Seat No. _____

BACHELOR OF SCIENCE (INFORMATION TECHNOLOGY) Examination

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

CS-06: MATHEMATICAL AND STATISTICAL FOUNDATION OF COMPUTER SCIENCE

Faculty Code : 003

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

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

Q.1 (A) *Solve* $\begin{vmatrix} x+1 & x+2 & 3 \\ 3 & x+2 & x+1 \\ x+1 & 2 & x+3 \end{vmatrix} = 0$ 5

Q.1 (B) If $A = \begin{bmatrix} 4 & 1 & 0 \\ 1 & -2 & 2 \end{bmatrix}$, $B = \begin{bmatrix} 2 & 0 & -1 \\ 3 & 1 & 4 \end{bmatrix}$ and $C = \begin{bmatrix} 1 \\ 2 \\ -1 \end{bmatrix}$ 5

Find matrix X such that (3B - 2A) C + 2X = O.

OR

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

Q.1 (B) If $A = \begin{bmatrix} 4 & 1 \\ 7 & 2 \end{bmatrix}$ and AB = I then find matrix B. 5

Q.2 (A) For the following data f1 + f2 = 34 and mean is 36.2. Find the value of f1 and f2. 5

X	10	20	30	40	50	60
F	f1	24	28	34	30	f2

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

X	6	7	8	9	10	11	12
F	3	6	9	13	8	5	4

OR

Q.2 (A) Calculate Mean, Median and Mode of the following distribution. 5

X	15	25	35	45	50	55	60	65
F	9	15	20	21	18	9	7	6

Q.2 (B) Calculate the quartile deviation and coefficient of quartile deviation for the following data 5

X	6	14	22	30	38	46
F	30	45	65	30	16	14

Q.3 The sum of first 6 terms of an AP is 57 and the sum of its 10 term is 155. Find 20th term. 5

OR

Q.3 Calculate the sum of the following series up to n terms. 5

1 + 11 + 111 + 1111 + ...