Bachelor of Computer Application (B.C.A.) Semester—I Examination

STATISTICAL METHODS

Paper—III

Time : Three Hours] [Maximum Marks : 50

Note :— (1) **ALL** questions are compulsory and carry equal marks.

(2) Assume appropriate data wherever necessary.

EITHER

1. (a) Give definition of statistics and its importance. 5

(b) What are the types of data ? Give the sources of secondary data. 5

OR

(c) Write a note on frequency distribution and digraph. 5

(d) What are data representation techniques ? 5

EITHER

2. (a) Find the geometric mean of the following data :

X	1	2	3	4	5	6	7	8	9	10
F	2	3	4	1	1	2	2	3	4	1

5

(b) Define formula for mean, mode and median. Discuss the relationship among them. 5

OR

(c) Find the mode of the following data :

X	0—4	5—9	10—14	15—19	20—24
F	6	12	7	5	0

5

(d) Find the harmonic mean of the following data :

X	20—29	30—39	40—49	50—59	60—69
Y	3	5	20	10	5

5

EITHER

3. (a) Define the term dispersion, range, variance and quartile deviation. 5

(b) Define skewness. Find coefficients of skewness over 1, 2, 5, 9, 15, 22, 30, 40, 55, 70. 5

OR

(c) Calculate the standard deviation of the following series :

X — 40, 44, 54, 60, 62, 64, 70, 80, 90, 96. 5

(d) Define kurtosis. Find the kurtosis of series :

1, 2, 5, 8, 12, 17, 21, 25, 27, 28. 5

EITHER

4. (a) Calculate the correlation coefficient for the following data :

X	1	2	5	7	10	13	14	19	25
Y	4	9	10	13	16	17	20	25	27

5

(b) Find the line of best fit for the following data :

X	1	2	3	4	5
Y	1	2	1.3	3.75	2.25

5

OR

(c) A computer while calculating correlation coefficient between two variables X and Y from 25 pairs of observations obtained the following results :

$n = 25,\ \Sigma x = 125,\ \Sigma x^2 = 650,\ \Sigma y = 100,\ \Sigma y^2 = 460,\ \Sigma xy = 508.$

It was discovered later at the time of checking that he had copied down pairs of :

X	**Y**
6	14
8	6

while the correct values were :

X	**Y**
8	12
6	8

Obtain the correct value of correlation coefficients. 5

(d) Explain line of regression with example. 5

5. Attempt **ALL** :

(a) Differentiate between primary and secondary data. 2½

(b) Write the formula for median over the group data. 2½

(c) What is variance ? 2½

(d) What is significance of correlation ? 2½