening) Degree Examination, July 2022
(CBCS) (2021-22 and Onwards) (Freshers)**

MANAGEMENT

Paper – 1.4 : Statistics for Managers

Time : 3 Hours

Max. Marks : 70

SECTION – A

Answer **any five** questions. **Each** question carries **five** marks. **(5×5=25)**

1. Explain the concept of symmetric and asymmetric distributions with suitable illustrations.
2. The following data gives the results of the scores of two students in an exam held during the year. Determine who is more consistent using the coefficient of variation.

Player A	15	25	30	35	45
Player B	15	45	60	85	95

3. Fit the straight line trend for the following data and forecast the production for the next two years.

Year	2017	2018	2019	2020	2021
Demand in 00'000 Rs.	27	33	46	54	70

4. Averages are useful in business metrics. Justify this statement.



5. The cattle of a certain town were inoculated against a disease. Since cattle who got inoculated also got sick along with those who did not, use the Chi Square Test to determine whether the said inoculation was effective in controlling the disease. You may assume a 5% level of significance.

	Developed illness	Did not develop illness
Got inoculated	550	530
Did not get inoculated	475	350

6. How are tables and graphs useful in business reporting ?
7. The average diameter of cakes baked in a bakery are 35 cm. The variance is 9 cm. If on any day, 50 cakes are baked, find how many cakes have a diameter :
- Greater than 42 cm.
 - Lesser than 30 cm.
 - Between 33 and 39 cm.
- Illustrate your answers.

SECTION – B

Answer **any three** questions. **Each** question carries **ten** marks.

(3×10=30)

8. For the data given below, find the coefficient of correlation and interpret it. Also fit the two regression equations.

X	9	18	27	36	45	54	63	72	81
Y	90	99	108	117	126	135	144	153	162

9. In a bag, there are 80 coins each numbered from 1 to 80. If a coin is selected at random, what is the chance that it will be :
- A multiple of 3 or 5 ?
 - A multiple of 4 or 6 ?
 - A multiple of 7 or 11 ?



10. Based upon the data given below, prove that the Fischer's index satisfies the time reversal test and the factor reversal test.

Commodities	P_0	P_1	Q_0	Q_1
A	9	12	6	8
B	11	14	7	9
C	13	15	9	11
D	14	17	11	12
E	16	18	13	15

11. Mr. A has two options for investment but, he can take up only one at a time.
- Option A : He can start a restaurant for Rs. 9,00,000. The probability of success is 75% with a cash inflow of Rs. 12,00,000. If he fails he can still salvage Rs. 6,00,000. When he succeeds, he can start a fast food shop for Rs. 4,00,000, where in he can get success, with a 80% probability and cash inflow of Rs. 3,00,000. If he fails he incurs a loss of Rs. 50,000.
- Option B : He can start a car showroom for Rs. 8,00,000. The probability of success will be 90% with a cash inflow of Rs. 9,00,000. If he fails he can still salvage Rs. 5,00,000.
- Construct a decision tree and the payoff chart. Show the best decision that Mr. A should take.

SECTION – C

This is a **compulsory** question. It carries **fifteen** marks.

(1×15=15)

12. A certain product is sold in three cities by three salesmen. Based on the data given below,

Cities/Salesmen	Salesman A	Salesman B	Salesman C
City One	20	25	24
City Two	25	35	27
City Three	30	30	30

find if :

- There is a significant difference in the sales performance of the salesmen.
- There is a significant difference in the sales between the cities.

You may assume a 5% level of significance.