

Roll No.: _____

Name of the Course : B.Sc (Hons.) STATISTICS under CBCS
(LOCF)

Semester : I

Name of the Paper : **Statistical Methods**[\(GE 1\)](#)

Unique Paper Code : **32375101**

Medium of setting the Question Paper: **English**

Duration : 3 hours

Maximum Marks : 75

Instructions for candidates:

Attempt any FOUR questions

~~Each question carries~~[All questions carry](#) equal marks.

Show all the intermediate calculations and results.

1. The frequency distribution of weight in grams of mangoes of a given variety is given. Calculate the arithmetic mean, quartiles, quartile deviation and Bowley's coefficient of skewness.

Weight in grams	410 - 419	420 - 429	430 - 439	440 - 449	450 - 459	460 - 469	470 - 479
Number of Mangoes	14	20	42	54	45	18	7

Also plot the ogives and locate median graphically.

2. Given below are India's Exports of engineering goods from 1970 to 1976. Fit a parabolic trend $Y = a + bX + cX^2$ to the data.:

Year	1970	1971	1972	1973	1974	1975	1976
Exports (Rs. Crores) (Y)	116	126	130	176	299	404	550

3. Derive the relationship moments about an arbitrary point and moments about mean. Hence calculate the moments about mean if first four moments about an arbitrary mean value 28.5 of a distribution are 0.294, 7.144, 42.409 and 454.98. Also evaluate β_1 , β_2 and comment upon skewness & Kurtosis of the distribution.
4. A researcher wishes to determine whether there is a relationship between IQ and salary. A sample of 10 individuals was selected with the following results:

IQ	90	95	100	100	105	110	115	120	120	150
Salary (Thousand Rs.)	18	20	22	25	30	30	40	45	50	50

Compute Karl Pearson's correlation coefficient and Spearman's rank correlation coefficient. Find regression coefficients and write regression lines.

5. Following are the scores of the students in three subjects:

X1	22	15	27	28	30	42	40
X2	12	15	17	15	42	15	28
X3	13	16	12	18	22	20	25

Compute $R_{2,13}$ and $R_{3,12}$

6. Explain what are positive frequencies and ultimate frequencies. Given, the following data, find the frequencies of (i) the remaining positive classes and (ii) ultimate classes:
 $N = 1800$, $(A) = 850$, $(B) = 780$, $(C) = 326$, $(AB \cap C) = 200$, $(A \cap B \cap C) = 94$, $(A \cap C) = 72$ and $(ABC) = 50$.

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