D1ACM2503 **(2 Pages)** **Name...........................**

Reg. No.........................

FIRST SEMESTER M.Com DEGREE EXAMINATION, NOVEMBER 2025

(Regular/Improvement/Supplementary)

COMMERCE

FMCM1C03- QUANTITATIVE TECHNIQUES FOR BUSINESS DECISIONS

Time: 3 Hours **Maximum Weightage: 30**

Part A: Answer any *four* questions. Each carries *two* weightage.

Write short notes on:

1. The applications of Chi-square test.
2. The characteristics of a good estimator.
3. Scatter diagram.
4. Univariate and Multivariate analysis.
5. The properties of Normal Distribution.
6. Probable Error.
7. Standard Error of Estimate.

(4 × 2= 8 weightage)

Part B: Answer any *four* questions. Each carries *three* weightage.

8. A sample of 3 items is selected at random from a box containing 12 items of which 3 are defective. Find the possible number of defective combinations of the said 3 selected items along with probability of a defective combination.
9. A man buys 50 electric bulbs of company X and 50 electric bulbs of company Y. It was found that company X bulbs have an average life of 1600 hours with a standard deviation of 50 hours and company Y bulbs have an average life of 1500 hours with a standard deviation of 80 hours. Is there a significant difference in the mean life of two makes of bulbs?
10. What is SPSS? Explain briefly the steps involved in the application of SPSS.
11. What are the statistical tools used for Descriptive Analysis?
12. The following results were obtained from the two treatments X and Y on items to enhance their strength.
    X applied to 400 items and 80 items were gained in strength.
    Y apllied to 400 items 20 itmes were gained in strength.
    Is treatment Y superior to treatment X?
13. If r = 0.8, n= 91, find Probable Error and Standard Error.
14. Two randomly selected groups of 50 employees each of a very large firm are taught an assembly operation by two different methods and then tested for performance. If the first group averaged 140 points with a standard deviation of 10 points while the second group averaged 135 points with a standard deviation of 8 points test at .05 level, check whether the difference between their mean scores is significant.

(4 × 3 = 12 weightage)

(P.T.O.)

Part C: Answer any *two* questions. Each carries *five* weightage.

15. Following is the age (X) and blood pressure (Y) of 10 persons.

X:	52	56	63	45	65	72	48	38	40	59
Y:	60	63	70	75	78	68	75	74	66	80

Obtain two regression equation of Y on X and X on Y. Find the expected blood pressure of a person who is 65 years old.

16. Fit a normal distribution to the data given below.

Diameter in inches :	10	12	14	16	18	20	22	24
Frequency :	8	10	15	7	20	12	15	13

17. Eleven sales executive trainees are assigned and sales executed by them in thousands of rupees before and after the training.

(Before training):	23	20	19	21	18	20	18	17	23	16	19
(After training) :	24	19	21	18	20	22	20	20	23	20	27

Do these data indicate that the training has contributed to their performance?

18. A test was given to 5 students chosen at random from M. Com class of each of 3 universities in Delhi. Their scores were found as follows.

A	90	70	60	50	80
B	70	40	50	40	50
C	60	50	60	70	60

Perform analysis of variance and show if there is any significant difference between the score of students in the three universities.

(2 × 5 = 10 weightage)