



ST. FRANCIS DE SALES COLLEGE

A FRANSALIAN INSTITUTE OF HIGHER EDUCATION **AUTONOMOUS**

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END SEMESTER EXAMINATION – APRIL/MAY 2026

BUSINESS ADMINISTRATION – II SEMESTER BBA

25BBA26A: QUANTITATIVE BUSINESS TECHNIQUES

Time: 3 Hours

Max. Marks: 80

Instruction: *Answer should be written completely in English*

SECTION – A

1. Answer any **SEVEN** questions. Each question carries **TWO** marks.

(7X2=14)

- What is a scatter diagram?
- Find the Probable error if $r = 0.61$ and $N = 10.42$
- What do Regression lines signify?
- Mention any two properties of regression coefficients.
- Define Time Series.
- What do you mean by analysis of time series?
- What is the graphical method in solving LPP?
- Describe the meaning of optimization in business.
- Define Probability.
- State the law of multiplication of probability.

SECTION – B

Answer any **THREE** questions. Each question carries **EIGHT** marks.

(3X8=24)

- State the uses of correlation analysis.
- A company produces two products A and B. Each unit of product A requires 2 hours of machine time and 1 hour of labor. Each unit of product B requires 1 hour of machine time and 1 hour of labor. The company has 100 machine hours and 80 labor hours available per week. Profit per unit of A is ₹40 and B is ₹30. Formulate the LPP.
- A can hit a target 4 times in 5 shots, B 3 times in 5 shots and C 3 times in 4 shots. They fire a volley. What is the probability of hitting exactly 2 shots?
- From the following information, find out two regression equations through normal equations;
 $N=20$, $\sum X=120$, $\sum X^2=800$, $\sum Y=500$, $\sum Y^2=13360$, $\sum XY=2800$.
- Calculate 4-year Moving Average for the following data:

Year:	2018	2019	2020	2021	2022	2023
Sales:	50	60	70	90	100	110



SECTION – C

Answer any **THREE** questions. Each question carries **FOURTEEN** marks. **(3X14=42)**

7. Assess the effectiveness of Linear Programming in solving real-world business problems.
Discuss its advantages and limitations.

8. Obtain the rank correlation co-efficient between the variables X and Y for the following pairs of observed values:

X	50	55	65	50	55	60	50	65	70	75
Y	110	110	115	125	140	115	130	120	115	160

9. Obtain the two regression equations from the following data and estimate the value of X when Y=50 and the value of Y when X=45.

X	40	50	38	60	65	50	35
Y	38	60	55	70	60	48	30

10. Fit a straight trend line to the data given below using semi average method and estimate the value for the year 2001.

Year	1994	1995	1996	1997	1998	1999	2000
Sales in lakhs	24	20	28	22	26	30	32

11. A. Explain the Multiplication Rule of Probability using conditional probability.

B. A bag contains 4 white, 5 black, and 3 green balls. Three balls are drawn one after another without replacement.

Find the probability that:

- All three balls are white
- Exactly two balls are black

