VCD/   F.Y.B.Sc.(DS)   SEM-I   Descriptive Statistics   2 ½Hrs -   75 Marks

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 Three)   **(15M)**

a) Explain Methods of collecting primary data.
b) Draw Less than Cumulative frequency curve for the following data

Income in Rs.	0-500	500-1000	1000-1500	1500-2000	2000-2500	2500-3000
No. of families	5	10	13	20	8	4

c) Mention and explain general guidelines while drafting Questionaries.
d) Explain different types of Scales of measurement
e) 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

f) Draw Frequency polygon and frequency curve for the following data

Expenditure	20-30	30-40	40-50	50-60	60-70
No. of family	14	23	27	21	15

Q.2) Attempt the following (Any Three)   **(15M)**

a) Calculate Median for the following data

Marks	0-10	10-20	20-30	30-40	40-50	50-60
No. of students	12	18	30	20	15	5

b) Find Q1, Q2 and Q3 for the following data

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

c) Define the term Kurtosis. Explain all types of kurtosis.
d) Calculate Mean for the following data

Marks	0-10	10-20	20-30	30-40	40-50
No. of students	7	10	15	10	7

e) Calculate D_7 and P_{85} for the following data
   79, 82, 36, 38, 51, 72, 68, 70, 64, 63.
f) Calculate Bowley's coefficient of skewness fot 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 Three)   **(15M)**

a) Give merits and demerits of standard deviation.

b) Calculate variance and coefficient of variance for the data

Marks	0-10	10-20	20-30	30-40	40-50
No. of students	1	5	7	4	3

c) Calculate Quartile deviation and coefficient of quartile deviation for the following data.

80,75, 65, 4, 73, 63, 50, 70

d) For 200 workers from factory A, the arithmetic mean and standard deviation of daily wages are Rs. 120 and Rs. 10 respectively. For 150 workers from factory B. the arithmetic mean and standard deviation of daily wages are Rs. 100 and Rs. 20 respectively. Find combined standard deviation.

e) Find mean deviation and coefficient of mean deviation for the following data

f)

Height(in cms)	150-154	154-158	158-162	162-166	166-170
No. of persons	5	8	21	10	6

ine range and coefficient of Range. Find range and coefficient of Range for the following data 54, 45, 65, 85, 40.

Q.4) Attempt the following (Any Three)   (15M)

a) Explain briefly all properties of Correlation coefficient
b) Calculate Spearman's Rank Coefficient of correlation for the following data

R1	3	5	7	1	2	8	6	4
R2	2	1	4	5	7	6	3	8

c) Differentiate between Correlation and Regression
d) Write a short note on types of correlation using Scatter plot.
e) Calculate Karl-Pearson's Coefficient of correlation for the following data

X	7	4	8	6	5
y	6	5	9	8	2

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.5) Attempt the following (Any Three)   (15M)

a) Construct the 4 yearly moving averages for the data representing exports (in rupees lakh) of a company during 1988-1997

Year	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Exports	21	22	23	25	24	22	25	26	27	26

Also express original Time Series and the moving averages on graph paper.

b) Determine the equation of straight line which best fits the following data

Year	1998	1999	2000	2001	2002	2003	2004	2005
Exports	38	40	65	72	69	60	87	95

c) Explain briefly different components of Time Series.
d) Define Time Series with suitable example. Also Explain two models of Time Series

e) Compute seasonal index for the following data by method of simple average

Year	Quarters			
	I	II	III	IV
2002	321	348	348	348
2003	327	351	354	348
2004	342	359	381	345
2005	364	390	401	385

f) Explain briefly an Estimation of trend by smooth freehand curve with suitable example