Exam. Code : 105403
Subject Code : 1376

Bachelor in Business Administration (BBA) 3rd Semester

STATISTICS FOR BUSINESS

Paper : BBA–303

Time Allowed—3 Hours] [Maximum Marks—50

Note :—There are **EIGHT** questions. Candidates are required to attempt any **FIVE** questions. All questions carry equal marks.

SECTION—A

1. For the matrix $A = \begin{bmatrix} 1 & 1 & 1 \\ 1 & 2 & -3 \\ 2 & -1 & 3 \end{bmatrix}$ show that $A^3 - 6A + 11 I = 0$. Hence find A^{-1}. 10

2. Solve following system of equation using Cramer's rule :

$$x_1 - x_2 + x_3 = 6$$
$$2x_1 - x_2 + 2x_3 = 3$$
$$3x_1 + x_2 - x_3 = 3$$

find x, y, z. 10

SECTION—B

3. What do you mean by sampling ? Discuss in detail various non-random sampling methods. 10

4. From the following data of 122 persons find out the modal weight :

Weight (in lbs)	No. of Persons	Weight (in lbs)	No. of persons
100–110	4	140–150	33
110–120	6	150–160	17
120–130	20	160–170	8
130–140	32	170–180	2

10

SECTION—C

5. (a) Discuss in detail the properties of regression coefficients. 5

(b) Calculate the rank correlation of following data :

X	12	15	18	20	16	15
Y	10	18	19	12	15	19
X	18	22	15	21	18	15
Y	17	19	16	14	13	17

5

6. (a) What do you mean by index numbers ? Discuss its utility. 5

(b) Compute Laspeyres, Paasche, Fisher's, Bowley's and Marshall Edgeworth index numbers from following data :

	1980		1985	
Item	Price	Quantity	Price	Quantity
A	12	100	20	120
B	4	200	4	240
C	8	120	12	150
D	20	60	24	50

5

SECTION—D

7. Discuss in detail properties of Poisson and normal distribution. 10

8. A box contains 8 red, 3 white and 9 blue balls. If 3 balls are drawn at random find the probability that (a) all 3 are red, (b) 2 are red, (c) all 3 are white, (d) at least 1 is white. 10