ISLAMIAH COLLEGE(AUTONOMOUS)

LAB MANUAL

ALLIED MATHEMATICAL STATISTICS PRACTICAL – I

U8MSAP31

For the Candidates admitted from the academic year 2018 – 2019

By

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U8MSAP31ALLIED MATHEMATICAL STATISTICS PRACTICAL – I

2 Hours / Week

List of Exercises

1. Measure of Central Tendancy
2. Measure of Dispersion
3. Correlation coefficient, Bivariate correlation coefficient, Rank correlation coefficient and coefficient of concurrent deviation.
4. Regression Equations
5. Curve fitting by the Method of Least Squares

Ex. No. 1 Measure of Central Tendancy

Date:

1. From the following data compute the Arithmetic mean by short cut method

Marks	0-10	10-20	20-30	30-40	40-50	50-60
No of marks	5	10	25	30	20	10

Aim:

Procedure:

Result:

2. Calculate the Arithmetic mean from the following data

Marks	0-10	10-30	50-60	60-100
No of marks	5	12	25	8

Aim:

Procedure:

Result:

3. Calculate the medium of this following frequency distribution

Marks	45-50	40-45	35-40	30-35	25-30	20-25	15-20	10-15	5-10
No of sheet	10	15	26	30	42	31	24	15	7

Aim:

Procedure:

Result:

4. Calculate the medium of the following data

Marks	No. of Student
Less than 5	229
Less than 10	224
Less than 15	465
Less than 20	582
Less than 25	634
Less than 30	644
Less than 35	650
Less than 40	653
Less than 45	655

Aim:

Procedure:

Result:

5. Calculate the mode of the following data

Marks	No of students
above 0	80
above 10	77
above 20	72
above 30	65
above 40	55
above 50	43
above 60	28
above 70	16
above 80	10
above 90	8
above 100	0

Aim:

Procedure:

Result:

6. Find the mode of the following data

Weight(x)	**No of students (f)**
93-97	2
98-102	5
103-107	12
108-112	17
113-117	14
118-122	6
123-127	3
128-132	1

Aim:

Procedure:

Result:

7. From the following data find the missing value when the mean is 115.86

Wages(Rs)	110	112	113	117	X	125	128	130
No of workers	25	17	13	15	14	8	6	2

Aim:

Procedure:

Result:

8. Find the missing frequency of Arithmetic mean is 28 of the data given below

Profit per shop	0-10	10-20	20-30	30-40	40-50	50-60
No of shops	12	18	27	S	17	6

Aim:

Procedure:

Result:

Ex. No. 2Measure of Dispersion

Date:

1. Compute the coefficient of quartile deviation from this following data

Marks	10	20	30	40	50	60
No of students	4	7	15	8	7	2

Aim:

Procedure:

Result:

2. Find the quartile deviation and the coefficient of from the following data:

Marks	1	2	3	4	5	6	7
No of student	20	28	40	12	30	15	50

Aim:

Procedure:

Result:

3. Find the mean deviation from mean for the following data

Size	2	4	6	8	10	12	14	16
Frequency	2	2	4	5	3	2	1	1

Aim:

Procedure:

Result:

4. Find the mean deviation from mean for the following data

Class interval	0-10	10-20	20-30	30-40	40-50	50-60	60-70
frequency	7	12	18	25	16	14	8

Aim:

Procedure:

Result:

5. Find the standard deviation from the following data
   240, 260,290, 245,255,288,272,263,277,251

   Aim:

   Procedure:

   Result:

6. Calculate the standard deviation from the following data

Salaries(Rs in thousands)	45	50	55	60	65	70	75	80
Number of persons	3	5	8	7	9	7	4	7

Aim:

Procedure:

Result:

7. Find the standard deviation from the following data

Marks	0-10	10-20	20-30	30-40	40-50	50-60	60-70
No of students	5	12	30	45	50	37	21

Aim:

Procedure:

Result:

Ex. No. 3Correlation coefficient, Bivariate correlation coefficient, Rank correlation coefficient and coefficient of concurrent deviation.

Date:

1. Calculate the correlation coefficient for the following heights in inches of father x and the son (y)

X	65	66	67	67	68	69	70	72
Y	67	68	65	68	72	72	69	71

Aim:

Procedure:

Result:

2. Calculate the karlpearson coefficient if correlation from the following data.

Marks in accountancy	48	35	17	23	47
Marks in statistics	45	20	40	25	45

Aim:

Procedure:

Result:

3. A sample of 10father and their eldest sons give the following data about their height in inches

Father	65	63	67	64	68	62	70	66	71	69
Son	68	66	65	69	71	67	63	70	62	64

Aim:

Procedure:

Result:

4. Find the rank correlation coefficient for the following data:

X	68	64	75	50	64	80	75	40	55	64
Y	62	58	68	45	81	60	68	48	50	70

Aim:

Procedure:

Result:

5. The following data give the expressions of machine operators and the performance ratings are given below:

Experience	16	12	18	4	3	10	5	12
Performance ratings	87	88	89	68	78	80	75	83

Calculate the correlation coefficient.

Aim:

Procedure:

Result:

Ex. No. 4Regression Equations

Date:

1. For the following data:

X	60	62	65	70	72	48	53	73	65	82
Y	68	60	62	80	85	40	52	62	60	81

Calculate the regression equation of x on y.

Aim:

Procedure:

Result:

2. Estimate (a) sale for advertising expenditure of Rs.100 lakhs and (b) the advertisement expenditure for sales of Rs.47 crores from the data given below.

Sales Rs.(crores)	14	16	18	20	24	30	32
Advertising expendure (Rs.lakhs)	52	62	65	70	76	80	78

Aim:

Procedure:

Result:

3. Find two regression equations for the following two series, what is most likely value of x when y=20 and likely value of y when x=22

X	35	25	29	31	27	24	33	36
Y	23	27	26	21	24	20	29	30

Aim:

Procedure:

Result:

Ex. No. 5Curve fitting by the Method of Least Squares

Date:

1. Fit a straight line to the following data

X	1	2	3	4	6	8
Y	2.4	3	3.6	4	5	6

Aim:

Procedure:

Result:

2. Fit a straight line to the following data.

X	0	1	2	3	4
y=Y	1	1.8	3.3	4.5	6.3

Aim:

Procedure:

Result:

3. Fitting a parabola of the second degree to the following data

X	0	1	2	3	4
Y	1	1.8	1.3	2.5	2.3

Aim:

Procedure:

Result:

4. Fitting a parabola curve to the following data

X	1.0	1.5	2.0	2.5	3.0	3.5	4.0
Y	1.1	1.3	1.6	2.6	2.7	3.4	4.1

Aim:

Procedure:

Result:

5. Fit an exponential curve $y = ab^x$ to the following data

X	1	2	3	4	5	6	7	8
Y	1.0	1.2	1.8	2.5	3.6	4.7	6.6	9.1

Aim:

Procedure:

Result:

6. Fit an exponential curve $y=a\,b^{x}$ to the following

X	2	3	4	5	6
Y	8.3	15.4	33.1	65.2	127.4

Aim:

Procedure:

Result:

7. Fit an equation if the form y=a x^b to the following data

X	2	3	4	5	6
Y	144	172.8	207.4	248.6	298.6

Aim:

Procedure:

Result:

8. Fit an equation if the form y= ax^b to the following data

X	1	2	3	4
Y	0.17	0.99	3.88	7.66

Aim:

Procedure:

Result: