KNT/KW/16/5313

Bachelor of Science (B.Sc. I.T.) Semester–III (C.B.S.) Examination

STATISTICAL METHODS

Paper – VI

Time : Three Hours] [Maximum Marks : 50

N.B. :— (1) **All** questions are compulsory and carry equal marks.

(2) Assume suitable data wherever necessary.

EITHER

1. (a) Explain importance and scope of statistics. 5

(b) What is primary data ? Explain the methods of collecting primary data. 5

OR

(c) What is tabulation ? Write the rules for tabulation. 5

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

EITHER

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

(b) Find the median wage of the following distribution :

Wages (in Rs.)	200–300	300–400	400–500	500–600	600–700
No. of workers	3	5	20	10	5

5

OR

(c) Derive mode formula for continuous frequency distribution. 5

(d) Draw the cumulative frequency curve for the following distribution showing the number of marks of 59 students in statistics :

Marks–group	0–10	10–20	20–30	30–40	40–50	50–60	60–70
No. of students	4	8	11	15	12	6	3

5

EITHER

3. (a) Define Skewness. Explain different measures of Skewness. 5

(b) Calculate quartile deviation from mean, 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

OR

(c) Write the characteristics for an ideal measure of dispersion. 5

(d) Find mean and standard deviation :

Expenditure	**No. of students**
Below Rs. 5	6
Below Rs. 10	16
Below Rs. 15	28
Below Rs. 20	38
Below Rs. 25	46

5

EITHER

4. (a) What is Regression ? Explain lines of regression in detail. 5

(b) The marks obtained by 10 students in Mathematics (X) and Statistics (Y) are given below. Find the coefficient of correlation between X and Y :

X	75	30	60	80	53	35	15	40	38	48
Y	85	45	54	91	58	63	35	43	45	44

5

OR

(c) Find the angle between two lines of regression

$$Y - \bar{y} = r\frac{\sigma y}{\sigma x}(X - \bar{x}) \text{ and } X - \bar{x} = r.\frac{\sigma x}{\sigma y}(Y - \bar{y})$$ 5

(d) What is correlation coefficient ? Explain any two assumptions of Karl Pearson's correlation coefficient. 5

5. Attempt all :

(a) Discuss the distrust of statistics. 2½

(b) Find the mode of the following frequency distribution :

Size (x)	1	2	3	4	5	6	7	8	9	10	11	12
Frequency (f)	3	8	15	23	35	40	32	28	20	45	14	6

2½

(c) What is Kurtosis ? 2½

(d) What is scatter diagram ? Explain. 2½