

FOURTH SEMESTER UG DEGREE EXAMINATION, APRIL 2025**(Regular/Improvement/Supplementary)****BBA****GBBA4C04T: 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. What are Programming techniques?
2. Define time series.
3. What is linear correlation?
4. What is partial regression?
5. What are mutually exclusive events? Give an example.
6. How permutation differ from combination?
7. Define index numbers.
8. What is conditional probability?
9. State any two properties of Poisson distribution.
10. What are the parameters of Binomial distribution?
11. What is random experiment?
12. What are cyclical variations?
13. Give the formula under Laspeyre's Index method.
14. In how many ways, letters of the word 'STATISTICS' can be arranged?
15. What is the chance of getting at least one head, when two coins are tossed simultaneously?

**SECTION B: Answer the following questions. Each carries *five* marks.
(Ceiling 35 marks)**

16. Distinguish between correlation and regression analysis.
17. Briefly explain the uses of index numbers.
18. What are the five properties of a normal distribution?
19. The height of school children is normally distributed with mean of 54 inches and standard deviation of 12 inches. What percentage of students has height in between 48 and 58 inches?
20. The odds against X solving a problem are 8 to 6 and odds in favour of Y solving problem are 14 to 16. What is the probability that the problem is solved?

(PTO)

21. Four coins are tossed simultaneously. What is the chance of getting 4 heads? Apply binominal distribution.
22. From the following data, construct an index number for the year 2024 with 2023 as base year under Paasche's method.

Items	2023		2024	
	Price	Quantity	Price	Quantity
A	8	4	10	5
B	5	4	6	4
C	8	5	9	4
D	10	5	12	6

23. The ranks of 6 persons before and after a training course are as follows:

Persons	A	B	C	D	E	F
Ranks before training	3	5	4	2	1	6
Ranks after training	4	6	5	2	1	3

Compute Spearman's rank correlation.

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

24. Discuss the applications of quantitative techniques in business.
25. Calculate Karl Pearson's Co-efficient of Correlation between demand and price.

Demand (Tons)	20	24	32	44	50	60
Price (Rs)	9	10	11	12	13	14

26. You are given the following data:

Measures	Advertising (Rs in Lakhs)	Sales (Rs in Lakhs)
Mean	10	90
Standard deviation	3	12

- a. Calculate two regression equations.
- b. Find the likely sales when advertising expenditure is Rs 15 Lakhs.
27. Fit a normal distribution to the following data.

Marks	10-20	20-30	30-40	40-50	50-60	60-70	70-80
Number of Students	4	22	48	66	40	16	4

(2 × 10 = 20 Marks)