

Practice Set – V

Sub: Statistical Methods & Data Analysis (MA 231)

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(N.B.: R software may be used for Questions 1-3)

- LML Ltd. was incorporated in 1972. The company initially used to manufacture synthetic yarn. Later in 1984, as a result of technical collaboration with Piaggio, the company diversified into scooter manufacturing. The following table shows the sales of LML for different financial years. Represent the histogram for the sales data of the company. Compute mean, median, S. D., variance, coefficient of variation, skewness & kurtosis for the sales data.

Year:	1990	1991	1993	1994	1995	1996	1997	1998
Sales:	2167.2	2273	2120.3	2615.9	3490.6	5173.3	6246.2	7502.1
	1999	2000	2001	2002	2004	2005	2007	
	12503.6	7328.2	6337.5	5428.7	11116.3	6962.7	3653.8	

- The following table exhibits income (in million rupees) of Hyundai Motor India, Maruti Suzuki India, and Tata Motors from 1997-1998 to 2006-2007. Compare the income data of different companies through bar chart. Also, create the 2D&3D pie chart with title & colour. Compute mean, median, S. D., variance, coefficient of variation, measure of skewness & kurtosis for the income data of different companies & comment on the result.

<u>Year</u>	<u>Hyundai Motor India</u>	<u>Maruti Suzuki India</u>	<u>Tata Motors</u>
1997-1998	0.16	8496.02	7453.27
1998-1999	520.15	8187.25	6815.46
1999-2000	2352.91	9677.9	9160.07
2000-2001	3059.19	9259.6	8218.2
2001-2002	3434.86	9415.8	9009.78
2002-2003	4062.22	9462.8	10917.62
2003-2004	5905.62	11476.3	15593.64
2004-2005	7716.44	13777.8	20712.32
2005-2006	8956.28	15420.9	24375.95
2006-2007	10459.57	17917.7	32189.1

- You are given below the wages paid to some workers in a small factory. Construct the frequency distribution with class. Find all the measures of central tendency. Also calculate the range, IQR, variance, skewness & kurtosis of wages.

1.10, 1.13, 1.44, 1.44, 1.27, 1.17, 1.98, 1.36, 1.30, 1.27, 1.24, 1.73, 1.51, 1.12, 1.42, 1.03, 1.58, 1.46, 1.40, 1.21, 1.62, 1.31, 1.55, 1.33, 1.04, 1.48, 1.20, 1.60, 1.70, 1.09, 1.49, 1.86, 1.95, 1.51, 1.82, 1.42, 1.29, 1.54, 1.38, 1.87, 1.41, 1.77, 1.15, 1.57, 1.07, 1.65, 1.36, 1.67, 1.41, 1.55, 1.22, 1.69, 1.67, 1.34, 1.45, 1.39, 1.25, 1.26, 1.75, 1.57, 1.53, 1.37, 1.59, 1.19, 1.52, 1.56, 1.32, 1.81, 1.40, 1.47, 1.38, 1.62, 1.76, 1.28, 1.92, 1.46, 1.46, 1.35, 1.16, 1.42, 1.78, 1.68, 1.47, 1.37, 1.35, 1.47, 1.43, 1.66, 1.56, 1.48.

- The table below gives the frequency distribution of weights (gms.) of 80 apples:

Weights:	110-119	120-129	130-139	140-149	150-159	160-169	170-179	180-189
Frequency:	5	7	12	20	16	10	7	3

Determine the average and median weight of an apple.

5. An incomplete frequency distribution is given as below:

Variable:	10-20	20-30	30-40	40-50	50-60	60-70	70-80
Frequency:	12	30	?	65	?	25	18

Given that the total frequency is 229 and median is 46, find the missing frequencies.

6. The weights of a certain product produced in a factory are given below:

Weight:	3.0-3.1	3.1-3.2	3.2-3.3	3.3-3.4	3.4-3.5	3.5-3.6	3.6-3.7	3.7-3.8	3.8-3.9	3.9-4.0
Frequency:	5	10	12	20	25	18	10	8	8	5

Calculate the mean, mode, median and S.D.

7. You are given the distribution of wages in two factories X and Y.

Wages:	50-100	100-150	150-200	200-250	250-300	300-350
No. of } ^X	2	9	29	54	11	5
workers } ^Y	6	11	18	32	27	11

State in which factory the wages are more variable.

8. The following are scores of two batsmen A and B in a series of innings:

A:	12	115	6	73	7	19	119	36	84	29
B:	47	12	16	42	4	51	37	48	13	0

Who is the better score getter and who is more consistent?

9. Calculate the quartiles and Bowley's measure of skewness for the following data:

Weight (lbs)	70-80	80-90	90-100	100-110	110-120	120-130	130-140	140-150
# Persons	12	18	35	42	50	45	20	8

10. Compute Bowley's measure of skewness. Also find the Pearson's coefficient of skewness and kurtosis.

X :	10-14	15-19	20-29	30-39	40-49	50-59
F :	786	924	320	172	96	32