D4BCM2305 (PAGES 2) **Reg. No.....**

Name: .....

FOURTH SEMESTER B.Com. DEGREE EXAMINATION, APRIL 2025

(Regular/Improvement/Supplementary)

FINANCE AND COMPUTER APPLICATION

GBCM4C04T: QUANTITATIVE TECHNIQUES FOR BUSINESS

Time: 2 ½ Hours **Maximum Marks: 80**

SECTION A: Answer the following questions. Each carries *two* marks.

(Ceiling 25 marks)

1. Write down the important methods of finding the existence of correlation?
2. What are the interpretation of the value of 'r' in correlation analysis?
3. If b_{yx} = 0.48 , r = 0.66, SD of y = 8, find SD of x.
4. What are the limitations of linear programing model?
5. Define probability.
6. A fair coin is tossed three times. Find the chance of getting 3 heads.
7. Define conditional probability.
8. Comment on the statement "The mean of a Binomial distribution is 3 and variance is 4".
9. What do you mean by quantitative techniques?
10. If 3% of electric bulbs manufactured by a company are defective, find the probability that in a sample of 100 bulbs, exactly five bulbs are defective.
11. Define standard normal distribution.
12. Average IQ of a group of 800 children is 98. The standard deviation is 8. Assuming normality find the expected number of children having IQ between 90 and 125.
13. What is decision making under risk?
14. Give any two limitations of quantitative techniques.
15. Explain EOL criterion.

SECTION B: Answer the following questions. Each carries *five* marks.

(Ceiling 35 marks)

16. For the data given below obtain the correlation coefficient between the average price and demand of a particular commodity in a region.

Average price ('000Rs.) :	11	19	15	13	17
Demand (Kgs) :	30	18	24	29	24

(PTO)

17. Explain why there are two regression equations. Under what conditions can there be one regression equation?
18. What are the business applications of quantitative techniques?
19. The probability that a contractor will get a plumbing contract is 2/3 and the probability that he will not get an electric contract is 5/9. If the probability of getting at least one contract is 4/5. What is the probability that he will get both the contracts?
20. Describe some of the important statistical techniques for quantitative analysis.
21. Eight unbiased coins were tossed simultaneously. Using the binomial probability function, find the probabilities of getting:

    (i) no heads at all (ii) at most two heads

    (iii) at least two heads (iv) exactly 6 heads
22. A company manufactures certain kinds of bolts. It is found that 2% of the bolts produced every year are defective. Find the probability that out of 200 bolts produced in a year none is defective.
23. Write a short note on decision tree analysis.

SECTION C: Answer any *two* questions. Each carries *ten* marks.

24. Calculate the correlation coefficient for the following heights (in inches) of fathers and their sons :

X :	65	66	67	67	68	69	70	72
Y :	67	68	65	68	72	72	69	71

25. What are the different schools of thought on the interpretation of probability? Explain.
26. Four coins are tossed at a time. Number of heads observed at each throw is recorded and the results are as follows:

No. of heads at a throw	:	0	1	2	3	4
Frequency	:	5	48	112	35	8

    Fit a binomial distribution to the given data.
27. Solve graphically the following linear programming problem.

    Minimize $Z = 3x_1 + 5x_2$

    Subject to $-3x_1 + 4x_2 \leq 12$

    $2x_1 - x_2 \geq -2$

    $2x_1 + 3x_2 \geq 12$

    $x_1 \leq 4,\ x_2 \geq 2$

    $x_1 \geq 0,\ x_2 \geq 0$

(2 x 10 = 20 Marks)