Unit 1

10 Mark

4. Answer any one of the following:-

4-a. Calculate mode of the following distribution: (CO1) 10

Wages	50-70	70-90	90-110	110-130	130-150	150-170	170-190	190-210	210-230
No. of workers	4	44	38	28	6	8	12	2	2

4-b. Find the moment coefficient of Skewness and kurtosis of the following data: (CO1) 10

Class interval	0-10	10-20	20-30	30-40	40-50
Frequency	10	20	40	20	10

4. Answer any one of the following:-

4-a. An incomplete distribution of families according to their expenditure per week is given below. The median and mode for the distribution is ₹ 25 and ₹ 24 respectively. Calculate the missing frequencies. (CO1) 10

Expenditure	0-10	10-20	20-30	30-40	40-50
No. of families	14	?	27	?	15

4-b. Find the moment coefficient of Skewness and kurtosis for the following data: (CO1) 10

x	0-10	10-20	20-30	30-40	40-50
f	10	20	40	20	10

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4-a. The following table represent the height of a batch of 100 students. Calculate kurtosis: (CO1) 10

Height (in cm)	59	61	63	65	67	69	71	73	75
No. of students	0	2	6	20	40	20	8	2	2

4-b. Fit a relation $y = a + \frac{b}{x} + \frac{c}{x^2}$ for the following data: (CO1) 10

x	1	2	3	4	5
y	15.3	15.1	15	14.5	14

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No. of families	14	?	27	?	15

4-b. Find the moment coefficient of Skewness and kurtosis for the following data: (CO1) 10

x	0-10	10-20	20-30	30-40	40-50
f	10	20	40	20	10

6 Mark

3-a. Find the mode from the following data: (CO1) 6

x	0-6	6-12	12-18	18-24	24-30	30-36	36-42
y	6	11	25	35	18	12	6

3-b. Find the normal equations to the curve $y = ax^2 + b$. (CO1) 6

3-a. The first four moments of a distribution are 3, 10.5,40.5,168.Comment upon the nature of the distribution. (CO1) 6

3-b. Fit a second degree parabola to the following data- (CO1) 6

x	0.	1.	2.	3.	4.
y	1.	0.	3.	10.	21.

3-a. Calculate the correlation coefficient between X and Y from the following data – (CO1) 6

X	3	7	5	4	6	8	2	7
Y	7	12	8	8	10	13	5	10

3-b. The following results were obtained from the record of age (x) and the blood pressure(y) of a group of 10 men: 6

	x	y
Mean	53	142
Variance	130	165

and $\sum(x-\bar{x})(y-\bar{y}) = 1220$. Find the appropriate regression equation and use it to estimate the blood pressure of a man whose age is 45.(CO1)

3-a. Find the mode from the following data: (CO1) 6

x	0-6	6-12	12-18	18-24	24-30	30-36	36-42
y	6	11	25	35	18	12	6

3-b. Find the Karl Pearson coefficient of skewness for the following data- (CO1) 6

x	10	11	12	13	14	15
y	2	4	10	8	5	1