

Reg. No. :

Name :

Fourth Semester B.Com. LL.B. (Five Year Integrated) Degree Examination,
April 2024

Paper III : BUSINESS STATISTICS

(2013 – 2019 Admission)

Time : 3 Hours

Max. Marks : 80

- I. Answer **any five** of the following. Each question carries **2** marks.
1. An average rainfall of a city from Monday to Saturday is 0.3 inch. Due to heavy fall on Sunday, the average rainfall for the week increased to 0.5 inch. What was the rainfall on Sunday?
 2. State the characteristics of statistics.
 3. Define correlation.
 4. What is meant by probable error of the coefficient of correlation?
 5. List the merits of Fisher's ideal index number.
 6. What is addition theorem of probability?
 7. Define measure of dispersion.

(5 × 2 = 10 Marks)

P.T.O.

II. Answer **any four** of the following. Each of the following carries **4** marks.

8. A university has to select an examiner from a list of 50 persons, 20 of them are women and 30 men, 10 of them knowing Hindi and 40 not. 15 of them being teachers and the remaining 35 not. What is the probability of the university selecting a Hindi knowing woman teacher?
9. Explain various central tendency measures and their relevance.
10. Define standard deviation and list its merits.
11. Distinguish between correlation and regression.
12. What is meant by time series analysis? Explain its components.

(4 × 4 = 16 Marks)

III. Answer **any four** of the following. Each question carries **6** marks.

13. Compute the price index from the following using average of price relative method.

Commodity :	A	B	C	D	E	F
Price in 2020 :	20	30	10	25	40	50
Price in 2021 :	25	30	15	35	45	55

14. In a correlation analysis, between production and price of commodity, the following constants were obtained. Write down the regression equation of price on production and calculate the price index when the production index is 116.

	Production index	Price index
Arithmetic mean	110	98
Standard deviation	12	5
Correlation coefficient production and price -0.4		

15. From the following table, calculate the coefficient of correlation by Karl Pearson method.

X: 6 2 10 4 8
Y: 9 11 5 8 7

16. Two students X and Y work independently on a problem. The probability that X will solve it is $\frac{3}{4}$ and the probability that Y will solve it is $\frac{2}{3}$. What is the probability that the problem will be solved?

17. Give note on

(a) random variable

(b) discrete series.

(4 × 6 = 24 Marks)

IV. Answer any three of the following. Each question carries 10 marks.

18. Fit a straight line trend by method of least squares.

Year:	2015	2016	2017	2018	2019	2020	2021
Production:	12	10	14	11	13	15	16

19. Compute Fisher's ideal index number.

	Quantity	Base year price	Quantity	Current year price
A	12	10	15	12
B	15	7	20	5
C	24	5	20	9
D	5	16	5	14

20. Calculate the coefficient of correlation between X and Y series from the following data.

	X series	Y series
Number of pairs of observations	15	15
Arithmetic means	25	18
Standard deviation	3.01	3.03
Sum of squares of deviation from the arithmetic mean	136	138
Summation of product deviations of X and Y series from their respective arithmetic means = 122		

21. Discuss the meaning and scope of statistics.

(3 × 10 = 30 Marks)

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