Sheet 1.

Q1. Calculate the first four moments about mean.

Classes	5-15	15-25	25-35	35-45	45-55
f	14	22	36	18	10

Ans. 0, 134.56, 126.14, 41840.82

Q2. The first four moments about the value 5 of the variable are 2, 20, 40 and 50. Calculate mean, variance, μ_3 and μ_4.

Ans. (7,16, -64,162)

Q3. The I four moments of a distribution about the working mean 4 are 1, 4, 10, and 45. Obtain the various characteristics of the distribution based on given information. Comment upon the nature of the distribution.

Ans. (Symmetrical and platykurtic)

Q4. Calculate β_1 and β_2 from the following data

Profit (in lakhs of Rs)	15	25	35	45	55
No. of companies	18	20	30	22	10

Indicate the nature of frequency curve.

Ans. ($\beta_1 = 0.0001,\ \beta_2 = 2.047$, Platykurtic)

Q5. The standard deviation of symmetric distribution is 4. What must be the value of μ_4, so that the distribution may be mesokurtic?

Ans. ($\mu_4 = 768$)

Q6. What do you mean by Skewness and Kurtosis.

Q7. Obtain the relation between μ_r and μ_r' also between

ν_r and μ_r.

Q8. What is the expression for moment about mean

(Central moments), moment about an arbitrary number **A** and moment about origin in case of both Individual series and frequency distribution.

Q9. Can we express ν_r in terms of μ_r' if yes then write the expression for I four moments.

Q10. Compute first four moments of the data 3, 5, 7, 9 about the mean. Also, compute the first four moments about the point 4.

Ans. (Moments about mean- 0, 5, 0, 41 and Moments about 4- 2, 9, 38.25, 177)

Q11. For the following frequency distribution, find the first four moments about the mean. Also find the value of β_1. Is it a symmetrical distribution?

X:	2	3	4	5	6
F:	1	3	7	3	1

Ans: (0, 0.933, 0, 2.533, Yes)