ISLAMIAH COLLEGE(AUTONOMOUS)

LAB MANUAL

ALLIED MATHEMATICAL STATISTICS PRACTICAL – I

U8PYAP31 / U8CHAP32

For the Candidates admitted from the academic year 2018 – 2019

By

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U8PYAP31 / U8CHAP32 ALLIEDMATHEMATICAL STATISTICS PRACTICAL – I

2 Hours / Week

List of Exercises

1. Mean
2. Median
3. Mode
4. Standard Deviation, Quartile Deviation and Coefficient of Variation
5. Skewness and Kurtosis

Ex. No. 1 Mean

Date:

1. The following data gives the monthly income of 10 employees in an office
   Income (Rs.) 1780, 1760, 1690, 1750, 1840, 1920, 1100, 1810, 1050, 1950
   Calculate the arithmetic mean of the income.

   Aim:

   Procedure:

   Result:

2. From the following data of marks obtained by 60 students of a class, calculate the arithmetic mean using short-cut method.

Marks	20	30	40	50	60	70
No.of Students	8	12	20	10	6	4

   Aim:

   Procedure:

Result:

3. From the following data of marks obtained by 60 students of a class, calculate the arithmetic mean using step deviation method.

Marks	20	30	40	50	60	70
No.of Students	8	12	20	10	6	4

Aim:

Procedure:

Result:

4. From the following data, calculate the arithmetic mean

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

Aim:

Procedure:

Result:

5. Daily income of 10 families of a particular place is given below.
   85, 70, 15, 75, 500, 8, 45, 250, 40, 36.
   Find the geometric mean?

   Aim:

   Procedure:

   Result:

6. The mean height of 25 male workers in a factory is 61 inches and the mean height of 35 female workers in the same factory is 58 inches. Find the combined mean height of 60 workers in the factory.

   Aim:

   Procedure:

Result:

7. The following distribution shows the daily pocket allowance of children of a locality. The mean pocket allowance is Rs. 18. Find the missing frequency f.

Daily Pocket Allowance	11-13	13-15	15-17	17-19
No.of Children	7	6	9	13

Daily Pocket Allowance	19-21	21-23	23-25
No.of Children	f	5	4

Aim:

Procedure:

Result:

8. Find the Harmonic mean from the following data
2574, 475, 75, 5, 0.8, 0.08, 0.005, 0.0009.

Aim:

Procedure:

Result:

9. From the following data, compute the value of harmonic mean

Marks	10	20	25	40	50
No.of Students	20	30	50	15	5

Aim:

Procedure:

Result:

Ex. No. 2Median

Date:

1. Obtain the value of median from the following data
   391, 384, 591, 407, 672, 522, 777, 753, 2488, 1490.

   Aim:

   Procedure:

   Result:

2. From the following data, find the median

Income(Rs.)	1000	1500	800	2000	2500	1800
No.of Persons	24	26	16	20	6	30

   Aim:

   Procedure:

Result:

3. Find the median for the following data

Marks	45-50	40-45	35-40	30-35	25-30
No.of Students	10	15	26	30	42

Marks	20-25	15-20	10-15	5-10
No.of Students	31	24	15	7

Aim:

Procedure:

Result:

4. Find the median graphically for the following data

Wages	1000-1100	1100-1200	1200-1300	1300-1400
No.of Workers	6	10	22	30

Wages	1400-1500	1500-1600	1600-1700
No.of Workers	16	14	2

Aim:

Procedure:

Result:

Ex. No. 3Mode

Date:

1. Calculate the mode from the following data of marks obtained by 10 students
   10, 27, 24, 12, 27, 20, 18, 15, 30, 27.

   Aim:

   Procedure:

   Result:

2. Calculate the mode from the following data

Marks	10	15	20	25	30	35	40
No.of Students	8	12	36	35	28	18	9

   Aim:

   Procedure:

Result:

3. Calculate the mode from the following data

Marks	Above 0	Above 10	Above 20	Above 30	Above 40	Above 50
No.of Students	80	77	72	65	55	43

Marks	Above 60	Above 70	Above 80	Above 90	Above 100
No.of Students	28	16	10	8	0

Aim:

Procedure:

Result:

4. Calculate the mean, median and mode for the following data 10, 27, 24, 12, 27, 27, 20, 18, 15, 30.

   Aim:

   Procedure:

   Result:

5. Calculate the mean, median and mode from the given data

Marks	10-20	10-30	10-40	10-50
No.of Students	4	16	56	95

Marks	10-60	10-70	10-80	10-90
No.of Students	124	137	146	150

   Aim:

   Procedure:

Result:

6. Draw a histogram for the following data and find the Modal range. Check the value by direct calculation.

Wages	10-15	15-20	20-25	25-30
No.of Workers	60	140	110	150

Wages	30-35	35-40	40-45
No.of Workers	120	100	90

Aim:

Procedure:

Result:

Ex. No. 4Standard Deviation, Quartile Deviation and Coefficient of Variation

Date:

1. Calculate the standard deviation of 2, 4, 6, 8 and 10.

   Aim:

   Procedure:

   Result:

2. Calculate the standard deviation from the following data

Size of item	3.5	4.5	5.5	6.5	7.5	8.5	9.5
Frequency	3	7	22	60	85	32	8

   Aim:

   Procedure:

   Result:

3. Calculate the standard deviation of the following frequency distribution of marks

Marks	0-10	10-20	20-30	30-40
No.of Students	5	12	30	45

Marks	40-50	50-60	60-70
No.of Students	50	37	21

Aim:

Procedure:

Result:

4. Find the value of Quartile deviation and its coefficient for the following data

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

Aim:

Procedure:

Result:

5. Compute the coefficient of Quartile deviation from the following data

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

Aim:

Procedure:

Result:

6. Calculate the Quartile deviation and its coefficient from the following

Wages per week (Rs.)	Less than 35	35-37	38-40	41-43	Over 43
No.of Workers	14	62	99	18	7

Aim:

Procedure:

Result:

7. Calculate the mean deviation and its coefficient of the two income groups of 5 and 7 members given below

GI(Rs.)	4000	4200	4400	4600	4800		
GII(Rs.)	3000	4000	4200	4400	4600	4800	5800

Aim:

Procedure:

Result:

8. Find the prices of shares of X and Y below. Find out which is more stable in value

X	35	54	52	53	56	58	52	50	51	59
Y	108	107	105	105	106	107	104	103	104	101

Aim:

Procedure:

Result:

9. Two brands of tyres are tested with the following result

Life (in miles)	No. of Tyres	
	Brand X	Brand Y
20 – 25	1	0
25 – 30	22	24
30 – 35	64	76
35 – 40	10	0
40 – 45	3	0

(a) Which brand of tyres have greater average life

(b) Compare the variability and state which brand of tyres would you use on your trucks.

Aim:

Procedure:

Result:

Ex. No. 5Skewness and Kurtosis

Date:

1. Compute the coefficient of skewness and kurtosis for the following data
   10, 12, 15, 17, 20.

   Aim:

   Procedure:

   Result:

2. Compute the coefficient of skewness and kurtosis for the following data
   240, 260, 290, 245, 255, 288, 272, 263, 277, 251.

   Aim:

   Procedure:

Result:

3. Compute the coefficient of skewness and kurtosis for the following data

X	2	3	4	5	6
f	1	3	7	3	1

Aim:

Procedure:

Result:

4. Calculate the coefficient of skewness and kurtosis based on the following data

Variable	0-10	10-20	20-30	30-40
Frequency	1	3	4	2

Aim:

Procedure:

Result:

5. Calculate the first four moments about the mean and also the values of β_1 and β_2 from the following data:

Marks	0-10	10-20	20-30	30-40
No.of Students	8	12	20	30

Marks	40-50	50-60	60-70
No.of Students	15	10	5

Aim:

Procedure:

Result: