UNIT-V DATA ANALYSIS

1. Find the Karl Pearson's coefficient of correlation of the following data:

Age of husband in years	20	22	23	25	25	28	29
Age of wife in years	18	20	22	24	21	26	26

Age of husband in years	30	30	34
Age of wife in years	25	27	29

2. Find the Karl Pearson's coefficient of correlation of the following data:

Age (x)	30	32	35	40	48	50	52
Sick days (Y)	1	0	2	5	2	4	6

Age (x)	55	57	61
Sick days (Y)	5	7	8

3.

Aptitude scores (X)	60	62	65	70	72	48	53
Productivity index (Y)	68	60	62	80	85	40	52

Aptitude scores (X)	73	65	82
Productivity index (Y)	62	60	81

Find the two regression equations.

4. Calculate the regression equations of X on Y and Y on X from the following data.

X	10	12	13	17	18	20	24	30
Y	5	6	7	9	13	15	20	21

5. Let X=$\begin{bmatrix} -1 & 9 & 3 \\ -5 & 7 & 2 \\ -1 & -3 & -4 \end{bmatrix}$ then compute the

(i)   Sample mean vector $\bar{X}$.
(ii)   Sample Covariance matrix.

6. Let X=$\begin{bmatrix} 1 & -1 & 3 \\ 2 & 5 & -4 \\ 0 & 6 & 8 \end{bmatrix}$ then compute the

(iii)   Sample mean vector $\bar{X}$.
(iv)   Sample Covariance matrix.

7. Using Principal Component Analysis for the given data, reduce the dimension from two to one.

X	4	8	13	7
Y	11	4	5	14

8. Using Principal Component Analysis for the given data, reduce the dimension from two to one.

X	2	1	0	-1
Y	4	3	1	0.5