



ST. FRANCIS DE SALES COLLEGE

A FRANSALIAN INSTITUTE OF HIGHER EDUCATION **AUTONOMOUS**

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Electronics City P.O. Bengaluru - 560 100, Karnataka, INDIA. ☎ (+91) 8088140679 ☢ pro@stscollege.in ☛ www.stscollege.in

END SEMESTER EXAMINATION - DECEMBER 2024

BUSINESS ADMINISTRATION - I SEMESTER BBA

24BBA16A: QUANTITATIVE ANALYSIS FOR BUSINESS

Time: 3 Hour

Max. Marks: 80

Instruction: *Answers should be written in English only.*

SECTION-A

1. Answer any **SEVEN** out of **TEN** questions. Each question carries 2 Marks. **(7X2=14)**

- a. A white board price is reduced by 20% in a sale. The old price was Rs.150. Find the new price.
- b. Write the power set of $B = \{8,9,10\}$.
- c. Find the value of $8P_3$ and $8C_3$.
- d. If $A = \begin{bmatrix} 5 & 3 \\ 4 & 6 \end{bmatrix}$ and $B = \begin{bmatrix} 6 & 8 \\ 9 & 1 \end{bmatrix}$, then find $2A + 3B$.
- e. X invests Rs.1000 for 3 years in a savings account that pays 10% interest per annum. Calculate the future value.
- f. Find the transpose of the matrix $A = \begin{bmatrix} 1 & 3 & 6 \\ 2 & 4 & 5 \\ 7 & 9 & 8 \end{bmatrix}$.
- g. How many arrangements are possible from the word 'NUMBER' when repetition is allowed?
- h. The sum of 6 times a number and 5 times a number is 66. Which is that number?
- i. In a basket, 15% of 300 oranges are bad. How many oranges of the basket are bad?
- j. If $5:20::3:x$, then find the value of x .

SECTION-B

Answer any **THREE** out of **FIVE** questions. Each question carries 8 Marks. **(3X8=24)**

2. a. If we divide Rs.1200 among three persons A, B and C in the ratio 3:4:5, how much will each person get?
b. Two numbers are in the ratio 5:8. If the sum of the numbers is 195. Find the numbers.
3. a. Solve by elimination method $x + y = 15$ and $3x - y = 21$.
b. Solve by substitution method $2x - y = 5$ and $x - 4y + 1 = 0$.
4. a. A committee of 3 persons is to be constituted from a group of 2 men and 3 women. In how many ways can this be done? How many of these committees would consist of 1 man and 2 women?
b. In how many ways can a team of 2 boys and 3 girls be selected from 5 boys and 4 girls?



5. Find the adjoint of
$$\begin{bmatrix} 12 & 15 & 10 \\ 2 & 3 & 6 \\ 1 & 5 & 4 \end{bmatrix}$$
.

6. Find out the present value of Rs.10,000 receivables after 3 years at the rate of 10 % interest. Calculate semi-annually.

SECTION-C

Answer any THREE out of Five questions. Each question carries 14 Marks. (3X14=42)

7. a. Define a proportion and explain the different properties of proportion with examples.
 b. A man can sharpen 12 pencils in 15 minutes. How long will it take for him to sharpen 96 pencils?

8. a. Solve by formula method $5(x - 2)2 - 6 = -13(x - 2)$.
 b. Solve by factorization method $3x^2 - 16x + 5 = 0$.

9. a. Find r if $10P_r + 1 : 11P_r = 30 : 11$.
 b. If $5P_r = 2.6P_{r-1}$. Find r .

10. a. Find the value of x in the determinant if
$$\begin{vmatrix} 1 & 2 & 3 \\ 4 & x & 6 \\ 7 & 8 & 9 \end{vmatrix} = 0$$
.
 b. Solve by Cramer's rule $3x - 7 = 6, 2x - 15 = -3y$.

11. a. At what percentage rate per annum, Rs.640 amounts to Rs.744.40 in 2 years, compounding yearly?
 b. Find the difference between simple interest and compound interest on Rs.5000 for 5 years, charging half yearly at 6% p.a.

