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Reg. No. | | | | | | | | |

I Semester M.B.A. (Day / Evening) Degree Examination, May/June- 2025

MANAGEMENT

Business Statistics

(CBCS Scheme 2019-2020)

Paper : 1.5

Time : 3 Hours **Maximum Marks : 70**

Instructions to Candidates:

Calculator and statistical tables are allowed.

SECTION - A

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

1. What is meant by assymetric distribution? Explain the types with suitable example.
2. Write short notes on
   a) Null hypothesis.
   b) Alternative hypothesis.
   c) Type I and Type II error.
3. Calculate Karl Pearson's coefficient of skewness from the following.

Marks :	0-10	10-20	20-30	30-40	40-50	50-60	60-70
No. of students :	2	7	10	12	9	6	4

4. Fit a trend line by the method of least squares for the following data.

Month :	Sept	Oct	Nov	Dec	Jan	Feb	March
No. of homes :	15	15	26	27	33	41	51

5. A box contains 50 coins numbered from 1 to 50 : one coin is drawn at random. Find the probability that the number on the coin drawn will be a multiple of
   a) 3 or 9. and
   b) 5 or 8.

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6. In an intelligence test administered to 500 students, the average score was 42 and standard deviation was 12. Find

   a) The number of students who got score between 30 and 40.

   b) The number of students who got a score above 60.

7. Derive chi - square statistics by stating suitable hypothesis at 5% level of significance.

Occupation	On favour	Against	Indifferent
NGO activists	80	40	10
Legal advisors	60	70	30
College students	85	65	40

SECTION - B

Answer any **Three** questions. Each question carries **10** marks. **(3×10=30)**

8. Statistics help managers to make business decisions. Explain this statement by using different statistical tools.

9. Calculate the Bowley's and Ideal index number and prove that ideal index number satisfies time reversal and factor Reversal test.

	2022		2023	
Commodity	**Price**	**Value**	**Price**	**Value**
P	10	1500	160	1760
Q	12	1080	100	1300
R	15	900	60	960
S	9	450	40	480

10. From the data given below, you are required to

    a) Calculate the correlation coefficient.

    b) Find the standard error

    c) Construct two regression lines

Annual income (in lakhs. Rs.)	8	12	10	24	14	13	38	11	16
Percent allocation for investment :	36	25	34	15	28	30	19	21	23

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11. A company 'X' has 2 options to sell its products. He can setup a showroom in the city or can sell from his factory outlet. Setting up a showroom will cost Rs. 10,00,000 with a 60% probability of success. If the the showroom succeeds, he can get a net profit of Rs. 20,00,000 per year if it fails, he can close the showroom or rent it out for an annual rent of Rs. 5,00,000. The probability of getting rent is 75%. If it sells from the factory outlet, it has to in cur Rs. 1,00,000 as renovation charges. The successful chances of selling the product is 40% with a net profit of Rs. 7,50,000 per year.

Draw a decision tree and advice the company.

SECTION - C

12. **Case study (Compulsory).** **(1×15=15)**

A study was carried out on advertising methods of a brand of product. The unit sales achieved by five stores were recorded as under

	Store A	Store B	Store C	Store D	Store E
Method - 1	78	85	82	88	79
Method - 2	93	87	85	85	85
Method - 3	81	92	77	83	81
Method - 4	79	83	71	78	78

Establish

a) Four methods of advertisements produce different effects on the sales volume and

b) There is a significance difference between the sales in the different stores.

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