

Bachelor of Computer Application (B.C.A.) Semester—I (C.B.S.) Examination**STATISTICAL METHODS****Paper—III**

Time : Three Hours]

[Maximum Marks : 50

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

(2) Assume suitable data wherever necessary.

(3) Draw neat and labelled diagram wherever necessary.

EITHER

1. (a) Explain the meaning of the word 'Statistics' as used in different sense. Discuss the scope of Statistics. 5

- (b) What is lottery method of sampling ? Explain its merits and demerits. 5

OR

- (c) Explain the different methods of collecting primary data. 5

- (d) How can statistical data be classified ? Explain. 5

EITHER

2. (a) What are the different measures of central tendency ? Explain. 5

- (b) Calculate the mean for the following frequency distribution :

Class Interval	0 – 8	8 – 16	16 – 24	24 – 32	32 – 40	40 – 48
Frequency	8	7	16	24	15	7

5

OR

- (c) Derive the median formula for continuous frequency distribution. 5

- (d) Find the simple and weighted arithmetic mean of the first n natural numbers, the weights being the corresponding numbers. 5

EITHER

3. (a) Define the term dispersion. Explain any two measures of dispersion with their merits and demerits. 5

- (b) The first of the two samples, has 100 items with mean 15 and standard deviation 3. If the whole group has 250 items with mean 15.6 and standard deviation $\sqrt{13.44}$, find the standard deviation of the second group. 5

OR

- (c) Define the following terms :

(i) Skewness

(ii) Kurtosis. 5

- (d) Calculate quartile deviation for the following data :

Marks	0–10	10–20	20–30	30–40	40–50	50–60	60–70
No. of students	6	5	8	15	7	6	3

5

EITHER

4. (a) Find the angle between two lines of regression :

$$Y - \bar{y} = r \cdot \frac{\sigma_y}{\sigma_x} (X - \bar{x})$$

$$X - \bar{x} = r \cdot \frac{\sigma_x}{\sigma_y} (Y - \bar{y})$$

5

- (b) Calculate the coefficient of correlation between X and Y for the following :

X	1	3	4	5	7	8	10
Y	2	6	8	10	14	16	20

5

OR

- (c) 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

- (d) Explain the coefficient of correlation with its limits.

5

5. Attempt **all** :

- (a) Discuss the cause of distrust of statistics.

2½

- (b) Define the following :

(i) Geometric Mean

(ii) Harmonic Mean.

2½

- (c) Give the coefficients of dispersion based on different measures of dispersion.

2½

- (d) Give any two properties of Regression Coefficients.

2½