

- (b) Find out the simple interest on ₹ 800 for 3 years at a rate of 5% per annum.
- (c) Find the mean of the values x, y, z, ℓ, m .
- (d) Find the range of values 4, 5, 3, 2, 15, 6, 35.
- (e) Write the condition for perfect positive correlation.
- (f) Write the formula for regression line of y on x .
- (g) Write a symmetric matrix of order 3×3 .
- (h) If

$$A = \begin{bmatrix} -1 & 5 \\ 2 & 3 \end{bmatrix} \text{ and } B = \begin{bmatrix} 1 & 3 \\ -5 & 0 \end{bmatrix}$$

find $A - 5B$.

SECTION – B

2. Attempt any two parts of the following : $2 \times 6 = 12$
- (a) A sum becomes twice in 3 years with certain rate of interest. Find the time in which the same amount will become 8 times with the same rate of interest.

(b) Find the median for the following data :

Class	Frequency
0 – 4	3
4 – 8	9
8 – 12	18
12 – 16	20
16 – 20	16
20 – 24	7

- (c) Write notes on Correlation.
- (d) Define various types of matrices with their examples.

SECTION – C

Note :- Attempt all questions. Attempt any two parts from each question. $5 \times 8 = 40$

3. (a) Write notes on profit and brokerage.
- (b) What Capital is to be invested at the rate of 6% per annum in order to earn ₹ 600 per month.
- (c) Write notes on Annuities.

[P. T. O.]

4. (a) Find the standard deviation from the following data :

Size	8	9	10	11	12	13	14
Frequency	2	4	6	9	6	4	2

- (b) Write notes on Primary and Secondary Data.
- (c) Write notes on Skewness.
5. (a) Define regression and their properties.
- (b) Find the regression equation of x on y from the following data :

x	0	1	2	3	4	5	6
y	2	1	3	2	4	3	5

- (c) Find the correlation coefficient between x and y when the lines of regression are :
- $$2x - 9y + 6 = 0$$
- and $x - 2y + 1 = 0$
6. (a) Write notes on algebra of matrices.

- (b) Solve the following system of linear equations :

$$x + y + z = 3$$

$$x + 2y + 3z = 4$$

$$x + 4y + 9z = 6$$

by using matrix method.

- (c) Solve graphically the following L.P.P. :

Maximize $Z = 4x + y$

Subject to constraints :

$$x + y \leq 50$$

$$3x + y \leq 90$$

$$x \geq 0, y \geq 0$$

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