Seat No. _____

BACHELOR OF COMPUTER APPLICATION Examination

BCA Semester - 1 JAN 24 (Reg.) JAN - 2024

CS-06: MATHEMATICAL AND STATISTICAL FOUNDATION OF COMPUTER SCIENCE

Faculty Code : 003

Subject Code : 23SI-BCAP-SE-01-01006

Time : 1 Hours] **[Total Marks : 25**

Q.1 (A) Solve by Cramer's Method. 5

$2x - y = 1, 3x + 2y = 12$

Q.1 (B) If Matrix $A = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$ is such that 5

$$\begin{bmatrix} 2 & 1 \\ 3 & 2 \end{bmatrix}\begin{bmatrix} a & b \\ c & d \end{bmatrix}\begin{bmatrix} -3 & -2 \\ 5 & 3 \end{bmatrix} = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$$

Prove that A is non-singular matrix.

OR

Q.1 (A) Explain rules of determinant. 5

Q.1 (B) Find inverse of given matrix, if possible. 5

$$\begin{bmatrix} 2 & 3 & 1 \\ 1 & 2 & 3 \\ 3 & 1 & 2 \end{bmatrix}$$

Q.2 (A) If the median of the following frequency distribution is 38. Find the missing frequencies if total frequency is 400 5

Class	10-20	20-30	30-40	40-50	50-60	60-70	70-80
Freq.	42	38	f1	54	f2	36	32

Q.2 (B) Calculate the variance of the following distribution. 5

Class	20-25	25-30	30-35	35-40	40-45	45-50
Freq.	170	110	80	45	40	35

OR

Q.2 (A) Find the mode from the following frequency distribution. 5

Class	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50
Freq.	25	29	32	39	27	18	6	2

Q.2 (B) Calculate the Quartile deviation for the following data. 5

Class	55-60	60-65	65-70	70-75	75-80
Freq.	10	18	14	16	12

Q.3 Find three numbers in GP such that their sum is 130 and their product is 27000. 5

OR

Q.3 The 8th term of AP is 5 and the 13th term is 25. Find 50th term. 5