

Note: 1. All questions are compulsory

2. All questions carry equal marks

3. Draw neat, labelled diagrams wherever necessary

Q.1) Attempt the following (Any Four)

(20M)

- a) Write a short note on Arithmetic operator in R.
 b) Explain all four types of Scales of measurement with suitable example.
 c) The weight (in grams) of 38 oranges picked at random from a basket as follows
 45, 55, 30, 110, 75, 100, 40, 60, 65, 40, 100, 75, 70, 60, 70, 95, 85, 80, 35, 45, 40, 50,
 60, 65, 55, 45, 90, 85, 75, 85, 75, 110, 100, 80, 70, 55, 30, 70
 Draw Histogram for the above data

- d) Calculate Mean for the following data

Class interval	10-20	20-30	30-40	40-50	50-60	60-70
frequency	5	15	20	35	15	10

- e) Calculate D_9 for the following data

Length in inches	0-20	20-40	40-60	60-80	80-100	100-120
No. of units	1	14	35	85	90	15

- f) Find Q_1 , Q_2 and Q_3 for the following data

Marks	20	30	40	50	60
No. of students	4	16	20	18	10

Q.2) Attempt the following (Any Four)

(20M)

- a) Explain all types of Kurtosis with proper diagram
 b) Find mean deviation and coefficient of mean deviation for the data
 22, 24, 35, 41, 37, 39, 33.
 c) Define Standard deviation. Calculate Standard deviation for the data
 21, 16, 13, 11, 9, 14, 8, 14
 d) Calculate Quartile deviation and coefficient of quartile deviation for the data

Class interval	0-10	10-20	20-30	30-40	40-50
frequency	12	18	26	15	9

- e) Find first four raw moments for the following data

X	1	2	3	4	5
F	4	9	12	4	1

- f) Calculate Bowley's coefficient of skewness for the following set of observations
 3.4, 3.4, 3.5, 3.6, 4.2, 4.4, 4.5, 4.6, 4.7, 4.8, 4.8, 5.1, 5.5

Q.3) Attempt the following (Any Four)**(20M)**

- a) Calculate Spearman's Rank Coefficient of correlation for the following data

Rank in A	1	2	3	4	5	6	7	8
Rank in B	4	5	6	7	8	2	3	1

- b) Give all properties of Correlation coefficient
 c) Differentiate between Correlation and Regression
 d) Calculate Karl-Pearson's Coefficient of correlation for the following data

X	10	12	14	18	20	26
y	20	25	30	35	25	20

- e) Write a short on Scatter plot of Correlation
 f) Fit regression line of y on x for the following data

X	1	2	3	4	5	6
y	3	5	7	9	11	12

Q.4) Attempt the following (Any Five)**(15M)**

- a) If $\mu_2 = 16$ and $\mu_4 = 1024$ then find pearson's coefficient of kurtosis.
 b) Explain shortly types of Regression
 c) Explain Geographical classification and Chronological classification.
 d) Explain characteristics of good measures of central tendency .
 e) Write a short note multiple correlation
 f) Calculate Range and coefficient of range for the data 54, 45, 65, 85, 40.