

Exam. Code : 105403
Subject Code : 1283

Bachelor in Business Administration (BBA)
3rd Semester (Batch 2022-25)
STATISTICS FOR BUSINESS
Paper : BBA-303

Time Allowed—3 Hours] [Maximum Marks—50

Note :—Attempt **FIVE** questions in all, selecting at least **ONE** question from each section. The fifth question may be attempted from any section. All questions carry equal marks.

SECTION—A

1. (i) If $A = \begin{bmatrix} 2 & 0 & 1 \\ 2 & 1 & 3 \\ 1 & -1 & 0 \end{bmatrix}$, find $A^2 - 5A + 6I$. 5

(ii) If $\begin{vmatrix} x & 2 \\ 18 & x \end{vmatrix} = \begin{vmatrix} 6 & 2 \\ 18 & 6 \end{vmatrix}$, find x. 5

2. (i) Show that :

$$\begin{vmatrix} 1 & a & a^2 \\ 1 & b & b^2 \\ 1 & c & c^2 \end{vmatrix} = (a - b)(b - c)(c - a). \quad 5$$

(ii) Solve the equations :

$$x - y + z = 4, \quad 2x + y - 3z = 0, \quad x + y + z = 2$$

by Cramer's rule. 5

SECTION—B

3. (i) Mean of 100 observations is found to be 40. If at the time of computation, two items were wrongly taken as 30 and 27 instead of 3 and 72, find correct mean. 5

(ii) Find Median of the following data :

Mid Points	5	15	25	35	45
Frequency	3	9	8	5	3

4. (i) What do you mean by Standard Deviation ? Write its merits and demerits. 5

(ii) From the following observations, calculate quartile deviation and coefficient of quartile deviation :
59, 62, 65, 64, 63, 61, 60, 56, 58, 66. 5

SECTION—C

5. Calculate coefficient of correlation between X and Y for the following data :

X	1	3	4	5	7	8	10
Y	2	6	8	10	14	16	20

6. Discuss the importance of time series analysis. Also discuss its components. 10

SECTION—D

7. (i) Three coins are tossed simultaneously. Write its sample space. Also find the probability of getting at least one head. 5
- (ii) The probability of solving specific problem by A and B is $\frac{1}{2}$ and $\frac{1}{3}$ respectively. If both A and B try to solve the problem independently, find the probability that the problem is solved. 5
8. (i) What is Binomial Probability distribution? Write its important properties. 5
- (ii) Discuss Normal probability distribution and its main characteristics. 5