



- (1) Following is the cumulative frequency distribution of the preferred length of kitchen slabs obtained from the preference study on housewives:

Length (in meters)	1.0	1.5	2.0	2.5	3.0	3.5
More than Preference of housewives	50	48	42	40	10	5

A builder has to take a decision on what length of slab to build. What length you would recommend and why? Calculate mean length of slab.

- (2) The intelligence of 510 pre-university students of a colleges is as follows :

I.Q.	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99
No. of students	41	52	61	190	67	45	40	14

Find median

- (3) Given below is the distribution of profits (in '000 rupees) earned by 94% of the retail grocery shops in a city.

Profits	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90
No. of Shops	0	5	14	27	48	68	83	91	94

Calculate the modal value.

3 Attempt any two :

14

- (1) The cholera cases reported in different hospitals of a city in a rainy season are given below :

Age Group (Years)	Less than 1	1-5	5-10	10-15	15-25	25-35	35-45	45-65	65 and above
Frequency	15	113	122	91	229	132	65	46	15

Calculate the quartile deviation for the given distribution.

- (2) Find the mean deviation of the following series :

x	10	11	12	13	14
Frequency	3	12	18	12	3

- (3) The following data relate to the age of a group of workers. Calculate the arithmetic mean and standard deviation. Also calculate coefficient of variation.

Age	20-25	25-30	30-35	35-40	40-45	45-50	50-55
No. of workers	170	110	80	45	40	30	25

4 Attempt any two : ○

14

- (1) Calculate correlation coefficient for the following data and also calculate coefficient of determination :

x	8	7	6	1	2	3	9	4	5
y	16	14	13	9	8	10	15	12	11

- (2) Calculate correlation coefficient using following data :

$$n = 10, \quad \sum X = 650, \quad \sum y = 660, \quad \sum (x-65)^2 = 15398,$$

$$\sum (y-66)^2 = 12224, \quad \sum (x-65)(y-66) = 12704$$

2 Attempt any two :

14

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Calculate the modal value.

- (3) Find the rank correlation coefficient of the following data :

Marks in statistics	84	51	91	60	68	62	86	58	53	47
Marks in Accountancy	78	36	98	25	75	82	90	62	65	39

Calculate the Spearman's correlation coefficient.

- 5 Attempt any two :

14

- (1) Obtain equations of regression line of  $y$  on  $x$  and  $x$  on  $y$ , using the data given below :

$x$	1	2	3	4	10	-3	-1	9
$y$	10	8	6	4	0	4	5	-1

- (2) Given the following data : Calculate :  
(i) The probable value of  $y$  when  $x = 12$   
(ii) The probable value of  $x$  when  $y = 30$ .

	$x$	$y$
Mean	27.6	14.8
S.D.	40	20

$r = 0.8$

- (3) Obtain the regression line of  $y$  on  $x$  using the following data :

$\sum x = 21, \sum y = 20, \sum x^2 = 91, \sum xy = 74, n = 7$